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ARTICLE

ICTs and collaborative learning: a case study of a class blog for improving the writing skills of pre-university students

Guadalupe Álvarez

gggalvarez@gmail.com, galvarez@ungs.edu.ar

Assistant Researcher, Centre for Research on Philosophical and Cultural Anthropology,
National Council for Scientific and Technical Research, Argentina

Research Lecturer, Institute of Human Development, National University of General Sarmiento, Argentina

Lorena Bassa

l_bassa@yahoo.com.ar

Language Lecturer, Admission Course, National University of Quilmes

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Abstract

In a previous study published in RUSC. Universities and Knowledge Society Journal, we observed that blogs in Spanish aimed at textual comprehension and production still lacked the instruments and materials to foster the cognitive processes necessary for collaborative creation of new knowledge. Given that context, this article studies a specific case of using a class blog in an Argentinean university, in which didactic strategies to encourage group writing activities have been put into practice. This case study will provide an important empirical basis for reflection on collaborative learning in blog writing activities.

Keywords

pre-university education, collaborative learning, blogs, writing skills

TIC y aprendizaje colaborativo: el caso de un blog de aula para mejorar las habilidades de escritura de los estudiantes preuniversitarios

Resumen

En un estudio previo, publicado en esta misma revista, hemos observado que los blogs en español orientados a la comprensión y producción textual aún carecen de instrumentos y materiales que favorezcan los procesos cognitivos necesarios para la elaboración colaborativa de nuevos conocimientos. Frente a esta situación, en el presente artículo, analizamos un caso específico de uso de blogs de aula en una universidad argentina, en el cual se han puesto en práctica estrategias didácticas para favorecer el trabajo grupal en torno a las actividades de escritura. El análisis de este caso provee una base empírica relevante para reflexionar sobre el aprendizaje colaborativo en actividades de escritura en blogs.

Palabras clave

educación preuniversitaria, aprendizaje colaborativo, blogs, habilidades de escritura

1. Introduction

The advent of and constant advances in information and communication technologies (ICTs) have opened up new didactic possibilities. Thus, in the university context, the possibilities offered by new technologies and how they can be best used have been recognised and, as a result, the use of digital technology as a support for teaching and learning has increased (Litwin, 2001; Duarte & Sangrà, 2001; Rodríguez Illera & Escofet Roig, 2004; Laurillard, 2010; Torres & Rama, 2010). In the field of reading and writing didactics, for example, alternative technologies are being explored as a means of exercising students' reading and writing skills (Álvarez, García & Qués, 2010). In this respect, one of the most widely used tools is the class blog, whose characteristics make it particularly effective in addressing the difficulties involved in reading and writing (Reale, 2008). A class blog is economical and requires precise contributions from the writer. Its reliable file system allows students to develop and connect their ideas over a shorter or longer period of time. Feedback fosters participation and collaboration among peers. The use of multimedia resources opens up the possibility of developing various fo-

reign language skills. Publication is immediate, which gives an instant sense of achievement, and active participation pushes the possibilities for learning beyond those permitted by time constraints in class. In this regard, blogs are a way of overcoming, to some extent, the discontinuity which results from the pace of work when taking a subject, since there is usually a time lag of at least a week between classes.

However, in a previous study (Álvarez, 2012), in which we analysed a series of blogs in Spanish (in Mexico and Latin America) that focused on developing the reading and writing skills of university students, we made several observations that indicated that not all of the characteristics identified by Reale (2008) were exploited to the same extent.

In the majority of the blogs studied, we noted that the materials and tools for organising and managing information predominated, while those for the processes of managing group knowledge were lacking. In this respect, there was little interaction between teachers and students, and among the students themselves. Indeed, what little there was amounted to solving the classes' practical, one-off problems. As asserted by Gros Salvat (2004), the blogs still lacked the instruments and materials to foster the cognitive processes necessary for collaborative creation of new knowledge.

Given that context, we wondered what strategies would be effective in encouraging collaborative learning (Dillenbourg, 1999, 2002; Kreijns, Kirschner & Jochems, 2003; Stahl, Koschmann & Stuthers, 2006). In order to address this question, we studied a class blog used in an Argentinean university where didactic strategies to encourage group writing activities have been put into practice. We considered that this case study would provide an important empirical basis for reflection on collaborative learning in blog writing activities and, as a result provide suggestions for fostering this kind of learning.

