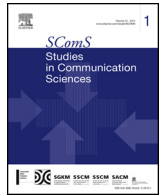




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The argument from expert opinion as other-oriented reference in disciplinary discussions

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ABSTRACT

This paper aims to investigate the types of source on which students base the arguments from expert opinion when used to convince their teacher and classmates to accept their standpoint during disciplinary discussions. Using the model of a critical discussion integrated with the Argumentum Model of Topics as analytical approach, a corpus of 66 arguments from expert opinion were analyzed. The results show that students in most cases refer to scholars and their scientific notions and theories as source of expertise (other-oriented argument). Less frequently, students refer to themselves and their previous personal experience as source of expertise (self-oriented argument).

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1. Introduction

In the learning contexts, argumentation is not a heated exchange between rivals that results in winners and losers, or an effort to reach a mutually beneficial compromise; rather it is a form of “logical discourse whose goal is to tease out the relationship between ideas and evidence” (Duschl, Schweingruber, & Shouse, 2007: 33). Argumentation enables students to engage in knowledge construction, shifting the focus from rote memorization of notions and theories to a complex scientific practice in which they construct and justify knowledge claims (Kelly & Chen, 1999; Sandoval & Reiser, 2004). Notwithstanding, current research indicates that learning how to engage in productive scientific argumentation to propose and justify an explanation through argument is difficult for students. Thus, empirical research that examines how students generate arguments has become an area of major concern for scholars interested in argumentation and education.

The present study intends to provide a further contribution to the line of research on student-generated arguments. In line with other scholars (Newton, Driver, & Osborne, 1999; Osborne, 2005; Sampson & Clark, 2008; Stein & Albro, 2001), in this study the term “argument” refers to the artifacts that a student creates to articulate

and justify his/her standpoint, whereas the term “argumentation” refers to the process of constructing these artifacts. This study specifically focuses on the learning context of higher education and sets out to investigate the arguments from expert opinion used by graduate students in Developmental Psychology during the disciplinary discussions with their teacher and with their classmates, i.e., task-related discussions concerning the discipline taught in the course. We will refer to the definition of argument from expert opinion as the notion of epistemic authority elaborated by Walton (1997), namely, a relationship between two individuals where one is an expert in a field of knowledge and accordingly his/her opinion, when stated within an argumentative discussion, is essentially an appeal to expertise.

It is not a goal of the present study to make an assessment of the argument from expert opinion advanced by students, i.e. deciding whether or not a certain argument is fallacious.¹ Rather, our purpose is to answer the following question: “What type of source do students base on the arguments from expert opinion used during disciplinary discussions in the classroom?” This research question will be answered by means of a small-scale corpus study, in order to provide a “data-close” analysis of the argumentative dynamics in the classroom. In this endeavor, we have opted for an idiographic methodology based on the contemporary argumentation theory.

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¹ Walton (1997) proposes an argument scheme and associated critical questions in order to assess whether or not a certain argument from authority (appeal to authority in Walton’s terms) is fallacious.

The object of investigation will be the argumentative discussions between students and teacher, as well as among students, occurring during their ordinary lessons, rather than an ad hoc setting created to favor the beginning of argumentative discussions. The analytical approach for the analysis of the argumentative discussions relies on the pragma-dialectical model of a critical discussion (van Eemeren & Grootendorst, 2004), integrated with the Argumentum Model of Topics (AMT) (Rigotti & Greco Morasso, 2010).

In the first part of the paper, we will review the most relevant studies focusing on argumentation in learning contexts of higher education. Afterwards, the data corpus of the research and the analytical approach adopted for the analyses will be presented, thus providing the methodological and conceptual frame on which the present study is based. Two exemplary argumentative sequences that bring to light the results obtained through the observation of a larger corpus of data will be presented and analyzed. A final discussion will open a space for implications and concluding remarks about the use of arguments from expert opinion in the learning context considered for the present study.

2. Argumentation studies in learning contexts of higher education

Over the last two decades, the attention of several educationists and psychologists has been more and more dedicated to investigating the conditions which can favor or disfavor the creation of effective argumentative activities at a primary and middle school level (Baker, 2002; Duschl & Osborne, 2002; Jackson, 2002; Jiménez-Aleixandre, 2007; Nestlog, 2009; Sadler, 2006), to establish which criteria must be included in assessing the argumentative skills of pupils and students (Anderson, Chinn, Chang, Waggoner, & Yi, 1997; Muller Mirza, Perret-Clermont, Tartas, & Iannaccone, 2009; Pontecorvo & Girardet, 1993), and how to further improve these skills (Dolz, 1996; Kuhn & Udell, 2003; Nussbaum & Schraw, 2007; Osborne, Erduran, & Simon, 2004; Zohar & Nemet, 2002).

