The impact of learning objectives in argumentative discourse: strategies, sequences and interaction patterns

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Abstract

Introduction. The aim of this study was to analyze how oral argumentative strategies, argumentative sequences and interaction patterns relate to argumentative content and the required learning objectives.

Method. Two different kinds of debates were analyzed. In the first, the participants defended one point of view, while in the second the objective was to reach a consensus. The data was analyzed qualitatively and quantitatively. The participants were 25 first-year university students.

Results: Results showed that participants tended to use a simple argumentative structure, even though there were some differences in the types of counterarguments, rebuttals, argumentative sequences and interaction patterns, according to the content and type of debate. When the aim of the debate was to defend a point of view, students were most likely to engage in a *partial conciliatory* interaction pattern, but when the purpose of the debate was to reach agreements, the most significant interaction pattern was *alternative* discourse, a pattern in which the participants employed strategies such as changing the argumentative focus and disparaging the opponent. However, in certain debate topics, students altered their strategies and interaction patterns, in an attempt to adapt to the purpose of the activity.

Discussion and conclusions. The study showed that university students employed argumentation typical of everyday contexts, using a series of isolated arguments based on a single point of view, placing excessive emphasis on examples and individual cases, repeating the same argument numerous times, and showing difficulty with relating their arguments through the use of counterargumentation and rebuttal. This suggests a need for university teaching plans to address competencies linked to argumentation and critical thinking from an ecological, functional and meaningful perspective, for the purpose of contributing to knowledge construction.

Key Words: oral debate, knowledge construction, argumentative strategies, interaction patterns, higher education.

Resumen

Introducción: Este artículo tiene como objetivo el análisis de las estrategias argumentativas orales, las secuencias argumentativas y los patrones de interacción en relación al contenido argumentativo y los objetivos de la demanda de aprendizaje.

Método. Se analizaron dos tipos de debates; un debate que implicaba persuadir para defender un punto de vista y el otro debate para llegar a un consenso. Los datos fueron analizados de manera cualitativa y cuantitativa. Los participantes fueron 25 estudiantes universitarios de primer curso.

Resultados: Los resultados indican que los participantes utilizaron una estructura argumental simple, aunque existen diferencias en los tipos de contraargumentos, refutaciones, secuencias argumentativas y patrones de interacción en función del contenido y el tipo de debate. En el debate cuya finalidad era persuadir para defender un punto de vista se pusieron de manifiesto patrones de interacción con un discurso *parcialmente integrador*; mientras que en el debate que requería llegar a acuerdos el patrón de interacción más significativo fue el discurso *alternativo*, utilizando estrategias como cambiar el foco de la argumentación y desestimar al oponente. Sin embargo, en algunos episodios temáticos los estudiantes modificaron estas estrategias y patrones de interacción, adaptándose así a la finalidad de la actividad.

Discusión y conclusiones: El estudio indica que los estudiantes universitarios utilizan una argumentación propia de contextos cotidianos, caracterizada por cadenas de argumentos aislados, basados en un único punto de vista, sobrevalorando los ejemplos y los casos particulares y repitiendo un elevado número de veces el mismo argumento, manifestando dificultades para relacionar sus argumentos mediante el uso de la contraargumentación y la refutación. Esto remite a la necesidad de que los planes docentes de las universidades contemplen el desarrollo de competencias vinculadas a la argumentación y el pensamiento crítico, desde una perspectiva ecológica, funcional y significativa, con la finalidad de contribuir a la construcción del conocimiento.

Palabras Clave: debate oral, construcción del conocimiento, estrategias argumentativas, patrones de interacción, educación superior.

Introduction

Based on the reforms driven by the Bologna Declaration, and due to its connection with developing critical and reflective thinking and its contribution to knowledge construction (Leitão, 2009; 2012), most Psychology and Education curricula at Spanish universities include argumentation as a transversal competency (Freixa, 2005; Maldonado, 2004). Internationally, the development of students' argumentative competency in university contexts has also been a recurring research topic in recent years. Studies in this area are thorough and have been developed from different perspectives.

A first group of studies, from the perspective of conceptual change, have studied strategies and conditions that allow students to reconsider their own point of view, and to adopt positions or perspectives that let them redescribe and create multiple representations.

From this perspective (Leitão, 2008), argument is a discursive activity with a dialogic and semiotic nature, allowing one to evaluate evidence and reflect on the basis and limits of certain statements, making it possible to adopt awareness and control over knowledge. Argument thus implies a certain degree of metacognitive knowledge, given that it requires the review of prior knowledge and beliefs about one's own knowledge, reflecting about it and incorporating other perspectives, promoting multiple representations about the topic that is being discussed (Correa, Ceballos & Rodrigo, 2003; Kuhn, Zillmer, Crowell & Zavala, 2013; Mason, Ariasi & Boldrin, 2011; Mateos, Cuevas, Martín, Martín, Echeita & Luna, 2011; Nussbaum & Sinatra, 2003; Pozo & Rodrigo, 2001; Rapanta, Garcia-Mila & Gilabert, 2013; Rapanta, 2019). Results from these studies indicate that university students lack sophisticated argumentative strategies such as counterargumentation and rebuttal, that is, while they know how to justify a thesis, they are not used to refuting a thesis while adapting to the specific conditions of each communicative situation (Correa et al., 2003; Cros & Vilà, 2002; Kuhn & Udell, 2003). The studies that analyze argumentative competencies of acting professionals such as judges, attorneys and teachers underscore that they have expert mastery of different strategies of counterargument, rebuttal, persuasion, while adapting to the communicative purpose; they are competent in the means of discourse such as modeling, concession, politeness, quotations and incorporating new words into their discourse as figures of authority (Cros & Vilà, 2002; Kuhn, Weinstock & Flaton, 1994; Kuhn et al., 2013).

