Writing as a Way of Participating in Knowledge Construction in Two Argentine University Classrooms

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Abstract

As in other countries, in Argentine universities writing is usually relegated both to the margins of the curriculum (via a general composition course) and to the margins of the courses (in which it is often assigned and then assessed without being explicitly integrated into the instruction). In this context, we explored two singular courses where, on the contrary, teachers have been intertwining writing and disciplinary concepts to mediate meaningful teachers and students' interactions about contents. This chapter examines how the responsibility towards knowledge construction was managed to increase the participation of students in Linguistics and Biology first-year classrooms. We systematically observed and analyzed classes to identify how writing, whose epistemic potential has been pointed out by numerous investigations, encouraged students' participation. Following the Theory of Joint Action in Didactics (Sensevy, 2007; 2011), we show that writing served as a way of sharing, constructing and negotiating knowledge. In particular, we found that (a) writing had a different prominent function in each class (as a teaching object in the Linguistics classroom and as a learning tool in the

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Biology course); and (b) these different functions were enabled by the didactic contracts and the milieus that teachers and students shared.

Keywords: writing, teaching practices, Linguistics, Biology

Resumen

Igual que en otros países, en las universidades argentinas la escritura suele ser relegada a los márgenes de los currículos de las carreras (mediante un curso o taller inicial) y de las materias (al momento de la evaluación sin haber sido explícitamente trabajada en clase). En este contexto, exploramos dos asignaturas singulares en las cuales, por el contrario, los profesores vienen entramando escritura y conceptos disciplinares para favorecer la interacción entre estudiantes y docentes en torno a los saberes que se enseñan. Este capítulo examina de qué modos los profesores gestionan la responsabilidad sobre la construcción de conocimiento a fin de incrementar la participación de los estudiantes en aulas de primer año de Lingüística y Biología. Observamos y analizamos sistemáticamente las clases para identificar cómo la integración de la escritura, cuyo potencial epistémico ha sido señalado por numerosos estudios, alentó la participación de los estudiantes. Siguiendo la Teoría de la Acción Conjunta en Didáctica (Sensevy, 2007; 2011), mostramos que la escritura sirve como un modo de compartir, construir y negociar el conocimiento. En particular, encontramos que (a) escribir funcionó de modo diferente en las distintas aulas (preeminentemente como un objeto de enseñanza en la clase de Lingüística y como una herramienta de enseñanza en la clase de Biología); y que (b) esas funciones diferentes fueron propiciadas por los contratos y los medios didácticos que compartían docentes y alumnos.

Palabras clave: escritura, prácticas de enseñanza, Lingüística, Biología

Introduction[1]

In this chapter, we seek to answer closely interrelated questions: How do teaching practices that intertwine writing and disciplinary contents mediate meaningful interactions between teachers and students in two Argentine university classrooms? How does writing function in these cases? How do teachers and students interact? These questions can be translated into our research aims: (a) to describe two instructional approaches where teaching practices intertwine writing and contents; and (b) to explore how writing impacts on the responsibility towards knowledge construction in those classes.

This work is framed in the WAC (Writing Across the Curriculum) and the WID (Writing in the Disciplines) lines of research (Bazerman, *et al.*, 2005; Carlino, 2005; Purser, Skillen, Deane, Donohue & Peake, 2008; Russell, 1990, 2002). They note that writing can function "as an intellectual process" rather than "a textual product" (Carter, Miller & Penrose, 1998). At the same time, it is shown that the ways of writing differ from one discipline to another. Consequently, professors of each subject need to make room for writing in their classes, particularly regarding undergraduate students since they are trying to enter into new discursive communities.