Despite fewer in number, the studies focusing on the argumentative practices in higher education too have brought to light relevant insights in the fields of education and argumentation theory. In particular, two main lines of research need to be distinguished within these studies. The first line of research aims to single out the cognitive skills that can be improved through argumentative practices in the classroom. Overall, the results of these studies indicate that favoring argument debates in the classroom can enhance students' motivation and engagement (Bova, 2015a; Chin & Osborne, 2010; Hatano & Inagaki, 2003), and help them detect and resolve errors (Schwarz, Neuman, & Biezuner, 2000). A series of other studies have also shown that engagement in constructing arguments enhances students' knowledge by promoting conceptual change (e.g., Bova, 2015b; Nussbaum & Sinatra, 2003; Wiley & Voss, 1999), and that the engagement in argumentative small- or large-group discussions improves conceptual understanding (Alexopoulou & Driver, 1996; Andrews, 2009; Mason, 1996, 2001).

The second line of research aims at investigating students' argumentative skills, and how such skills can favor or disfavor the learning process. In this respect, the role of argumentation in the academic context is currently stressed by a growing literature that emphasizes how students rarely use criteria that are consistent with the standards of the scientific community to determine which ideas to accept, reject, or modify. For example, the works of Hogan and Maglienti (2001) and Linn and Eylon (2006) suggest that students often rely on inappropriate criteria such as the teacher's authority or consistency with their personal beliefs to evaluate the merits of a scientific explanation. These researches suggest that students rarely use criteria based on theories and scientific models.

Other research suggests that students often do not use sufficient evidence (Sandoval & Millwood, 2005) or struggle to understand what counts as evidence (Sadler, 2004). Moreover, McNeill and Krajcik (2009) found that if students are confronted with large amounts of data, they often encounter difficulties differentiating between what is relevant and what is irrelevant.

Within the research strand on students' argumentative skills, a series of studies devoted attention to the problem of constructing students' knowledge, taking into account their previous beliefs (Arcidiacono & Bova, 2015; Bova, 2015c; Jiménez-Aleixandre, Rodriguez, & Duschl, 2000; Kelly & Takao, 2002; Macagno & Konstantinidou, 2013; Sampson & Clark, 2008). For instance, Alexander, Kulikowich, and Schulze (1994) have shown that previous knowledge in the domain is a significant predictor of comprehension of the arguments advanced in support of a scientific theory. In a case study analysis of argumentative discourse among high school science students, von Aufschnaiter, Osborne, Erduran, and Simon (2008) suggest that the quality of argumentation itself is mediated by students' prior knowledge and familiarity with the content. Thus, high-level argument requires high-level knowledge of the content. According to the authors, students can engage effectively in argumentation only on content and levels of abstraction that are familiar to them. In the same vein, Sadler and Zeidler (2005) investigated the significance of prior knowledge of genetics for the argumentation of 15 undergraduate students on six cloning scenarios. The findings of this study indicated that students with more advanced genetics understanding demonstrated fewer instances of reasoning flaws, such as lack of coherence and contradiction of reasoning within and between scenarios, and were more likely to incorporate content knowledge in their argumentation than students with more a naïve understanding of genetics.

Taken together, despite differences in methodology and interpretation, the studies on the argumentative skills of students in the learning contexts of higher education show to what extent students are able to understand and generate an argument, and to construct justifications in defense of an opinion. However, the results of these studies have also indicated that students often do not base their decisions to accept or reject an idea on available evidence and appropriate reasoning. Rather, they tend to use inappropriate reasoning strategies to warrant one particular view over another and distort, trivialize, or ignore evidence in an effort to reaffirm their own ideas. The present study, which sets out to investigate the types of source on which graduate students in Developmental Psychology base the arguments from expert opinion when used to convince their teacher and classmates to accept their standpoint during disciplinary discussions in the classroom, i.e., task-related discussions concerning the discipline taught in the course, intends to provide an innovative contribution in this field of works related to student-generated arguments in the learning contexts of higher education.

3. Methodology

3.1. Data corpus

The data corpus is composed of sixteen video-recorded separate lessons (constituting about 24 h of video data) of the Master's degree program Development and Socialization in Childhood and Adolescence at the Utrecht University (The Netherlands). The length of each recording varies from 84 to 98 min. The corpus is constituted by 16 students, who were all girls. Most of the students at the time of data collection were in their early 20s ($M=23.00$; $SD=1.60$). As for the student's nationality, the corpus was in large part composed from Dutch students ($N=12$), and from only 4

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