The second group of studies, based on acknowledging the mediating action of the mind, or dialogism, have dealt with analyzing the role of dialogue in the activity of knowledge construction (Cano & Castelló, 2011; Engel & Onrubia, 2013; Felton et al., 2009; Leitão, 2009; Mercer, 2004; Rapanta, 2019; Vygostsky, 1978; Wertsch, 1993). Results from these studies reveal the importance of discursive strategies in peer interaction as a mechanism that facilitates construction of knowledge and meaning through actions shared in joint interaction.

Finally, a third group of studies takes the perspective of situated cognition and argumentation considered as a semiotically contextualized tool, claiming that we argue in different ways according to the context of the activity (Felton, Garcia-Mila & Gilabert, 2009; Felton, Garcia-Mila, Villarroel & Gilabert, 2015; Garcia-Mila, Gilabert, Erduran & Felton, 2013; Gilabert, Garcia-Mila & Felton, 2013; Litosseliti, Marttunen, Laurinen & Salminen, 2005; Nussbaum & Kardash, 2005; Simonneaux, 2001; Veerman, Andriessen & Kanselaar, 2002; Villarroel, Garcia-Mila, Felton & Miralda- Banda, 2019). Thus, these study results indicate that argumentation depends on the objectives of the activity, the meaning that we confer to it, the communication channel (synchronous, anachronous, oral, written, online), the representation of the audience and of all those elements that make up the relationship between the psychological process and the sociocultural scenario.

Most prior studies have focused on the use of argumentation in educational situations at university with debates that have a strictly persuasive purpose and normally take place outside the usual curricular activities.

By contrast, there is practically no research in our context that studies whether students' difficulties and strategies are the same when they participate in different debates with different purposes, and when these debates are integrated into functional contexts of teaching and learning, where they have an epistemic purpose.

This was the objective of our study, which analyzed the oral argumentative strategies of university students who were required to hold two debates with different purposes (one debate for defending a point of view and the other for reaching a consensus), as a regular part of the curricular activities involved in constructing knowledge about the topic in question.

Objectives and hypotheses

a) Analyze and compare the discourse structure, the variability in use of counterarguments and rebuttals, and the argumentative sequences in each type of debate.

b) Analyze and compare the interaction patterns as a function of the content of each type of debate.

Method

Participants

Participating in the study were 25 first-year university students from the dual degree program in Speech Therapy and Primary Education at the Ramon Llull University in Barcelona. The students were divided into two groups or seminars (G2 and G5) with 13 and 12 students, respectively. The mean age of students was 25 years. Regarding gender, 92.3% were female and 7.7% were male. The activity formed part of the students' curriculum and they were all informed about the objectives of the research, which they voluntarily agreed to participate in.

Instruments

Two learning scenarios were designed according to the study objectives.

The first was a *classic role debate* (D1) for the purpose of persuading or defending one's own point of view about a dilemma. The dilemma consisted of the importance of environmental factors vs hereditary factors in the origin and development of intelligence. For this debate, approximately half the students adopted the position in favor of environmental factors, and the other half of the group defended the position favoring hereditary factors. In order to learn students' initial position, prior to the debate, they responded to a preliminary question about their point of view on the topic to be debated. The question was worded as follows: "Regarding the dilemma that we are going to address, the influence of hereditary and environmental factors in the formation of intelligence, what is your point of view: that inherited or genetic factors have greater weight, or that environmental factors do?" After taking a position, they were to write an argumentative text justifying their answer, supporting their position with scientific texts on this topic.

According to their position taken, each student was assigned to one of two groups for the dilemma (in favor and against). The students' actual opinion was respected at all times, in order to ensure optimal motivation in defending their position. Only a small subgroup that was unsure about their position was allowed to freely choose which group they wished to join during the debate.

The second debate involved *role-playing* (D2), simulating a professional meeting where the purpose was to establish agreements by consensus, for solving a practical case. The case referred to the schooling of a child with specific educational needs; the purpose of the meeting or debate was to reach a consensus on whether there should be a change in the child's schooling in light of his progress reports. Just as in the D1 debate, in order to learn students' positioning about the case to be debated, they were asked the following question: "after reading the case and the attached reports, what would be your decision: should this child go to a special education school, or a mainstream school?" According to their positions taken, students were assigned a professional role (principal of the mainstream school, speech therapist, psychologist, specialized teacher, child's homeroom teacher, father, mother, principal of the special education school, etc.) and a position to defend, ensuring that the position they defended concurred with their personal opinion.

The two debates allowed us to analyze argumentative structure, sequences and interaction patterns in relation to the task assigned and the content of the topics under debate. To do so, we analyzed qualitative data (discourse analysis) with the Atlas.ti program, and afterward the quantitative data was analyzed using SPSS v.15.

Procedure

The task was conducted in the context of Seminar I in the first year of the dual degree program in Speech Therapy and Primary Education. Students were organized into two groups, with 13 and 12 students respectively. Before participating in the two debates, students indicated their point of view or their opinion about the topics that were going to be debated in an initial argumentative text, and they answered a questionnaire of their prior knowledge about the topics. The results of the prior knowledge questionnaire determined that there were no significant differences in the mean of prior knowledge about the topics that were going to be debated, so configuration of the two seminar groups was homogeneous. Students were there-

fore randomly assigned to each of the seminar groups, fulfulling the condition of no significant differences in level of prior knowledge about the topics that were going to be addressed.

Once the two groups of Seminars were established, we proceeded with the established programming for these learning formats, including the two types of debates with their respective teaching sequences.

