

# **The collaborative construction of knowledge through online forums for the development of sociocognitive writing skills**

Dalla Costa, Natalia V.

natidc@yahoo.com

Gava, Ileana Y.

yamigava@gmail.com

Facultad de Lenguas, UNC

## **1. The purpose of the study**

Changes in the production and access to information generated by information and communication technologies (ICTs) require new skills and offer cognitive and social opportunities for the construction of knowledge and collaborative learning. As a consequence, new literacy teaching models are required. In fact, as Area and Pessoa (2012) suggest, “appropriation of meaning and multimedia expression are the new terms for the old concepts of reading and writing” (p. 17). In this context, literacy implies developing not only instrumental but also cognitive and social skills to interact with information and transform it into knowledge in a collaborative manner. Even though online learning has increased in popularity, applications of web-based language learning (WBLL) have not yet been matched by research in higher education (Dalla Costa & Gava, 2009; García, González & Ramos, 2010; Sun & Chang, 2012). The purpose of this study is to analyse the impact of a blended learning project carried out in the virtual classroom of an English Language II university course for the collaborative construction of knowledge in an online learning environment. The specific objectives are the following: (a) To carry out a forum debate in the virtual classroom as a pre-writing activity, (b) to analyse the types of collaboration and the cognitive skills employed by the students, and (c) to carry out surveys to obtain the students' perceptions of this online activity. In the following

sections, we present a theoretical framework about the educational role of ICTs and reflect on the implications of the collaborative construction of knowledge in WBL environments and the usefulness of forum debates. We also describe the research design of this study. Finally, we present its results and limitations, pedagogical applications and future lines of research.

## **2. Theoretical framework**

Nowadays, ICTs play an important educational role as they offer cognitive and social opportunities for the construction of knowledge and collaborative learning. These are two competences included in digital literacy, also called *multiliteracy* and *new literacy* by authors who coincide that literacy requires more complex processes than the instrumental use of technology (Area & Pessoa, 2012).

The first cognitive opportunity offered by ICTs, the construction of knowledge, is not a new concept. Bereiter and Scardamalia (1987) already referred to the difference between *knowledge telling and knowledge construction*, that is, transforming information critically. However, this difference is specially relevant in today's society. As Area and Pessoa (2012) explain, in the new scenario of ICTs, it becomes necessary to distinguish between information and knowledge as data alone do not reflect the capacity to use them meaningfully. Then, literacy represents the appropriation of cognitive abilities to interact with information and transform it into knowledge in a critical way.

For this study, the classification of intellectual abilities proposed by Bloom (1971) was adopted. He identified six cognitive levels: *knowledge, comprehension, application, analysis, synthesis* and *evaluation*. Each of these levels is based on the previous ones and represents a higher order ability. Assuming that the development of critical thinking can be facilitated by the collaborative construction of knowledge by means of forum debates, we will apply Bloom's

taxonomy to describe the levels of cognitive abilities evidenced in students' contributions to the debate.

The second social opportunity offered by ICTs, collaborative learning, is not a new concept either although research in this area is scarce (Egbert & Petrie, 2005; Juárez de Perona, 2007; Zheng, Warschauer & Farkas, 2013). Educational environments in which cooperation is fostered were already present in Piaget' (1970), Bruner's (1990) and Vygotsky's (1978) constructivist approaches. These theorists put emphasis on transforming information into knowledge by means of a relational process (Tedesco, 2003). Therefore, knowledge is no longer something transmitted but constructed in the interaction with others (Bruffee, 1999).

These new cognitive and social opportunities for the collaborative construction of knowledge technological changes have generated have implications for the teaching of EFL. First, it is necessary to analyse the changes that ICTs are producing in education and rethink the new competences required. This implies teacher training that includes not only an instrumental but also a pedagogic approach to ICTs and an awareness of their potential and limitations.

Second, to foster responsible participation in virtual learning environments, it is essential to develop *digital citizenship* (Jenkins, 2011 in Meneses Rocha, 2013), which implies the critical and reliable use of technology. In this sense, Area and Pessoa (2012, p. 17) refer to “the formation of the citizen for the digital society” who acts with ethical principles to exercise his/her freedom of expression.

Third, Warschauer (2004) maintains that it is crucial to rethink a new pedagogy for the teaching of EFL. As students will need to communicate in English using the Internet in their professional lives, it is necessary to develop online writing skills so they can participate in these new communicative scenarios. In fact, the incorporation of Internet tools, such as forum debates, to education is no longer an option but a necessity.