The literature in WAC/WID research shows that most teachers and students consider reading and writing as general communicative skills that only involve coding and decoding speech or thoughts. Such conceptualizations usually imply the idea that this set of skills can be later transferred to any activity and context. Furthermore, this idea of reading and writing ignores what Wells (1987) calls the *epistemic level* of literacy. According to Wells, the use of written language entails different degrees or levels of cognitive activity, giving the epistemic level a central role in teaching and learning. However, this level is not intrinsic to any literacy practice; it only emerges when people write and read with certain purposes and under specific conditions, such as when reading and writing are used to analyze others' and one's own thinking beyond the immediacy of an utterance (Wells, 1990b; Olson, 1988). Only reading and writing tasks that require analysis, comparison, and critical reflection can truly promote the elaboration of more complex knowledge (Carter, Ferzli & Wiebe, 2007; Langer & Applebee, 1987). In addition, Wells (1990a) indicates that the epistemic function of reading and writing needs to be taught through the joint participation of students and teacher in literate activities. The teacher, as an expert reader and writer in a specific subject area, allows students to use reading and writing epistemically progressively throughout assisted performance.

Lerner (2001) also emphasizes the essential role of teachers to scaffold students' reading and writing as a means to help them understand and learn disciplinary contents (Aisenberg & Lerner, 2008; Aisenberg *et al.*, 2009). In the same vein, Carlino, Iglesia and Laxalt (2013) in a study that surveyed 544 Argentine professors across the disciplines showed that, on the one hand, the majority of professors gave initial guidelines and assessed reading and writing afterward. On the other hand, only some professors intertwined reading and writing as a regular part of their classes, scaffolding these activities. Working with literacy

practices *interwoven* with disciplinary contents, according to the authors, can be a decisive factor for students to use them as an epistemic tool.

This is what happens in both courses we focused on in our case study. We have chosen them because they differ from usual courses in which literacy practices are seldom *interwoven* with disciplinary contents. Some key concepts from the Theory of Didactic Situations (Brousseau, 1998) and the Joint Action Theory in Didactics (Sensevy, 2007; 2011) have been illuminating in our analysis, particularly the didactic contract/milieu pair (Brousseau, 1998; 2007). The didactic contract can be defined (1) as an implicit system of mutual *expectations* between teacher and students about the knowledge at stake, (2) as an implicit system of *joint habits* about this knowledge, and (3) as an implicit system of mutual attribution of *intentions* (Sensevy, 2009). We approach the didactic milieu as a system of shared meanings that makes possible the joint action (Sensevy, 2007).

These concepts allowed us to characterize two instructional approaches that intertwine writing practices and contents, both in Linguistics and Biology classes, as well as to explore how writing impacts on the responsibility towards knowledge construction in these courses.

Methodology

Data analyzed here is part of a multiple-case study that focuses on the practices of argumentation and writing in two university first-year courses (Biology and Linguistics). Cases were selected because teachers incorporate writing practices in their daily activities. Thus, these cases illustrate some relevant aspects for understanding how the integration of writing in Science and Humanities classrooms affects students and teacher interaction around disciplinary contents. In this sense, we have what Patton (2002) calls *purposeful sampling*.

From a qualitative and interactive approach (Maxwell, 2013), our fieldwork techniques comprised: a collection of documents (exams, written assignments, and students' notes), class audio recordings, and semi-structured interviews with students. In this chapter, we primarily return to class transcripts about writing assignments. We aim to deliver a thorough description of the instructional approaches held by each professor. Data was analyzed using categorizing and connecting strategies (Maxwell & Miller, 2008). Below, we provide a brief description of each case and then present our findings.

Linguistics Class

The Linguistics class is a first-year course that offers an introduction to Discourse Studies as well as a text-production seminar for undergraduates majoring in Linguistics and Literature. It is offered in one of the leading public universities in Argentina. This 4-hour per week course meets twice a week and is delivered by professors who have an academic background in Linguistics, Writing, and Rhetoric and who are also interested in Pedagogy.

During the first semester, students learn about discursive genres, scientific discourse, academic writing and argumentation. Classes are divided into theoretical and practical sessions, with around 200 students attending the former and 30 to 50 students per classroom in the latter. During the second semester, practical classes become weekly tutorial meetings since in this term, students work in small groups (2-4 students) to write a conference paper. After studying discourse genres in the first semester, students are asked to choose one of them and research a formal or thematic aspect of the genre of their choosing, write a paper, and present it during a conference organized by the university.

Biology Class

The Biology class is an introduction course to Biology for students majoring in Veterinary Medicine, Psychology, and Environmental Sciences, among others. This semester-long course is offered by one of the leading public universities in Argentina and it counts for six hours of classes per week, in two three-hour sessions. There are 80 to 100 students per classroom, with two teachers in charge. The teachers have an academic background in Biology, but they are also interested in a writing and reading to learn approach.