The first element of the lesson programming was to answer a questionnaire about prior knowledge. Second, students were to manifest their point of view about the topics that were going to be debated and write an argumentative text to justify their positioning. Third, they were assigned certain mandatory reading according to the position they were going to defend, and they completed some outlines that regulated reading comprehension. Fourth, they prepared tables of arguments in favor and against the thesis that they were going to defend in the debates (these activities can be found in Cano & Castelló, 2016). Fifth, the rules for the debates were established and followed. Finally, students were again asked about their position on the topics debated, and they had to write another argumentative text to justify their opinions.

All the participants intervened in the two types of debates. They first conducted the debate with persuasive purposes, for defending a point of view (D1), and a month later they conducted the second debate (D2) with deliberative purposes, for consensus. In both cases, the point of view they defended agreed with their personal opinion.

The debates, lasting 1.5 hours each, were recorded in audio and video and later transcribed in full. The data was analyzed for each of the groups as a whole, because the debates were conducted in groups of 13 and 12 participants at one time. As mentioned above, the groups were divided into two subgroups, those in favor and those opposed to the thesis being defended. In addition, in the D2 debate, each student selected a professional role, given that the learning scenario simulated a professional meeting. At the start of the debate, each participant had about 3 minutes to express their position to the group, and then the moderator introduced the open debate where each student offered his or her arguments, counterarguments and rebuttals. At the close of the debate, each one individually had another three minutes to summarize the points of their argument.

Data analysis

The information related to the participants' discourse was analyzed according to the principles of Grounded Theory, with the help of the Atlas.ti program, using the following procedure. First, the content of the debates was classified, assigning each of the students' statements to topical units.

Next, the structure of the discourse was analyzed, categorizing statements as belonging to one of the three basic components of argumentative discourse: argument, counterargument and rebuttal. An argument was considered to be exposition of a point of view, followed by or introduced with a justification; a counterargument was an affirmation from the proponent or an opponent, casting doubt on the speaker's position; and rebuttal, an intervention designed to capture the arguer's immediate or remote reactions to a counterargument.

After this, the different counterarguments and rebuttals were classified according to the argumentative structure of the discourse, according to categories established by and adapted from the initial formulation by Leitão (2000, 2007).

Counterarguments were classified into four types: *partial agreement, irrelevant arguments, changing the focus of the argumentation* and *questioning the proponent's thesis.*

Counterarguments of the *partial agreement* type (henceforth, PA) serve to support a part of the thesis under debate. In this case, one takes into consideration that a determined posture or thesis, whether one's own or someone else's, can be qualified, and a partial agreement reached without abandoning one's conviction or position.

Counterarguments of the *irrelevant arguments* type (hereafter, IA) are used to question the thesis that is being defended with irrelevant, repetitive, or less-than-solid arguments in relation to the thesis under debate.

Counterarguments of the type *changing the focus of the argumentation* (hereafter CF) are used to offer another opinion or point of view, modifying the course of the debate. This type of counterargument can happen in two ways: by denying what has been said, or by offering an opinion that contradicts or changes the topic of the initial argumentation.

Counterarguments of the type *questioning the proponent's thesis* (hereafter QT) are arguments where the opponent limits himself/herself to explicitly challenging the proponent's arguments.

The rebuttals were classified into three types. Rebuttals of the *disparaging* type (hereafter, D) refer to the action of disparaging or negating the interlocutor's argument. Rebuttals of the *local agreement* type (hereafter, LA) are cases where the proponent begins by supporting part of the content of the counterargument, but continues by defending his/her initial position, although new arguments may be added. *Conciliatory rebuttals* (hereafter, C) are cases where the interlocutor shows agreement with part of the counterargument that involve changes in his/her position. These changes indicate integration of a part of the content of the counterargument, that is, the speaker reconstruct her/his original position.

Once all the statements were categorized, we proceeded to establish the argumentative sequences. We understand as an argumentative sequence every argumentative act between speakers in a communicative interaction, from an argument that is not preceded by a counterargument, to an argument immediately preceded by counterarguments and rebuttals. The interactions between the speakers determine the argumentative thread and hence the beginning and end of an argumentative sequence. For this purpose, all possible sequenced combinations of every type of argument, counterargument and rebuttal were identified, resulting in 17 types of possible argumentative sequences. These sequences are as follows:

1. Argumentative sequence: consisting only of an argument (hereafter, AS: A).

2. Argumentative sequence: argument followed by a counterargument of the type partial agreement (hereafter, AS: A-C (PA)).

3. Argumentative sequence: argument followed by a counterargument of the type irrelevant arguments (hereafter, AS: A-C (IA)).

4. Argumentative sequence: argument followed by a counterargument of the type changing the focus of the argumentation (hereafter, AS: A-C (CF)).

5. Argumentative sequence: argument followed by a counterargument of the type questioning the proponent's thesis (hereafter, AS: A-C (QT)).

6. Argumentative sequence: argument followed by a counterargument of the partial agreement type and a rebuttal of the disparaging type (hereafter, AS: A-C (PA)- R (D)).

7. Argumentative sequence: argument followed by a counterargument of the type irrelevant arguments and a rebuttal of the disparaging type (hereafter, AS: A-C (IA)- R (D))

8. Argumentative sequence: argument followed by a counterargument of the type changing the focus of the argumentation and a rebuttal of the disparaging type (hereafter, AS: A-C (CF)- R (D)).

9. Argumentative sequence: argument followed by a counterargument of the type questioning the proponent's thesis and a rebuttal of the disparaging type (hereafter, AS: A-C (QT)- R (D)).

10. Argumentative sequence: argument followed by a counterargument of the partial agreement type and a rebuttal of the local agreement type (hereafter, AS: A-C (PA)- R (LA)).

11. Argumentative sequence: argument followed by a counterargument of the type irrelevant arguments and a rebuttal of the local agreement type (hereafter, AS: A-C (IA)- R (LA)).