Before presenting this case, we would like to define what is understood by 'collaborative learning' and set out its characteristics in the context of technology-mediated collaborative writing (Davoli, Monari & Severinson, 2009; Passig & Schwartz, 2007; Warschauer, 2007).

2. Collaborative learning

The concept of 'collaborative learning' is still the subject of much debate. Various researchers continue to analyse its distinctive features and how it differs from cooperation.

Some believe that such a clear distinction between the two concepts does not exist and that their common characteristics are more important than their distinctive ones. In this respect, they explain that in the case of both collaboration and cooperation, there are possibilities for developing active learning, the teacher's role as a facilitator, shared teaching and learning experiences, and students' responsibility for their own learning (Kreijns, Kirschner & Jochems, 2003).

However, other researchers have identified differences between the two kinds of learning and are concerned with an in-depth definition of collaborative learning.

With regard to technology-mediated collaborative learning, for example, Stahl, Koschmann and Stuthers (2006) make a distinction between two kinds of group work: cooperative and collaborative. In keeping with that distinction, they consider that, when working cooperatively, students solve

tasks individually and then combine their partial results to produce the final product; whereas, when working collaboratively, they are all committed to a common task that is constructed by the whole group. The collaborative task is carried out by means of a group negotiation of the meanings, and only in this way can knowledge be created collaboratively.

Similarly, Dillenbourg (1999, 2002) explains that cooperation and collaboration are different in terms of the level of division of work. In cooperative work, fellow students solve sub-tasks individually and then assemble the partial results to create the final result (vertical division of tasks). However, in collaborative work, fellow students carry out the tasks 'together' although there is a certain amount of horizontal division of the activities. Whereas in the first case the division of tasks is quite rigid, in the second, the division of tasks can be unstable, that is to say, a division where the roles are constantly interchanging. It is important to highlight that, according to Dillenbourg (1999), collaborative learning is neither a method nor a mechanism, but rather a kind of social contract that, in the case of teachers and students, becomes a didactic contract.

According to this concept, collaborative interaction is defined by various criteria: a) interactivity; b) synchronicity, which is relative because, if an asynchronous technology is used intensively and gives rise to mutual modelling, it then has a synchronous effect; c) 'negotiability', which sometimes occurs when there is any ambiguity in the task; this to some extent involves negotiating and reaching agreements on certain concepts (known as 'grounding') which fosters learning. In this respect, the effectiveness of collaborative learning depends on the composition of the group, the scope for communication and the characteristics of the task.

Based on these criteria, Dillenbourg (1999) considers that the probability of collaborative interaction being generated actually increases when suitable conditions are set up in the first place (setting up the groups, setting the appropriate problems, using the appropriate software, etc.). In addition, when the teacher acts as a facilitator, the minimum number of pedagogical interventions should be made to redirect teamwork in a productive direction. Thus, collaboration can be promoted complementarily by structuring the collaborative process, or retroactively by regulating the interactions (Dillenbourg, 2002).

Additionally, for Kreijns, Kirschner and Jochems (2003), in technology-mediated contexts, collaborative learning can be encouraged by:

- 1) Using collaborative learning methods that have proved successful in face-to-face education.
- 2) Constructing interactivity, which means the extent to which a technology allows a two-way connection between participants (information sent and received in audio, video, text and image formats).
- 3) Switching teacher and student roles. They particularly recommended moving away from teacher-centred learning towards student-centred learning, from individual to group learning and from continuous group learning to asynchronous learning.
- 4) Increasing social presence. In this respect, it is useful to point out that, for the authors, one of the barriers to collaborative learning is related to the tendency of teachers to generate social interactions only for the educational objectives. In order to counteract this limitation, it is ex-

pedient to promote processes that enable students to meet each other, to commit to social relationships, to develop trust and a sense of belonging, and to build online communities.

In accordance with the previous observations, we will now focus on those studies that have analysed the distinctive features of collaborative writing, particularly in technology-mediated contexts.

2.1. Collaborative learning and writing in technology-mediated contexts

Writing is a complex process that students usually find difficult. For this reason, and for quite some time, a lot of research has been carried out into overcoming these obstacles. One such example was to explore the potential of collaborative writing and peer mentoring, which proved beneficial to textual production (Yarrow & Topping, 2001). On the other hand, in today's technological context, this type of collaborative production has been influenced by the changes associated with writing technology.