The forum debate constitutes a pedagogical tool that can enrich the teaching and learning processes. It reflects constructivist concepts since it enables students: “to use

technologies for experiential learning tasks, to carry out tasks in collaboration with others, to reflect on the process (...), and to increase control over their own learning." (Bikowski & Kessler, 2002, p. 28). All of these factors help increase students' motivation.

Salmons (2008, p.4) proposes a taxonomy of online collaboration that provides a framework to understand the levels of collaboration in virtual learning environments. These levels include: 1) dialogue (participants exchange and summarise points of view and take group decisions), 2) peer feedback (students exchange comments to create a final version of a task), 3) parallel collaboration (each participant completes a component of a task that is combined in a collective final product), 4) sequential collaboration (participants work over prior contributions and these are combined), and 5) synergic collaboration (a final product is created mixing individual contributions). Even if students complete a project independently, if they integrate their efforts to obtain a result, we can describe their work as collaboration, which offers opportunities to construct knowledge.

### **3. Literature review**

The impact of ICTs on the teaching and learning processes is an aspect to which attention has been devoted over the last years. Several works that systematise the state of the art in relation to ICTs in education have been published (European Commission, 2006; Drent & Meelissen, 2008 in Area, 2010). At international level, Sánchez-Upegui (2009) carried out a study on the use of the virtual forum at Universidad Católica del Norte in Colombia. The results indicate that interaction was oriented to monologic styles without a conversational structure, and messages centered on personal response. However, one of the conclusions of this study is that the forum constitutes a valuable tool since it eliminates time and space barriers and, if used effectively, it fosters the collaborative construction of knowledge.

At national level, Davis, Fernández & Mailhes (2013) investigated the construction of knowledge by means of virtual forums in EFL teaching at UNLaM. The results revealed a positive attitude towards the virtual forum as it enabled students and teachers to exchange messages in a cooperative way. Such communication led to the development of writing skills. Therefore, forums constitute one of the most cooperative virtual learning environments to develop language skills and have a potential that should be exploited.

In the context of this study, Gava (2012) studied the collaborative construction of knowledge by means of forums and blogs in English Language II, at Facultad de Lenguas, UNC. The results led to the development of a taxonomy of collaboration in forum debates and a classification of critical thinking skills and collaboration in blogs. The author concludes that these tools facilitate collaboration and the application of higher order skills that are relevant for EFL learning.

#### **4. Research design**

This study was carried out in a virtual classroom of an English Language II course belonging to the second year of the English Language Teaching, Translation and Licentiate programmes. The participants were 32 students belonging to two groups of that course and two teachers.

This project constitutes a quasi-experimental study based on quantitative and qualitative methods. For data collection, questions for the forum debate and a student survey were designed. Before the forum debate, training in the types of collaboration and levels of cognitive abilities for the construction of knowledge in virtual environments was provided. During the debate, which was open for three weeks, the teachers published a question related to a syllabus unit, *Leisure and Holidays*, as a pre-writing activity. The teachers' role was to moderate the debate and summarise students' contributions. Finally, a topic for an expository essay in which students could use the knowledge constructed in the debate was uploaded.

Once the forum debate had finished, the analysis of students' contributions was carried out to determine the levels of collaboration and cognitive abilities used. After the students had submitted their essays, a post-study survey was carried out to obtain the students' perceptions of this activity.

## **5. Results**

The analysis of the data showed that the students' contributions to the debate were indicative of collaboration by means of online dialogue among the participants —the first level of collaboration identified by Salmons (2008). The students constructed knowledge collaboratively as they exchanged ideas and summarised key points. Besides, the six levels of higher order thinking skills identified in Bloom's (1971) taxonomy were applied. The following exchange illustrates three of the six levels: *knowledge* and *comprehension* of the topic and *application* of background knowledge and personal experiences to develop main ideas.

Student 1: *One of my favourite things to do in my free time is reading and, although I do it for pleasure, I know it also contributes to my learning process as a language student. I also think choosing how to spend our free time has a lot to do with our background and everything we were exposed to during our childhood. For example, going back to my personal experience, I think, probably, I like reading because I grew up in a home where everyone read a lot during their free time.*

Student 2: *I also agree with the point of view regarding the role of parents. Free time is the moment when we can do activities we enjoy. Personally, I enjoy reading and travelling. I read throughout the year whereas I only travel on holidays. I consider both of them enrich the mind, and also widen one's horizons.*

In addition, the students' contributions show instances of *synthesis, analysis and evaluation*—the other three levels of higher order skills. As the following exchange shows, the students analysed specific examples by making meaningful connections among reading materials and summarising main points. The level of evaluation becomes evident as they assessed the value of leisure time activities that contribute to intellectual and spiritual growth.