12. Argumentative sequence: argument followed by a counterargument of the type changing the focus of argumentation and a rebuttal of the local agreement type (hereafter AS: A-C (CF)- R (LA)).

13. Argumentative sequence: argument followed by a counterargument of the type questioning the proponent's thesis and a rebuttal of the local agreement type (hereafter, AS: A-C (QT)- R (LA)).

14. Argumentative sequence: argument followed by a counterargument of the partial agreement type and a rebuttal of the conciliatory type (hereafter, AS: A-C (PA)- R (C))

15. Argumentative sequence: argument followed by a counterargument of the type irrelevant arguments and a rebuttal of the conciliatory type (hereafter, AS: A-C (IA)- R (C)).

16. Argumentative sequence: argument followed by a counterargument of the type changing the focus of argumentation and a rebuttal of the conciliatory type (hereafter, AS: A-C (CF)- R (C)).

17. Argumentative sequence: argument followed by a counterargument of the type questioning the proponent's thesis and a rebuttal of the conciliatory type (hereafter, AS: A-C (QT)- R (C)).

Finally, the interaction patterns were established according to the argumentative sequences and topic units identified from the content analysis of the different debates. The interaction patterns emerged from analysis of contiguous dyads, conducted with the Atlas.ti Query tool, which allowed us to maintain the time axis of the discourse of argumentative sequences and to establish four interaction patterns. We categorized as a *disruptive discourse interaction pattern* (hereafter, *DD*) those isolated *arguments* that were not taken up again,

either in counterargument or rebuttal, in the discourse. The *alternative discourse interaction pattern* (hereafter, *AD*) includes situations where the arguments were accompanied by *counterarguments* in order to *change the focus of the argumentation*, or by rebuttal so as to *disparage* the opponent's arguments. The *partially conciliatory interaction pattern* (hereafter, *PC*) implies that the speaker integrated certain reasoning from the opponent's arguments into her/his counterarguments or rebuttal. This pattern includes *arguments* accompanied by *counterarguments* of the *irrelevant arguments* type or by the *partial agreement* type, or by *rebuttals* of the *local agreement* type.

We considered it *conciliatory discourse* (hereafter, *CD*) when the proponent integrated all the reasoning from the opponent's arguments. This is characterized by the existence of *arguments* accompanied by any type of *counterargument* but followed by a *conciliatory rebuttal.* An example of the conciliatory discourse interaction pattern is shown below: it is composed of a Type 14 argumentative sequence: A-C(PA)-R(C) plus another Type 16 argumentative sequence, where we observe an argument followed by a counterargument of the type changing the focus of argumentation and a rebuttal of the conciliatory type (Figure 1).
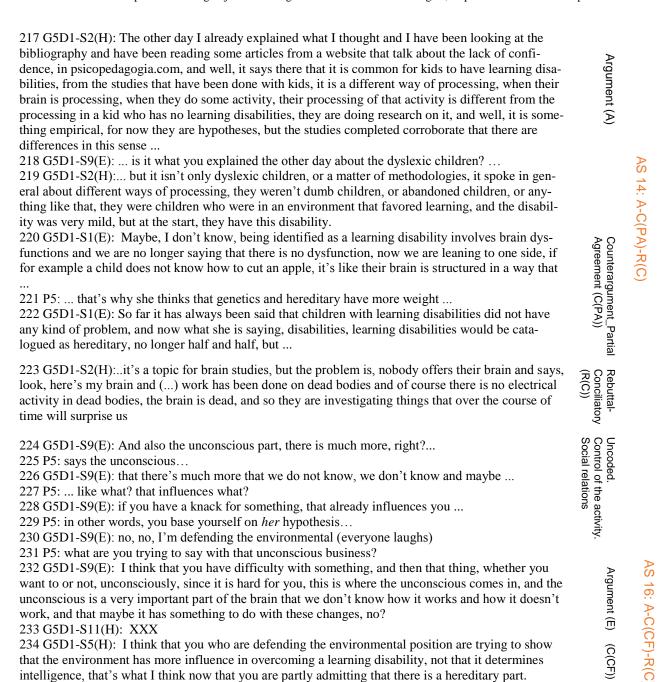
217 G5D1-S2(H): The other day I already explained what I thought and I have been looking at the bibliography and have been reading some articles from a website that talk about the lack of confidence, in psicopedagogia.com, and well, it says there that it is common for kids to have learning disabilities, from the studies that have been done with kids, it is a different way of processing, when their brain is processing, when they do some activity, their processing of that activity is different from the processing in a kid who has no learning disabilities, they are doing research on it, and well, it is something empirical, for now they are hypotheses, but the studies completed corroborate that there are differences in this sense ...

218 G5D1-S9(E): ... is it what you explained the other day about the dyslexic children? …

219 G5D1-S2(H):... but it isn't only dyslexic children, or a matter of methodologies, it spoke in general about different ways of processing, they weren't dumb children, or abandoned children, or anything like that, they were children who were in an environment that favored learning, and the disability was very mild, but at the start, they have this disability.

220 G5D1-S1(E): Maybe, I don't know, being identified as a learning disability involves brain dysfunctions and we are no longer saying that there is no dysfunction, now we are leaning to one side, if for example a child does not know how to cut an apple, it's like their brain is structured in a way that ...

221 P5: ... that's why she thinks that genetics and hereditary have more weight ...

222 G5D1-S1(E): So far it has always been said that children with learning disabilities did not have any kind of problem, and now what she is saying, disabilities, learning disabilities would be catalogued as hereditary, no longer half and half, but ...