This idea is supported by Warschauer (2007), who explains that the technology-mediated synchronous communication that takes place between students, with or without a tutor, has become popular in English composition classes due to the various benefits that it offers. It has been shown, for example, that students begin to control the discussions by talking to each other without having to wait for permission from the teacher, and this encourages discussion and collaborative relationships. Thus, the students become better writers as they have an audience and a genuine purpose for writing (Faigley, 1990). In this respect, Warschauer (2007) points out that talking electronically, even though it is not the only way to break teacher-centred discussion, is an effective means of achieving this.

Along this line of thought, Davoli, Monari and Severinson (2009) analysed the use of three different educational platforms (Ping Pong, Blackboard and Moodle), where collaborative writing work is done in learning situations that combine face-to-face classes and distance education.

With regard to writing, the authors have observed that the use of platforms influences (positively or negatively) the students' attitudes towards writing. Students stated that their writing is not only more formal, but also more spontaneous. This contradiction is linked to the fact that the online medium is, at one and the same time, more public and less direct than a traditional class.

With regard to the task of commenting on the work of fellow students taking the same subject, users indicated that more time was spent on this activity using the platforms' asynchronous tools than in face-to-face classes. On the other hand, some students commented that it was easier to relate to other students via the platforms. This was particularly the case for shy students or students with a disability (such as, partial sightedness). Furthermore, some students claimed that interactions on the platforms were more 'democratic' than in face-to-face classes since, on the platforms, everybody had a chance to express themselves and they were all equally important.

Finally, by using the platform, learning was perceived as a dynamic process in which the teacher played a different role from usual. This supports the idea that peer-working methodologies collaborate with educational models where critical thought (rather than authority) is the basis for learning.

Passig and Schwartz (2007) carried out a comparative study of the quality of collaborative academic writing tasks of both face-to-face classes and online classes (in the latter case using tools available in GROOVE).

For most of the parameters analysed, the results showed that the quality of online collaborative writing was better. The greatest comparative differences were related to aspects concerning the originality and intellectual maturity of the writing. The most marked positive aspect was the structural organisation of the texts, which coincided with the results from other studies (Goldberg, Russell & Cook, 2003). It would seem, therefore, that the online collaborative writing technology enables students to create more consistent texts and to reach conclusions without the need for such extensive negotiations, as would be the case in a face-to-face situation. There is also a tendency for creating more drafts which improves the quality of the final product.

3. Methodology

In line with the issues raised, this study used a qualitative, case-study research method (Vasilachis de Gialdino, 2007). In particular, it includes an in-depth descriptive case study.

To this end, different activities and methods were organised into two main stages.

First, data were collected relating to the design and implementation of the experience by means of participant observation and teacher and student interviews.

Then, the data were analysed taking into consideration the fundamental aspects of the design of the proposal, its implementation, and the results for writing teaching and learning.

The case study concerned the use of blogs in two groups (of approximately 50 students each) in a subject where different textual comprehension and production tasks had to be carried out. The chosen subject, Language, formed part of the entry-level course for the National University of Quilmes (UNQ), in the province of Buenos Aires, Argentina.

Successful completion of this course is obligatory before being admitted onto various courses offered at the university. The case study focused particularly on pre-university students applying for courses in the field of Science and Technology. This experience was carried out over two consecutive academic years (2011 and 2012).

4. The use of a blog in a reading and writing workshop

4.1. Class blog design

As already mentioned, this pre-university course involved different assignments involving textual production. To complement the face-to-face classes of five hours per week divided into two classes per week, a virtual workspace was created in 2011 in the form of a blog for each class taking the subject.

The initial proposal was to set up a blog that provided a space with complementary materials for the subject and a means of continuous communication with the students (both for one-off queries and general information). To that end, the blog provided information relating to the subject (including the programme and optional reading list) and recommended links to various dictionaries and virtual libraries.

The teacher decided to set up the blogs in WordPress because of its content management system (CMS) and the different templates available (referred to as 'pages') which allowed for a more complex and variable hierarchical organisation and classification of entries than other CMSs, such as Blogspot or Blogger.