In this class, students face problem-based writing tasks about biological issues regularly. Therefore, they are often asked to read to respond to inferential questions and to argue in favor of their ideas and understandings. All the questions are oriented to linking biological concepts with everyday problems. Students usually read and write at home and bring their writings to class for a shared discussion during the first hour and a half of the three-hour class sessions. Table 1 provides a systematic description of the Biology classes' structure.

Table 1. Description of Biology Classes' Structure

Biology Class Duration: 3 hours
Teacher recalls the writing assignments carried out by the students at home.
Students discuss in groups (with a maximum of 10 students) the writing assignments produced at home. Students elaborate on one common text taking into account what each of them wrote. Teachers answer questions.
Teachers and students work collectively together. Each group reads or explains the unified text they have written.
Break time
Teachers lecture with free interventions made by students. Teachers introduce the next writing assignment for the following class.

Source: own work

Findings

Analysis of class transcripts showed several similarities and differences between these cases. In both of them, writing was an essential aspect of their instructional approach. Nevertheless, they differed in the ways writing was mainly used: as a teaching object or a learning tool (i.e., as an end or as a means). In Linguistics, the aim was to teach a writing practice, whereas in Biology, writing constituted an instrument for thinking about biology concepts.

Focusing on how writing was employed in the Linguistics and Biology classrooms, within each case, we present findings around three points suggested by Brousseau (1998) and Sensevy (2007; 2011): (1) the instructional approach proposed by the teacher; (2) the writing assignment at stake and (3) the joint action implemented in order to tackle that writing task.

Linguistics Class: Writing Prevailing as a Teaching Object

The instructional approach of the Linguistics class was based on the legitimate participation of students in the Discourse Studies community. They were expected to research a topic related to the first-semester course contents and to communicate their research results by writing and delivering a conference paper. The didactic contract (i.e., the system of mutual expectation,

habits and attributions between teachers and students) was characterized by an apparent symmetry in the positions assumed by the participants. On the one hand, this symmetry was "apparent" since, as Brousseau (2007) and Sensevy (2007) emphasize, the didactic relationship is always and intrinsically asymmetric.

On the other hand, the symmetry relied on the fact that the writing assignment proposed by the teachers placed students as authors. In this case, the *practice* of writing a conference paper, as a teaching object, was integrated into the classroom with its rhetorical particularities. The writing was neither fragmented into pieces (writing process, grammar, punctuation, discourse types, documentation, etc.) nor trained as a set of skills, as usual in numerous writing courses (Carlino, 2013). On the contrary, it was developed as a social practice motivated by a meaningful scholarly situation. The milieu, then, was configured with research and writing as an essential element of the interaction between teachers and students.

Figure 1 shows the writing assignment. Here writing is presented to students as a contextualized activity, not as a generalizable elementary skill (Russell, 1990). It is along these lines that students were engaged in the process of delivering a conference paper, with all its specificities (i.e., formulating a research problem, conducting research, writing an abstract, fulfilling stipulated deadlines and conditions, presenting in front of a real audience). This call for papers was shared via email and social platforms, reaching not only those taking the course but also other faculty and students.

What did students and teachers do to tackle this task? They could take part in this educational event either individually or in small groups, and they had to be part of the audience as well. The course teachers would act as coordinators during the oral presentations, but as mentors during the writing process. The steady work between teachers and students during one semester of tutorial classes provided the latter with the tools for acting as novice—albeit legitimate—authors.

Figure 1. Writing Assignment in the Linguistics Class: a Call for Papers

VIII Students' Conference Seminar of Text Production
Linguistics and Literature Major, Department, University
Place, Date
Department of Philosophy and Languages, Address

The Seminar of Text Production of the Department of Philosophy and Languages invites you to participate in the VIII Students' Conference, which will take place on Date xx, in the aforementioned faculty facilities.
As every year, it invites students enrolled in the seminar to submit individual or group proposals to establish a discussion in the Linguistic and Literary fields.
The axis is given by the choice of a discursive genre of social circulation in any of its forms (written, oral, or audiovisual) in order to study how these genres are understood and produced by different social actors.