223 G5D1-S2(H):..it's a topic for brain studies, but the problem is, nobody offers their brain and says, look, here's my brain and (...) work has been done on dead bodies and of course there is no electrical activity in dead bodies, the brain is dead, and so they are investigating things that over the course of time will surprise us

224 G5D1-S9(E): And also the unconscious part, there is much more, right?...

225 P5: says the unconscious…

226 G5D1-S9(E): that there's much more that we do not know, we don't know and maybe ...

227 P5: ... like what? that influences what?

228 G5D1-S9(E): if you have a knack for something, that already influences you ...

229 P5: in other words, you base yourself on *her* hypothesis…

230 G5D1-S9(E): no, no, I'm defending the environmental (everyone laughs)

231 P5: what are you trying to say with that unconscious business?

232 G5D1-S9(E): I think that you have difficulty with something, and then that thing, whether you want to or not, unconsciously, since it is hard for you, this is where the unconscious comes in, and the unconscious is a very important part of the brain that we don't know how it works and how it doesn't work, and that maybe it has something to do with these changes, no?

233 G5D1-S11(H): XXX

234 G5D1-S5(H): I think that you who are defending the environmental position are trying to show that the environment has more influence in overcoming a learning disability, not that it determines intelligence, that's what I think now that you are partly admitting that there is a hereditary part.

235 G5D1-S8(E): This was already said the first day... there is an environmental part and a hereditary part. I think that we agree on this, and our positions have come closer through the debate.

Marginal annotations:
Argument (A)
AS 14: A-C(PA)-R(C)
Counterargument_Partial Agreement (C(PA))
Rebuttal-Conciliatory (R(C))
Uncoded. Control of the activity. Social relations
AS 16: A-C(CF)-R(C)
Argument (E)
(C(CF))
(R(C))
Interaction pattern of conciliatory discourse

Figure 1. *Example of category analysis of arguments, counterarguments and rebuttals that make up an interaction pattern of integrated discourse, according to the Atlas.ti program.*

Finally, the discourse content was categorized into topical units. The topical units of the first debate were *points of view about the origin of intelligence* and *the causes of learning disabilities.* For the second debate, the established topical units were *points of view about special education, points of view about mainstream school, attention to diversity* and *case resolution.* This final topical unit refers to students' statements that presented strategies to be fol-

lowed for case resolution, in other words, how and why the child should be schooled in a special education school, or why and how his educational needs would be better addressed from a mainstream school.

Once the investigators had discussed and agreed on the dimensions and categories, all the data were analyzed by three duly trained researchers who were experts in argumentation. Agreement was at 80%. Applying Cohen's Kappa agreement index, the coefficient ranged from .80 to 1.00 depending on the dimensions of analysis. The few doubtful cases were discussed until a consensus was reached.

Afterward, the descriptive statistics and inferential analyses were carried out (Wilcoxon test, nonparametric test for proportion comparison) in order to compare distributions of each of the variables, between debates, according to the analysis dimensions.

Results

We have organized the results according to their connection with each of the study objectives. Accordingly, we first present the results of the structure of the argumentative discourse, the variability in students' use of counterarguments and rebuttals, and the argumentative sequences; second, we present results regarding the interaction patterns, according to the content present in each of the debates.

The argumentative structure

The results indicated that the argumentative structure was similar in both debates and for the three categories. The most frequent category was *arguments*, followed by counterarguments and rebuttals. The mean percentages of the argumentative structure did not statistically differ between debate D1 and debate D2, in any of the categories analyzed (see Table 1).

Table 1. *Average scores of arguments, counterarguments and rebuttals in D1 and D2.*

	D1		D2		Descriptive values	
	M	*SD*	*M*	*SD*	*Z*	*p*
Arguments	37.89	23.39	41.60	13.51	-.79	.43
Counterarguments	31.49	24.78	33.77	19.10	-.28	.78
Rebuttals	30.61	25.96	24.62	17.3	-.46	.65

Types of counterarguments and rebuttals

The results relating to use of counterarguments (Table 2), show that *CF-type argumentation* was the category with the highest percentage in all groups, followed by the *PA-type counterargument*, with lower percentages going to *IA*- and *QT-type* counterarguments. According to the proportion comparison analysis, significant differences were only noted in the use of *IA-type counterarguments* (Z = -2.01; p = .04), which was more present in debate D1. There were no significant differences in the remaining categories.

Table 2. *Average scores according to type of counterargument in D1 and D2.*

	D1		D2		Statistical values	
	M	*SD*	*M*	*SD*	*Z*	*p*
Partial Agreement (PA)	28.26	27.79	22	27.58	-.50	.61
Irrelevant Arguments (IA)	9.68	23.90	4.79	21.29	-2.01	.04
Changing the Focus (CF)	60.24	34.88	64.86	33.68	-.82	.40
Questioning the Thesis (QT)	1.80	5.41	8.33	14.08	-1.57	.11

As for the rebuttals (Table 3), the most frequent in both groups was *rebuttal D*. Differences between the two debates were only significant in the use of the *conciliatory rebuttal*, which was greater in debate D1 (Z = -2.67; p = .00).

Table 3. *Average scores according to type of rebuttal in debates D1 and D2*

	D1		D2		Statistical values	
	M	*SD*	*M*	*SD*	*Z*	*p*
Disparaging (D)	55.75	36.86	74.77	24.88	-1.22	.22
Local Agreement (LA)	13.86	24.63	20.53	25.48	-1.48	.13
Conciliatory (C)	25.38	32.66	4.68	12.64	-2.67	.00

Argumentative sequences

Regarding analysis of the argumentative sequences in each type of debate, 17 sequences were found, with varying distribution (Table 4). Our analysis revealed significant differences, where debate D1 showed greater use of both sequence no. 2 A*rgument followed by a Partial Agreement counterargument* (Z = -2.29; p = .001) and sequence no. 15 *Argument followed by an Irrelevant Arguments counterargument and a Conciliatory rebuttal* (Z = -2.52; p = .012). However, sequence no. 2, *Argument followed by a counterargument of the type Changing the Focus of argumentation* (Z = -3.09; p = .001) and sequence no. 9, *Argument followed by Changing the Focus counterargument and a Disparaging rebuttal* (Z = -2.63; p = .012), appeared in greater proportion in Debate D2.