4.2. Implementation of the class blog. Individual and cooperative revision, and a tendency towards collaborative rewriting

Taking into account the interaction of the students with and on the blog, as well as the tasks carried out on it, three stages of its implementation could be identified. These were closely articulated to the face-to-face classes at all times.

4.2.1. Individual revision of own writing

In the first stage, the teacher decided to publish various textual productions by the students on the blog, which were considered satisfactory overall (except, perhaps, for the need for revising some specific issues). Items published on the blog were organised into different files which grouped together different 'model' answers for the assignments that had been set. The assignments consisted of writing short texts and were therefore well-suited to a blog format.

The teacher advised of their publication and indicated which elements in the text had to be revised and edited. So, the publication deadline provided the students with a reason and the motivation to revise their texts and rewrite them, a task which, when done on paper, students usually avoid as, in general, they cannot see any purpose in doing so.

The scope of the textual revisions increased with each successive publication. This was due to the interest shown by the students and their achievements in the tasks, as perceived by the teacher. Subsequently, the corrections made by the teacher initially pointed towards aspects such as spelling, punctuation and syntax, and then gradually expanded to include more general aspects such as structure, originality and accuracy of the texts. Instructions such as, 'Rewrite this sentence to avoid the wrong use of the gerund' exemplified the former case, and instructions such as 'Rearrange the information in the second and third paragraphs to make it clearer' exemplified the latter case.

In this first stage, then, using the blog achieved a more in-depth textual revision, which was carried out individually, and combined work on paper with virtual publication. However, it was the virtual publication that really turned rewriting into an educational objective of which the students could take ownership.

As a result, the students as a whole were more proactive in the task of revision (which they usually left entirely to the teacher), although it is worth mentioning that they achieved this by following

the teacher's guidelines, which acted as a kind of 'scaffolding' for this task. Nevertheless, their textual revision reached a level rarely seen in their work on paper. As such, in this first phase, the teacher played a traditional role of guiding the student. However, by means of the blog, the student learned to take charge of rewriting his/her own text.

4.2.2. Cooperative revision

However, the role of the teacher gradually changed, and this was due to the fact that the peer-working dynamic took precedence in the task of revision on the blogs.

In this stage, the teacher continued with the work of getting the students to rewrite their own textual productions, but the task that they were set was different. The teacher published the texts that the students had already revised together and added a comment (that emphasised the best aspects of the text) and a proposal. The latter was linked to one of the more frequent difficulties, as identified by the teacher, that students had in producing cohesive and coherent texts (for example, the use of connectors to articulate the answer and shape an integrated text, rather than a set of distinct isolated items).

Thus, the teacher set assignments for modifying, completing and rewriting sections of the texts. Some examples of the proposals were as follows: 'Replace the underlined connectors with equivalents'; 'Reformulate the source text topic without repeating the title of the text so literally' and 'Use connectors to fill in the gaps (_____):'. Then, the answers to these rewriting assignments were published below the original text entries and served as revised versions of the same.

This guided task was carried out by a student (who could not be the author of the text) who took on the role of editor. So, the published text had an author (who had already carried out an individual correction of his/her own text) and an editor (who had to improve certain aspects of the text).

Later on, the author had to evaluate whether the editing had been productive or not. This resulted in the task being shared between the pair (author – editor), which led to discussions about the suitability, accuracy and clarity of the rewriting carried out.

We therefore consider that the revision was carried out cooperatively, and that each of the students worked towards a common goal (a textual revision that served to answer an assignment), although it should be pointed out that every member took part in a distinct role: author or editor.

During this stage, the role of the teacher was mainly to indicate which particular aspects should be revised, and more responsibility was given over to the pair involved in the rewriting, who had to discuss and defend their decisions on the text.

4.2.3. Towards collaborative revision

Finally, a third stage in the implementation of the blogs could be identified. This stage differed from the previous ones in that the revision task was more comprehensive and involved an overall reorganisation and strengthening of the texts, generally on the basis of more than one text that had already been published on the blog. In other words, the assignments required a greater level of revision by proposing an overall rewrite of the texts.

This is exemplified by one of the writing assignments that was set relating to the concept of paratext. The assignment was to write the back cover of a non-fiction book based on limited information about the book (title, subtitle, author, publisher, collection, etc.).