1. **Participation guidelines**
   Students of this seminar will be exclusively in charge of the expositions. There will not be simultaneous tables. The students themselves will, in turn, participate equally as listening to the presentations made by their peers.
2. **Registration and guidelines for authors**
   The presentations can be both individual and in small groups. The papers will be organized into sessions, according to thematic affiliations. Presentation time will be 20 minutes maximum (equivalent to 8 pages, in Arial 12, spacing 1.5). Advisors will act as moderators of each session.
   All authors must send an abstract of their papers (300 words) in Word format, Arial 12, simple spacing (prior correction of each advisor) before Date xx, to teacher Carla XXX (carlaxxx@hotmail.com), with a copy to the respective advisor. The file should contain the following information: surname of the authors followed by the word "abstract".
   The file must specified:
   - Title of the conference paper (centered with bold and capital letters).
   - Authors' full names (right margin; one below the other).
   - E-mail address of each author.
   - In the body of the text, it should be mentioned: research topic/problem, objectives, questions or hypotheses, theoretical framework, method (study population, data collection techniques, corpus) and results.
   - Five keywords.

   Complete papers must be sent one week before the Conference to the professor Adela, Conference Chair, to the following address: xxx@yahoo.com.ar.
   Authors are reminded that sending the conference paper until Date xx at this address is a condition to participate in the Conference and to pass the seminar.
3. **Attendance to the Conference is free. Certificates of attendance and/or exposition will be extended.**
   Organization committee:
   Seminar of Text Production, Department of Philosophy and Languages, University.

Source: own work

The transcript in Table 2 illustrates the final part of their experience. It shows how a group of students (aged between 18 and 19 years) was discussing their paper with teachers and peers after having delivered it. In this interaction, they analyzed the strip cartoons of a well-known Argentine strip cartoonist called Ricardo Siri Liniers[2]. According to this group, Liniers' strip cartoons show a distinctive poetic and artistic point of view about the issues they address. To test the hypothesis that the reader of Liniers' strip cartoons needed more communicative competence when compared to readers of other cartoonists, the students selected a corpus of his cartoons and surveyed peers majoring in Linguistics and Mathematics.

In their presentation, this group of students-authors emphasized that they had confirmed their initial hypothesis. Table 2 depicts what students and teachers commented after the authors had presented their results.

Table 2. Discussion of One of the Conference Paper's Results

[The presentation ends. Applause. There are three students-authors: Gabriela, Sofía and Carolina].		
[1]	Teacher Carlos	Well, questions from the audience? Doubts, suggestions, comments?
[2]	Student 1	I wanted to know more about the survey. Was it a qualitative or a quantitative one? Did you have open-ended or closed-ended questions?
[3]	Gabriela	A percentage of questions, those of general interest, were closed questions, yes or no questions. On the other hand, every student was expected to provide a full answer to explain why a certain strip cartoon was funny or not.
[7]	Student 3	Is there any specific strip cartoon where you have seen that the "soft" and "hard" sciences' students assigned different meanings to the cartoons?
[8]	Sofía	For example, that of the Road Runner. Mathematics students answered "Road Runner + Coyote = enemies". It was something very mathematical, they didn't take the time to write or explain their answers. In Linguistics, on the other hand, students said, "well, we would have to evaluate the perception of the protagonists and so, and so, and so..." [Audience's laughs]. There was a striking difference in the answers.

[2] Examples of Ricardo Siri Liniers' cartoons can be found in his official facebook page [https://www.facebook.com/porliniers/].