Table 4. *Average scores according to type of argumentative sequence in debates D1 and D2*

	D1		D2		Statistical values	
	M	*SD*	*M*	*SD*	*Z*	*p*
1 AS: A	3.56	6.11	8.91	12.88	-1.78	.07
2 AS: A-C(PA)	18.79	28.82	.54	1.93	-3.29	.001
3 AS: A-C(IA)	.52	1.88	1.26	4.28	-.54	.58
4 AS: A-C(CF)	3.22	4.71	17.12	18.38	-3.09	.002
6 AS: A-C(PA)-R(D)	11.57	15.14	16.64	15.23	-1.75	.08
7 AS: A-C(IA)-R(D)	.37	1.25	2.32	6.93	-1.57	.11
8 AS: A-C(CF)-R(D)	30.82	28.10	24.04	16.00	-.56	.57
9 AS: A-C(QT)-R(D)	1.36	3.14	7.45	9.64	-2.63	.008
AS 10: A-C(PA)-R(LA)	2.56	6.05	5.06	10.54	-1.06	.28
AS 11: A-C(IA)-R(LA)	1.82	6.87	3.13	8.19	-.27	.78
AS 12: A-C(CF)-R(LA)	7.05	14.84	6.45	8.60	-.66	.50
AS 14: A-C(PA)-R(C)	4.82	7.58	1.86	5.09	-1.83	.06
AS 15: A-C(IA)-R(C)	3.32	6.29	.00	.00	-2.52	.012
AS 16: A-C(CF)-R(C)	9.74	14.71	5.17	9.21	-1.00	.31
AS 17: A-C(QT)-R(C)	.40	1.37	.00	.00	-1.34	.18

Next, we offer a representative example of this last argumentative sequence, significantly more frequent in debate D2, of an argument followed by a counterargument of the type *changing the focus* and a rebuttal of the *disparaging* type.

Argument:

269 G2D2-S6 (MS)[1]: And among classmates we encourage the idea that not everyone is equal, that some children can do more and some children can do less, but between us all we help each other. I think that a good mainstream school XX[2] you displace all of them and XX not XX because …

Counterargument -- *Changing the Focus of the argumentation:*

207 G2D2-S4 (SE): But going to a special education school is not excluding them

Rebuttal – *disparaging:*

271 G2D2-S6 (MS): If he could be in a mainstream school, it is.

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[1] The codes G2D2-S6 (MS) indicate: G2, group 2; D2, debate 2; S6, student 6; MS in defense of mainstream schooling. If SE appears, it means that the student defends the special education school.
[2] The appearance of XX indicates that the discourse is unintelligible, it cannot be transcribed

In this example we observe how an opponent diverted the topic of argumentation toward non-exclusion of the pupil, and afterward the same proponent disparaged the counterargumentation by affirming that it would be exclusion if indeed the child could be in a mainstream school.

By contrast, the following extract exemplifies argumentative sequence 15, more frequent in debate D1: an *argument,* followed by counterargumentation of *irrelevant arguments* and a *conciliatory rebuttal.*

Argument:

313 G5D1-S2 (H)[3]: …Yes, yes OK, but that is what you take, if you take two babies and give a ball to each one, no doubt one of them will do one thing and the other will do something else, and according to what each one does, it will have learned something different, a different lesson will be learned, because each of them sees a different possibility in a ball, and they see that because their brain is different, do you understand? ...

314 G5D1-S2 (H): … and why? because he or she has a different brain.

Counterargument --Irrelevant Arguments:

315 G5D1-S1(E): if ... you perceive, and I don't deny that this perception may have its genetic part, but based on this perception that you have, you act in a different way, but these genetics are not what determines you, genetics will determine a base, that base will evolve and grow and will follow different paths according to what you have seen and have done...

Rebuttal – *conciliatory:*

316 G5D1-S2 (H): but we do no deny that, we agree that yes, the environment can continue to shape this type of experience, that learning can progressively ...

In this example, the opponent, who defended the weight of environmental factors in the development of intelligence, qualified her arguments by taking consideration of the role played by genetic and/or hereditary factors. In the rebuttal, the proponent who initially defended hereditary factors integrated part of the opponent's statement in favor of environmental factors, showing partial agreement with the counterargument.

Interaction patterns

Regarding interaction patterns, as one observes in Table 5, results indicated that a *DD* pattern was predominant in both debates D1 and D2, followed by *PC*, and in third place, *CD*.

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[3] The codes G5D1-S2 (H) express: G5, grupo 5; D1, debate 1; S2, student 2; H in defense of hereditary factors. If an E is shown, the student defended environmental factors.

However, the differences were only significant in the use of the *CD interaction pattern*, which was greater in debate D1 ($Z = -2.43$; $p = .015$).

Table 5. Average scores of the interaction patterns for debates D1 and D2.

	D1		D2		Statistical values	
	M	*SD*	*M*	*SD*	*Z*	*p*
Disruptive Discourse (DD)	5.43	9	8.98	12.96	-1.25	.21
Alternative Discourse (AD)	46.63	28.63	49.92	19.82	-.32	.74
Partially Conciliatory (PC)	27.44	26.31	34.50	14.33	-1.47	.14
Conciliatory Discourse (CD)	20.48	18.92	6.58	10.91	-2.43	.015

Next we offer an example illustrating the interaction pattern of *conciliatory discourse (CD)* in debate D2.