To carry out this task, the teacher proposed a collage approach to the rewriting, combining more than one of the texts already published on the blog. The paratext of each of the books had to be rewritten by two or three students who were supplied with the back covers written by their classmates. The teacher asked the students to choose the fragments that were most 'effective' in each production so that they could later reorganise them. On the blog, the teacher asked each subgroup to 'Combine fragments from at least two back covers for the same book to meet the specific requirements previously set out'.

This task meant that the various students working on the same book had to carry out different tasks, discuss them and make joint decisions. That is to say, they had to reach an agreement on the fragments selected, justify their choices, propose various arrangements and discuss which option was best, and so on. Part of the assignment was to provide clear arguments.

It is worth noting that in the interactions between the students, discussions emerged about the meaning of certain concepts that were often used to describe writing. Consequently, the students made efforts to explain aspects to each other in their own terms, such as how to achieve greater clarity and how to make a text more persuasive.

We realised that, in this third stage, there was a tendency (that could almost certainly be strengthened) towards a collaborative revision of a text. This was due to the fact that the subgroups not only tackled a common task (as in the second stage), but also that the tasks of their members were not rigidly established. All of the participants were writers and revisers, either simultaneously or successively, but the roles were always interchangeable. The role of the teacher was limited to setting the assignment and indicating how it should be tackled. Also, negotiating the meanings that came into play during the activity, which is a characteristic of collaboration, took place in this kind of assignment, or in some of the subgroups at least.

Taking into account that blogs are an asynchronous technology, the dynamic described earlier occurred mainly between those subgroups that participated in the blog on a daily basis. Conversely, in those subgroups that participated sporadically, the discussions did not reach a level of justified consensus, and instead were mostly limited to publishing what each group member would have done.

In short, we found that the design of the blog varied throughout the academic year, and that the virtual space was used for rewriting the students' productions by means of various dynamics: first, individual revision; then cooperation; and finally, having set the right conditions, collaboration between peers began to emerge in some cases. Worthy of note is that although each stage was analysed independently, in reality, during the course, they 'accumulate' and together make up different journeys within the blog. However, the detailed description of each stage helped to identify the peer interaction and the role of the teacher that each of those stages generated.

4.3. Scope and limitations of using the blog

Based on the experience analysed and the interviews carried out with the teacher and the students, several evaluations of using blogs for tackling textual revisions can be made.

The potential for using this virtual space is linked to its motivating effect and its ability to deal with aspects of writing that are generally more difficult to tackle in face-to-face classes: revision of one's own text and collaborative composition of a text, which implies the clarification of certain concepts arising during the task. Evidently, all of these aspects are very closely related.

With regard to how the use of a blog was incorporated into these courses, both the teacher and the students observed that using the blog had a motivating effect, although this varied from student to student. The teacher highlighted the fact that there was not only a very active participation in the virtual space, but also that the blog had contributed to the students being more inclined to do peer work in their face-to-face classes, and also to greater fluency and precision in the conceptualisation of writing.

According to the students, they found the blog useful for a more detailed study of the topics covered in class and highlighted how productive it was as a collective source of study material for the evaluations. Indeed, the highest number of entries on the blog was made the week before each partial exam.

As already observed, the potential for the development of writing skills is two-fold. First, it should be acknowledged that the blog allowed the students to tackle the task of revising their own productions. The potential for considering more integral aspects of textual revision such as cohesion and coherence was notable. In this respect, Hayes (1996) suggested that, for novice writers, paying attention to general problems probably did not figure in their 'control flow'; furthermore, he clarified that such control flow could be modified. We believe that the rewriting assignments on the blog were aimed at addressing this fact, and they constituted a revision guide that ensured that this task was carried out in more depth.

As we endeavoured to show in section 4.2, the sequence of tasks set for textual revision permitted a progression from working individually to cooperatively and sometimes collaboratively. The aim of this progression was to enable the students to learn about the textual revision process, in which they gradually gained greater autonomy on the one hand, and peer interactions became more commonplace on the other. The role of the teacher was reshaped accordingly to become less of a central guide and more of a peripheral facilitator. It is nevertheless crucial to continue investigating the most effective ways of achieving a more in-depth collaborative revision that enables all the students to become involved.

Furthermore, several aspects of the class blogs still need to be resolved and strengthened. The students requested audiovisual materials and files that summarise and set out the content explained in the face-to-face classes. From the teacher's point of view, however, the inclusion of this kind of content on the blog puts pressure on the concept of face-to-face teaching and learning as conceived by the university to date, that is to say, as an obligatory condition for accrediting that students have taken the course.