[9]	Student 4	[…] In relation to other cartoonists, would you emphasize that these readers' competence has to be sharper in the case of Liniers rather than in the case of other authors? Or is it different? What makes this competence special?
[10]	Gabriela	We, for example, speak also of Quino, because Quino, better known in the 60's, his comics also talked more about politics, but you had to know what they meant, what was democracy, what was the Cold War, Vietnam, for example. Those themes were extremely important in his comics. But currently, in Argentina, Liniers is the author that requires the most communicative competence.
[11-15 speech turns of reaffirmation of the main hypothesis].		
[16]	Student 4	So you reaffirm your point of view: Does Liniers require much more communicative competence than other authors?
[17]	Carolina	Yes, Yes.
[18]	Gabriela	Yes, for example, there is a cartoon that relates to a poem by Alfonsina Storni. It is not something that looks for humor. It is highly literary; most of the strip cartoons have an open ending. Liniers focuses so much on literature. Here we have included just one example. Many cartoons not only refer to books, but also to the act of reading and being an avid reader [Pause of 2 seconds].
[19]	Teacher Carlos	Any further questions for the authors? [Pause of 5 seconds]. Well, we welcome the next group then.

Source: own work

As can be noticed in Table 2, students positioned themselves as authors when the teachers allowed them to participate in a socially situated writing event. As authors, they took responsibility for the content of their writings: they detailed the results of the surveys justifying their methodological approach (speech turns [3] and [8]); they exemplified their assertions with strip cartoons from their corpus (speech turn [18]); and they responded to the audience's questions promptly and linked them to their research (speech turns [10] and [18]). Students that were part of the public also played an authentic role: they acted as real, cooperative and critical listeners of the work that the students-authors had presented (speech turns [2], [7], [9] and [16]). Teachers placed themselves as coordinators and moderators of the debates. They could abstain from commenting because they had already worked as mentors, side

by side with the students-authors during their research and writing process. This allowed students to have the leading voice during the conference.

This case constitutes an example of situated disciplinary writing practice as an end of the instructional process. Nonetheless, although writing prevailed as a teaching object, in the background it functioned also as a learning tool, a means of understanding concepts in the Linguistics domain. Each group of students-authors learned about their selected topic belonging to the second unit of the syllabus, dedicated to "Textual Typologies".

Biology Class: Writing Prevailing as a Learning Tool

Contrary to other traditional biology classes in Argentina, where the teacher's voice is predominant, the instructional approach of this Biology class was based on reading and writing to learn tasks. Writing served as a learning tool for linking and understanding biological concepts. If we conceive the didactic contract preeminently as a system of expectations (traditionally, the expectations are that teachers speak and students listen), we found that those expectations were transformed by the explicit integration of writing activities in this course. In a discipline such as Biology, paying explicit attention to writing can at first be seen as something odd and foreign. That is why we repeatedly observed teachers in this class, insisting on writing as a way of understanding and using biology concepts in meaningful ways.

The course proposed problem-based writing assignments, i.e., assignments that contextualized the questions asked and provided a scenario for understanding how biology works in everyday life. Students faced these writing tasks about biological issues on a regular basis. Professors did not give explicit instruction on writing, but they often worked on the content of students' texts, and they constantly stressed the importance of using the concepts and the disciplinary language to advance a standpoint about the issues being discussed. Figure 2 illustrates a typical writing assignment from this Biology class. After reading about the structure of the DNA, students had to explain a table based on the data that, in 1953, Watson and Crick had compared to establish the molecular structure of the DNA.

Figure 2. Example of a Typical Writing Assignment from the Biology Class

ACTIVITY 6

The following table represents the data obtained by Erwin Chargaff (1950) when breaking DNA molecules and separating bases in his laboratory. These data allowed him to identify the proportion of each type.

(a) Watson and Crick had access to these data when they designed the model that represents the DNA structure. Despite small experimental errors, what information do you think these results provided them with?

(b) We said before that the nitrogenous bases are faced in a complementary manner. Taking into account the data in the table, what would this complementarity be?

Percentage Composition				
Specie	A	G	C	T
Humans	30,4	19,6	19,9	30,1
Wheat	28,1	21,8	22,7	27,4
Sea Urchin	32,8	17,7	17,3	32,2

Source: own work

In light of this assignment, which asked students to make sense of the table and to link the concepts previously worked with the possible inferential thinking made by Watson and Crick, one of the teachers (Ana) led the exchanges of the students in the discussion. The transcript offered in Table 3 shows how students started sharing their explanations. A highly populated course like this one (with around 80 students enrolled) could have caused the predominance of a monological teaching style, with the teacher's voice prevailing over others. Nevertheless, in this case, the teacher actively sought the participation of the students in the process of knowledge construction. Students and teachers discussed the findings of Watson and Crick. The teacher reformulated the problem and encouraged the students to discuss their ideas. This contrasts with what frequently occurs in other classes where teachers move on to another issue just after the first right answer is given by one of the students.