Argument:

160 G5D2-S10 (MS): No, because in addition to assistance, you not only have to help the child with disabilities, you have to create an atmosphere of ... learning support teacher, so that any child who has difficulty carrying out an assignment has the support of that teacher, it shouldn't look like the child with disabilities has that teacher exclusively for him, but that the support teacher is one more element in the classroom.

Counterargument --Partial Agreement:

162 G5D2-S12 (SE): We believe that the learning support teacher would have to adjust to each child ...

Rebuttal – conciliatory:

163 G5D2-S10 (MS): Of course the learning support teacher has to be aware of the child, but if an atmosphere of learning support is created, there are two teachers per class, XXX have done it that way or they have been there exclusively for the child...

Argument:

164 G5D2-S12 (SE): XXX but if in kindergarten, where not much is being done academically, he does not progress, when he starts first grade he will be much further behind than...

Counterargument -- *Changing the Focus of the argumentation:*

165 G5D2-S10 (MS): I think he will be older and will be more mature. There are also external factors and perhaps he has had nutritional problems or other things like that that make it hard to develop...

Rebuttal -- Local Agreement:

166 G5D2-S12 (SE): For this reason in a special education school he would have specialized teachers ..., unlike in the mainstream school, he will have teachers that don't have the necessary training, suppose that he goes on to first grade, the first-grade teachers will not agree to have the child in these conditions...

In this example we observe two argumentative sequences. The first is characterized by the opponent's partial agreement with the thesis expressed by the proponent (who expresses that the support teacher ought to help any child in the class) and by a conciliatory rebuttal (implying agreement with one part of the counterargument). In the second argumentative se-

quence, the opponent expressed a thesis that changed the initial argument and shifted the argument toward the origin of the issues and the child's nutrition problems, that the proponent partially accepted in her rebuttal.

Interaction patterns as a function of the content of the debates.

When the interaction patterns were related to the topical units present in the debates (the content), we observed certain significant differences (Tables 6 and 7). In D1, when *points of view about intelligence* were being addressed, the *AD* pattern was used more than the others, while the remaining patterns were ordered as follows: *PC >DD*; *CD >DD* and *CD=PC*. For the second topical unit, *learning disabilities*, significant differences were only observed in greater use of *AD* compared to *DD* (see Table 6).

Table 6. *Significance of the paired comparison of interaction patterns by topical units in debate D1.*

	Intelligence	Learning disabilities
Disruptive (DD) -Alternative (AD)	$p < .001$	$p < .05$
Disruptive (DD) - Partially Conciliatory (PC)	$p < .01$	
Disruptive (DD) - Conciliatory (CD)	$p < .01$	
Alternative (AD) - Partially Conciliatory (PC)	$p < .05$	
Alternative (AD) - Conciliatory (CD)	$p < .001$	
Partially Conciliatory (PC) - Conciliatory (CD)		

In debate D2, when the special education school was being discussed, the interaction pattern most used was *PC discourse* followed by *AD*. By contrast, when the mainstream school was being discussed, *AD* followed by *PC* discourse was predominant. Attention to diversity is related to a greater presence of *AD* followed by *PC* discourse and less use of *CD* or *DD*. Last of all, when students discussed how to resolve the case, *PC* discourse was most frequently used (see Table 7).

Table 7. Average scores for each type of interaction pattern according to topical units in debate D2.

	Special Education		Mainstream School		Attention to Diversity		Case Resolution	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Disruptive Discourse (DD)	8.57	25.02	7.36	11.42	6.58	14.28	16.51	29.82
Alternative Discourse (AD)	40.90	40.14	44.25	40.23	68.41	31.46	25.64	29.55
Partially Conciliatory (PC)	46.62	43.55	37.31	41.46	20.99	27.90	47.83	35.86
Conciliatory Discourse (CD)	4.36	13.22	11.06	25.25	4.00	11.48	10.00	27.08

We conducted comparison of means of the proportions used in the four possible interaction patterns and the topical units in debate D2. In the topical unit *points of view about spe-*

cial education (with greater use of *PC* and *AD*), significant differences were found in the use of *PC* discourse, with respect to *DD* and *CD*; and in the use of *AD* with respect to *DD* and to *PC*. In addition, *DD* and *CD* were used equally. In the topical unit *mainstream school* (with greater use of *AD* and *PC*), *AD* was higher than *CD* and *DD;* and *PC* was greater than *DD*. In the topical unit *attention to diversity* (greater use of *AD* and less use of *CD* and *DD)*, *AD* was greater than all others and *PC* was greater than *CD* but not greater than *DD*. In *case resolution*, there was greater use of *PC*, more than *DD* or *CD* (See Table 8).

Table 8. Significance of the paired comparison of interaction patterns by topical units in debate D2.

	Special Education	Mainstream Education	Attention to Diversity	Case Resolution
Disruptive (DD) -Alternative (AD)	$p < .05$	$p < .01$		
Disruptive (DD) - Partially Conciliatory (PC)	$p < .05$	$p < .01$		$p < .05$
Disruptive (DD) - Conciliatory (CD)				
Alternative (AD) - Partially Conciliatory (PC)			$p < .01$	
Alternative (AD) - Conciliatory (CD)	$p < .01$	$p < .05$		
Partially Conciliatory (PC) - Conciliatory (CD)	$p < .01$		$p < .05$	$p < .05$

In summary, the most frequently used interaction pattern was *AD,* followed by *PC* discourse, then *CD,* and finally *DD*.

According to topical units, *AD* was generally used the most. Moreover, its use was significantly higher than all others when students spoke of their *points of view about intelligence, the causes of learning disabilities* and *attention to diversity.*

PC discourse was used the most for *case resolution*, and for discussing *special education*; it took second place when *mainstream schooling* was discussed. *CD* was the least used type of discourse in topical units on *special education*, *attention to diversity* and *case resolution*.