5. Conclusion

The experience analysed managed to explore, in an incipient manner at least, the possibility of a learning journey that goes from individual to collaborative learning. In this experience related specifically to the development of writing skills, the transition from working individually towards a cooperative and collaborative construction approach appeared to be important.

This is probably connected with the fact that, in their educational trajectories, the students had only experienced teacher-centred learning that considers peer interaction as secondary. Therefore, in order to be able to establish a 'didactic contract' (Dillenbourg, 1999), which implies tackling a task cooperatively or collaboratively, it would seem to be effective to start from what is already known and gradually to move towards an unprecedented dynamic. In this respect, Warschauer (2007) argued that virtual spaces contribute to decentralising the role of the teacher in learning.

With regard to the teaching strategies that, in our opinion, foster collaborative knowledge construction, it was possible to analyse the structure of the tasks that were progressively set. These tasks were scaled according to the autonomy required from the student, and to the shared aspects of the task. In the second stage of this experience, fellow students shared common objectives, while in the third stage, in order to achieve collaboration, they had to be able to share not only common objectives, but also roles and conceptualisations. Regarding the latter, negotiating certain ideas became important (Dillenbourg, 1999), and it is worth underscoring that these were conceptual reflections based on procedural knowledge.

The technical characteristics of class blogs made them easy to keep up to date and to interact with. They therefore became productive by operating as dynamic spaces that were not structured around a single design or single kind of task set, but rather combined and varied depending on the didactic needs of the group.

In this experience, it was possible to identify the hermeneutic circle (Davoli, Monari & Severinson, 2009) that can be generated between education and technology. The pedagogic need to tackle collaborative textual revision was fed back into the virtual tool.

With regard to using the blogs for developing writing skills, various non-verbal resources (videos, images, animations, etc.,) still need to be studied in more detail, as does the inclusion of other sites and programs for completing the assignments set (Álvarez, 2012).

Therefore, taking into account the specific characteristics of the disciplinary knowledge and the importance of the teacher's pedagogic intervention (guided by the learning needs of the groups) it remains necessary to explore (theoretically and practically) the extent to which this experience of developing writing skills using blogs can be extrapolated to other educational content.

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About the Authors

Guadalupe Álvarez

gggalvarez@gmail.com, galvarez@ungs.edu.ar

Assistant Researcher, Centre for Research on Philosophical and Cultural Anthropology, National Council for Scientific and Technical Research, Argentina

Research Lecturer, Institute of Human Development, National University of General Sarmiento, Argentina

She holds a doctorate in the Arts (National University of Cuyo, UNCUYO, Mendoza, Argentina). She currently works as a research assistant at the Centre for Research on Philosophical and Cultural Anthropology for the National Council for Scientific and Technical Research (CIAFIC-CONICET), and as a researcher in the Institute of Human Development at the National University of General Sarmiento (IDH-UNGS).

Her research interests include teaching and learning processes in virtual learning environments, especially in the university context. She is currently studying ways of strengthening the use of new digital technologies to facilitate the development of reading and writing skills.

Centro de Investigaciones en Antropología Filosófica y Cultural, Consejo Nacional de Investigaciones Científicas y Técnicas (CIAFIC-CONICET)

Lacroze 2100

C1426CPS – Capital Federal

Argentina

Lorena Bassa

l_bassa@yahoo.com.ar

Language Lecturer, Admission Course, National University of Quilmes

She holds a qualification as a teacher in the Arts (University of Buenos Aires, UBA) and a higher diploma in Reading, Writing and Education (Latin American Social Sciences Institute, FLACSO). She currently works as a Language lecturer on the Admissions Course at the National University of Quilmes (UNQ), the Reading and Writing Workshop for the University Preparatory Course (CAU) at the National University of General Sarmiento (UNGS), and the Reading and Writing Workshop for the Initial Cycle at Arturo Jauretche National University (UNAJ).

Her teaching experience at pre-university and university levels has led her to become interested in the use of various technologies for the purpose of teaching reading and writing at higher levels.

Instituto del Desarrollo Humano, Universidad Nacional de General Sarmiento (IDH-UNGS)

Juan María Gutiérrez 1150

1613 Los Polvorines

Buenos Aires

Argentina



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