Table 3. Discussion of Writing Assignment between Biology Teachers and Students

[78]	Teacher Ana	Well, then moving on to the DNA. There were three activities; the first one, activity 6, shows us a table. There were several groups that had activity 6, then, can someone start talking, and the rest, listen and confirm whether what peers say is correct or not. [The activity] has a little history. Summing up the topic is that he [Chargaff] knew of the existence of DNA, but its structure was unknown. We have already presented the DNA structure in the last class, the double helix. But at that time, in 1950, he ignored it, he knew very little of the DNA. [He knew] that it was made up of nucleotides, which was an acid, which was within the nucleus. But scientists began to study its chemical structure. Are you following me? And this Chargaff found what appears in the table. He did this not only with these three species, but also with many other species, but the results are more or less similar. Then, what conclusion can be drawn from the table?
[79]	Student 7	[Inaudible answer].
[80]	Teacher Ana	[Addressing Student 7] Laud! [Speaking to the rest of the class] Could you listen, please?
[81]	Student 7	The table shows that there are pairs of molecules with similar or approximate amounts, on the one hand; and on the other hand, that there are also pairs representing 50% of the molecule. With this data, we can learn [inaudible] how there is a certain complementarity. We have to take into account that there are two opposing chains and it should be the same amount of one, which is complemented with the same amount of the other. Well then, perhaps in the ADN-guanine relationship and [inaudible].
[82]	Teacher Ana	And there you would be answering the other question too. Yes? She replied [questions] A and B together. The other group [the group of students 9 and 10] that also had this activity, do you want to add something else?
[83]	Student 9	[Avoiding participation in the discussion] No, nothing.
[84]	Several Students	[Laughs].
[85]	Teacher Ana	But do you agree with what it was said?
[86]	Student 9	Yes, yes, we agree.
[87]	Teacher Ana	Well, then, the rest of the class, did you understand? So I don't have to repeat, did you understand the explanation she [Student 7] gave?

[88]	Several Students	[Murmur].
[89]	Teacher Ana	Could you comment on something [to the group of Student 9 and 10]? What did you think about this response? Let's see if we can help the rest [of the class].
[90]	Student 10	[Unsure. Participating because the teacher asked her to do so]. Can we read what we have written and then explain it?
[91]	Teacher Ana	Of course, of course.
[92]	Student 10	Ehh, [reading] "In the three species, the adenine and the thymine have almost the same percentage amount, while the guanine and the thyroxin, on the other hand, have almost the same percentage amount. The similarity between them is because they merge forming hydrogen bridges, which make up the DNA. Complementarity is that adenine and thymine, to have the same percentage, are faced and are joined together, while the same goes for the other two".
[93]	Teacher Ana	[Speaking to the rest of the class] What did they say? Did they give the same explanation as Student 7? Is it different? Did they add more information? What do you think? Do you agree?

Source: own work

Table 3 shows that professor Ana provided contextual information and defined the problem that students needed to solve (speech turn [78]). She also opened the exchanges to possible additions or disagreements (speech turns [82], [85] and [93]) and confirmed students' contributions when it was necessary to proceed with the activity (speech turn [82]). Student 7 (speech turn [81]) and Student 10 (speech turn [92]) returned to their writings in two different forms: Student 7 paraphrased and explained what she had written, whereas Student 10 read it aloud. These are two different modes of employing their own texts as a basis to dialogue with others. But they both show that student participation is not only mediated but probably enabled by reading and writing (Dysthe, 1996, 2012). Thus, students who wanted to participate (e.g., Student 7) could use the written texts as a pivot for sharing and discussing ideas. Meanwhile, more reluctant students, like students 9 and 10, could use them as a safety net to communicate an interpretation in progress, not yet fully developed. It is worth mentioning that students' answers were not copied from other texts, but they were shaped by what they had read and written.