*Student 3: Hello everyone, yes, participating in our communities is very important. "El Sistema" is a kind of social project aimed at young people from poor socioeconomic and cultural backgrounds in order to change their lives. Similarly, the Wallace Foundation also seeks to improve the relationship youngsters have with the arts. Both of these educational projects work towards humanitarianism.*

*Student 4: I agree. It seems to me that leisure time activities are indispensable. They help us improve and foster our spiritual and moral growth. In my case, I enjoy spending my leisure time listening to music, and contributing to Bell Ville's charitable association. From my point of view, a day off work not always makes us lazy. As we learned in this unit, leisure is the time for doing something useful and depends on which kind of activities we do. To summarise, it is very interesting to see the activities that can be developed for the growth of the soul and the spirit.*

As these contributions show, students constructed knowledge collaboratively by selecting and sharing information related to the topic. Thus, the content of the forum evidenced the participants' knowledge, their ability to comprehend the topic, apply it to a new situation, analyse, synthesise and evaluate others' contributions.

Once the project was completed, a post-study survey consisting of closed- and open-ended questions was administered. The students' answers show that 59% of the participants were familiar with the use of online forums although 94% had not used them as a pre-writing

activity. Many students referred to advantages of the forum debate. For instance, most of them said that it was very useful to learn from their classmates' contributions and improve their writing skills. They also maintained that this debate was beneficial since there were no time or space constraints. Some students expressed that they could learn more about digital technology and believed that forums might be helpful for future translators. They also mentioned that this debate was useful to learn new vocabulary. Some pointed out that this online environment was suitable for those who are introverted and tend not to participate in face-to-face classes. Interestingly, 72% of the participants admitted that the forum was conducive to the development of the skills of analysis and synthesis. In general, students stressed the benefits of using the virtual classroom, of the guiding role of the teachers, and of developing group work skills. These are some of their opinions as regards the usefulness of the forum:

- *The forum was very useful to get new ideas and different opinions and use them in my writing. There were different ways of relating the material I hadn't thought of before.*
- *The forum helped me include new ideas in my essay and also new words, so I could improve my vocabulary.*
- *It is good to exchange ideas over the Internet through a forum. It doesn't take much time to participate and we do not have to be at a certain place to do this.*
- *I could not participate in the forum, but I got some ideas. I would like to participate in the next one.*
- *We can analyse the topic because there are many opinions and the teachers also participate, so the ideas are more precise and the content is better organised.*
- *We share detailed information and then teachers help to synthesise ideas.*
- *The forum was good for collaborative learning because we had to read previous posts before we wrote our contributions. I think it was a good strategy to work in teams.*



The analysis of the students' contributions and opinions shows that this online task appears to have been conducive to the collaborative construction of knowledge by means of the application of higher order skills and the meaningful negotiation of ideas through dialogue, key elements in collaborative learning settings (Bruffee, 1999).

## **6. Conclusion**

The online activity carried out enables us to state that the cognitive and social opportunities offered by ICTs seem to favour the collaborative construction of knowledge in the context of this study. In fact, the forum debate evidenced the first level of collaboration proposed by Salmons (2008), dialogue, and the higher order abilities proposed by Bloom (1971). In this activity, roles changed as the teacher was no longer the expert but the guide while students played an active role transforming information into knowledge.

One of the limitations of this project is the twofold role of the teacher as a researcher and participant. The participant role may influence the interpretation of results owing to subjective perceptions of students' performance. In order to have an additional instrument to analyse the data and triangulate results, the student survey was carried out, which enabled us to corroborate the information obtained from the analysis of the forum.

It would be interesting to analyse the impact of forum debate on subsequent writing tasks to determine whether the collaborative construction of knowledge evidenced in students' contributions to the forum and surveys is also reflected in their productions.