Generally speaking, *DD* was used the least. Its use was even lower when discussing *intelligence, special education, mainstream school* and *attention to diversity.*

Discussion and Conclusions

The aim of the the present study was to analyze the argumentative discourse, including strategies, sequences and interaction patterns, used by university students who participated in

a specific teaching-learning context consisting of two debates, each with a specific purpose (one debate for persuading or defending a point of view, and the other debate for the purpose of reaching a consensus).

In reference to the structure of argumentative discourse, results indicated that the young people in our sample had difficulty relating their arguments through the use of counter-argumentation and rebuttal, a result which concurs entirely with the results of prior studies (Correa et al., 2003; Garcia-Mila et al., 2013; Leitão, 2000, 2009; Litosseliti et al., 2005; Nussbaum & Sinatra, 2003; Schwarz et al., 2003 and Veerman et al., 2002).

While the participants in both debates used the same argumentative structive, a more detailed analysis of the argumentative sequences brought to light certain differences: when trying to persuade and defend their own point of view (debate D1), they used more counterar-guments of the type *irrelevant arguments,* and more *conciliatory* rebuttals, in which students reached partial agreement with their interlocutors; but when trying to reach agreement by consensus (debate D2), the more frequent strategies were those of *changing the focus of the argumentation* and *disparaging* the opponent. This result seems surprising to say the least, given that these strategies are plainly inadequate for reaching agreements, something that again can only be explained by the students' lack of knowledge of strategies based on modeling and concession, strategies that would allow them to reduce their discrepancy and reach formulas for agreement (Cros & Vilà, 2002).

It seems that the participants in our study acted in a polarized manner, to use the words of Leitão (2000); they moved between two extremes, either disparaging or partially integrating their opponent's arguments, but without a general adaptation or adjustment in their manner of argument to the communicative purpose of the two teaching-learning situations (Felton et al., 2009; Felton et al., 2015). However, they acted strategically (Monereo & Castelló, 1997) by adjusting their argumentative strategies to the task requirement and the situational context as it related to the topical content that they were debating. For example, in debate D2 we observed how their strategies changed to a more conciliatory interaction pattern in statements where they discussed strategies to use and how to go about reaching an agreement on the case resolution. This also occurred in discourse fragments where they make explicit their conceptions about special education school.

Interaction patterns were modified as a function of the content being debated. Thus, in debate D2, when *case resolution* was being addressed, or points of view about *special education school*, there was greater use of *partially conciliatory* discourse (when the argumentative sequence clearly showed an intention to integrate part of the opponent's discourse, the proponent also showed an intention to reach local agreement, thereby indicating the relationship between conciliatory discourse and the possibility of establishing agreements). However, when arguing about *mainstream school* or *attention to diversity strategies,* the interaction pattern was characterized by *alternative discourse.* Hence, interaction patterns and argumentative sequences indicated patterns of reciprocity, that is, according to the type of counterargument used by the opponent, the proponent used a certain type of rebuttal. One possible explanation for this change has to do with the influence of cognitive biases, or beliefs and conceptions about the topics being debated, on the discussion strategies and patterns; such relationships have been addressed by authors like Correa et al. (2003); Kuhn et al. (2013); Mateos et al. (2011); Pozo and Rodrigo (2001); Rapanta et al. (2013) and Villarroel et al (2019).

In general terms, these students' argumentative discourse can be equated to notions of accumulative discourse (Mercer, 2004), given that the discourse was characterized by repetitions, confirmations and simple elaborations. This points to the need to not only include argumentative competencies in university curricula, but to teach these competencies in contexts where their use is functional and meaningful, and contributes to knowledge construction, something of unquestionable interest to us as teachers (Cano & Castelló, 2016; Garcia-Mila et al., 2013; Gilabert et al., 2013; Engel & Onrubia, 2013, Rapanta, 2019).

The data presented here revealed that our university students did not use either the structure or the strategies associated with academic or expert argumentation. Their argumentation was much more typical of daily contexts, characterized by chains of isolated arguments, based on a single point of view, giving excessive value to examples and individual cases, and repeating the same argument numerous times, using the fallacy of *argumentum ad nauseam* (Cano & Castelló, 2011; Garcia-Mila et al., 2013; Gilabert et al., 2013; Leitão, 2012; Pérez & Bautista, 2009).

Before concluding we must mention the limitations of our study. The fact that the debates were situated in a real teaching-learning context did not allow us to select the participants according to any preestablished criteria. This is especially important if we take into ac-

count the relationship between beliefs and argumentation, which was visible in the content of certain arguments and in both debates. However, given that our analysis focused on the adjustments made according to the demands of the activity, and how argumentative strategies and interaction patterns changed in two debate situations with different purposes, it was not necessary to differentiate among students based on their beliefs --although we did maintain the condition that students be assigned to a role and defense of a thesis that matched their initial opinions about the topics or dilemmas they were to defend.

On the other hand, by keeping the original class group and incorporating the debates into the usual seminar activities, the debates were functional and meaningful, at least as much as the other teaching-learning activities that are carried out in small-group, academic contexts (like seminars), where transversal competencies are being pursued (Riera, Giné & Castelló, 2003). It must be acknowledged that our objective was not the teaching of argumentative strategies, rather, the debates were used to facilitate reflection about the content and construction of knowledge with the advantages of debates as a methodological strategy of teaching and learning. In later studies it would be valuable to verify whether these strategies vary according to specific teaching situations and according to certain specific variables, whether personal or contextual. At this time, we hope that the data contributed here increases our knowledge about the argumentative competencies of university students in Spain and promotes reflection about the need to teach these competencies as part of academic literacy.

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