The class transcript in Table 3 also reveals that students were not mere listeners while their teachers were lecturing. On the contrary, professors en-

couraged student participation using reading and writing activities. Writing in this class was promoted as an epistemic instrument, as a tool for understanding the contents at stake. Teachers sustained over the term a negotiation of a singular didactic contract, differing from pure lecture classes. This enabled the students to take part in the process of knowledge construction as fully-fledged participants. Using writing mainly as a learning tool, allowed students to take risks and contribute to the development of the lessons with their stable as well as their incipient ideas. This happened because the contract and the milieu that intertwined writing in the teaching of biology contents provided the students with the opportunity to go beyond a superficial understanding of the biological concepts and use them as the foundation of their participation.

Conclusion

Taking into account the research aims of this two-case study, our analysis allows us to state that:

(a) The instructional approach of these courses differs from most Linguistics and Biology classes in Argentina because teachers intertwine writing and contents. They do so in dissimilar ways. In the Linguistics case, the process of writing a conference paper was approached *mainly* as a teaching object itself whereas in the Biology case writing was used *mainly* as an epistemic tool. We stress the adverb *mainly* because in each class writing functioned as both, a learning tool and a teaching object, but one of these functions prevailed over the other.

In the Linguistics class, scholarly writing practices constituted a teaching object itself because students were expected to learn how to produce and deliver a conference paper. However, writing also functioned as a learning tool when they conducted research on a topic from the course syllabus and learned about it. In the Biology course, for example, students' understanding and using biology concepts, making links between concepts and real-life problems, and participating in their discussion were encouraged employing writing activities, which were laid out as epistemic tools. Additionally, teachers identified some typical features of writing about biology processes and considered them, in the background, as content to be taught. These biology teachers were concerned with students' learning to communicate about several processes that simultaneously occur in the organisms as well as to express causal relationships in their writings.

As Carlino (2018) has also shown, these two different ways of using writing, as a learning tool and teaching object, can be conceptualized as the ends of a continuum. In both cases, writing is not a peripheral, but a central component of the classes.

(b) In connection with how writing impacted on the responsibility towards knowledge construction in these classes, in both cases, we found that students actively participated in the processes of knowledge construction when writing was at the center of the class. They were able to discuss the content as legitimate participants by using meaningful writing practices. Instead of merely being listeners of their teachers' lectures, students performed as authors (Linguistics) and as invited contributors to lesson development (Biology).

Three issues deserve to be highlighted in this study. Firstly, the observational approach to data collection and the analysis of class transcripts allowed us to access, objectify, examine closely and understand class interactions, going beyond other methodologies which collect data through interviews and surveys.

Secondly, our study differs from other observational studies that scrutinize class transcripts from a microethnographic discourse analysis perspective (e.g., Bloome, Beierle, Grigorenko & Goldman, 2009; Bloome, Power, Morton, Otto & Shuart-Faris, 2005). Unlike that perspective, our research aims have required a didactic analysis: a systematic examination of instructional practices looked at with categories shaped by the French school of Didactics[3]. This theoretical framework has not been merged with the WAC and WID approach so far. We wonder whether future studies conducted within the WAC/WID domain would also benefit from using academic concepts (e.g., those from the theory of Joint Action in Didactics: Sensevy, 2011) to make sense of the interactions between teachers and students about specific subjects.

Finally, it is worth noting that the courses examined in this study have not developed from a WAC program. Writing centers and WAC programs are highly infrequent in Argentine universities. This means that teachers in these courses have not had any institutional support. The instructional approaches described in this chapter constitute rare efforts carried out by committed

[3] Didactics, as the science that addresses the conditions and constraints under which the communication of certain knowledge is enacted, focuses on the process of didactic action: what goes on when a specific piece of knowledge is taught (Sensevy, 2009).

teachers who have sought innovative ways of instruction to foster students' engagement and understanding. One can ask how these courses would benefit from a WAC/WID program and what they could contribute to them.

In conclusion, the analysis of class transcripts from these two cases shows two different but interrelated ways of working with writing in the first year of higher education. In Argentina, where public universities face huge enrollment issues, especially in first-year courses, the teachers of these classes emphasize the benefits of writing as a way of thinking, participating, sharing, and learning.

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