We would like to conclude quoting Litwin (2001), an Argentinian education expert, who synthesises the impact of ICTs on higher education: "In the same way as for a long time chalk and boards enabled us to learn how to write, the channels of communication that are open today enable us to help, collaborate and work with each other enriched on the basis of the

construction of communities in which it is possible to learn solidarity and the value of working with others.”<sup>1</sup>

## References

- Area, M. (2010). El proceso de integración y uso pedagógico de las TIC en los centros educativos. Un estudio de casos. *Revista de Educación*, 352, 77-97.
- Area, M. & Pessoa, T. (2012). De lo sólido a lo líquido: Las nuevas alfabetizaciones ante los cambios culturales de la Web 2.0. *Comunicar XIX*, 38, 13-20.
- Bereiter, C. & Scardamalia, M. (1987). *The psychology of written composition*. Hillsdale, NJ.
- Bikowski, D. & Kessler, G. (2002). Making the most of discussion boards in the ESL classroom. *TESOL Journal*, 11(3), 27-30.
- Bloom, B. (1971). *Taxonomía de los objetivos de la educación: La clasificación de las metas educacionales. Manuales I y II*. Buenos Aires: El Ateneo.
- Bruffee, K. (1999). *Collaborative Learning: Higher Education, Interdependence, and the Authority of Knowledge*. Second Edition. Baltimore and London: Johns Hopkins University Press.
- Bruner, J. (1990). *Acts of meaning*. Cambridge: Harvard University Press.
- Dalla Costa, N. & Gava, I. (2009). El aprendizaje colaborativo en entornos virtuales: El aula virtual en el proceso de enseñanza-aprendizaje del inglés en el nivel superior. *Conference Proceedings: Segundas Jornadas Internacionales de Tecnologías Aplicadas a la Enseñanza de Lenguas*. Universidad Nacional de Córdoba: Facultad de Lenguas. CD-ROM.
- Davis, E., Fernández, N. & Mailhes, V. (2013). Construcción de conocimiento en comunidades de práctica: foros. In L. Miranda, L. Rivas & E. Basabe. (Eds.). *Desafíos de la*

---

<sup>1</sup> Authors' translation.

*glotodiversidad en el siglo XXI: Enseñanza, investigación y extensión - Actas de las XIV JELENS y del I CLELENS*. Santa Rosa: Universidad Nacional de La Pampa.

Facultad de Ciencias Humanas, Departamento de Lenguas Extranjeras. CD-ROM.

Egbert, J. L. & Petrie, G. M. (2005). (Eds.), *CALL Research Perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Gava, I. (2012). *The collaborative construction of knowledge through online forums and blogging in an EFL Undergraduate Class*. Tesis de Maestría. Facultad de Lenguas, UNC. *Creative Commons*. Retrieved March, 2016 from <http://hdl.handle.net/11086/1386>.

García, M. A., González V. & Ramos. C. (2010). Modelos de interacción en entornos virtuales de aprendizaje. *Tonos: Revista Electrónica de Estudios Filológicos*, 19. Retrieved March, 2016 from <https://www.um.es/tonosdigital/znum19/secciones/estudios-11-entornosvirtuales.htm>

Juárez de Perona, H. G. (2007). (Ed.) *Proceso educativo y tecnologías: Un análisis desde la Universidad Nacional de Córdoba*. Córdoba: Asociación Cooperadora de la Facultad de Ciencias Económicas de la Universidad Nacional de Córdoba.

Meneses Rocha, M. (2012). Ciudadanía digital: Competencia del individuo en el siglo XXI. *El Universal: SNC Portal Informativo*. Retrieved March, 2016 from <http://www.itesm.edu/wps/wcm/connect/snc/portal+informativo>

Piaget, J. (1970). *The science of education and the psychology of the child*. New York: Basic Books.

Salmons, J. (2008). An overview of the taxonomy of collaborative e-learning. Retrieved March, 2016 from <http://proquest.umi.com/pqdlink?did=1192197331&Fmt=14&VType=PQD&VInst=PROD&RQT=309&VName=PQD&TS=1236719259&clientId=79356>

- Sánchez-Upegui, A. (2009). Nuevos modos de interacción educativa: Análisis lingüístico de un foro virtual. *Investigación Pedagógica*, 12(2), 29-46.
- Sun, Y. C., & Chang, Y. J. (2012). Blogging to learn: Becoming EFL academic writers through collaborative dialogues. *Language Learning & Technology*, 16(1), 43-61.
- Tedesco, J. (2003). Los pilares de la educación del futuro. In *Debates de educación*. Barcelona: Fundación Jaime Bofia, UOC. Retrieved March, 2016 from <http://www.uoc.edu/dt/20367/index.html>
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Warschauer, M. (2004). Technological change and the future of CALL. In S. Fotos & C. Browne (Eds.), *New Perspectives on CALL for Second Language Classrooms* (pp. 15-26). Mahwah, NJ: Lawrence Erlbaum Associates.
- Zheng, B., Warschauer, M. & Farkas, G. (2013). Digital writing and diversity: The effects of school laptop programs on literacy processes and outcomes. *Journal of Educational Computing Research*, 48(3), 267-299.