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Evaluating the impact of competitive debate on participants' personal epistemologies: Addressing historical and pedagogical concerns

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Abstract

This study investigates the impact of competitive debate participation on personal epistemologies, contrasting long-standing critiques associating debate with relativism and superficiality. Employing a quantitative, experimental design and a validated epistemological questionnaire, the research analyzed responses from 180 secondary students, divided into experimental and control groups. The findings revealed no significant differences in relativism or superficiality between the groups, challenging historical critiques, suggesting that debate does not promote relativistic or oversimplified thinking. These results emphasize debate's pedagogical value, highlighting its potential for cultivating reflective and ethical citizenship while offering new avenues for research in epistemic development.

Il presente studio indaga la ricaduta della partecipazione al dibattito regolamentato sulle epistemologie personali, mettendo a confronto le consolidate critiche che associano tale pratica al relativismo e alla superficialità. Attraverso un disegno di ricerca quantitativo e sperimentale e mediante l'impiego di un questionario epistemologico validato, sono state analizzate le risposte di 180 studenti della scuola secondaria di secondo grado, suddivisi in gruppo sperimentale e di controllo. I risultati non hanno evidenziato differenze significative in termini di relativismo o superficialità tra i due gruppi, mettendo in discussione le critiche storiche e suggerendo che il dibattito non favorisce epistemologie personali relativistiche o semplificate. Tali evidenze sottolineano il valore pedagogico del dibattito, evidenziandone il potenziale nel promuovere una cittadinanza riflessiva ed etica, oltre a offrire nuove prospettive di ricerca sullo sviluppo epistemico.

Keywords: competitive debate; personal epistemology; critical thinking; relativism; superficiality

Parole chiave: dibattito regolamentato; epistemologie personali; pensiero critico; relativismo; superficialità

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1. Introduction

Competitive debate is both a pedagogical method and an agonistic activity in which teams support and defend opposing propositions with arguments before a panel of judges (Trapp et al., 2005; Snider, 2008; Branham, 2013; De Conti & Giangrande, 2017). Competitive debate is widely recognized for fostering critical thinking, communication skills, social competencies, and academic success. Over the past few decades, research on debate has shifted its focus from technical abilities (Allen et al., 1999) to broader objectives, such as the development of social and civic skills (Rogers et al., 2017), reducing dropout rates (Mezuk et al., 2011; Ko & Mezuk, 2021), language learning (Cinganotto, 2021; Waluyo & Abrar, 2024) and even evaluating learning (Refrigeri & Russo, 2023), particularly in addressing the misuse and overuse of AI.

However, despite its many advantages, concerns about the impact of competitive debating on participants' attitudes toward knowledge have been raised in historical, philosophical, and pedagogical literature. Among the primary concerns was whether debate fosters relativism — the belief that no absolute truths exist — and superficiality in engaging with complex topics. These critiques date back to ancient Greece, where practices like the antilogies and *dissòi lógoi* were criticized for fostering relativism (Molinelli, 2024). But also Aristophanes, in his comedy *The Clouds* (Aristophanes, 2006/423 BCE), portrays Unjust Speech prevailing over Just Speech, suggesting that sophistic teaching aims not at truth but at deception and the relativity of values. Similarly, Plato in the *Phaedo* (1977) criticizes the art of rhetoric, asserting that its practitioners ultimately believe there is nothing stable or secure, as all matters are in constant flux (90c). Likewise, the *disputatio*, widely used in the Middle Ages for educational and theological purposes, was subject to similar critiques. Italian Renaissance humanists viewed it as an outdated relic, pedantic and pointless, an image that also spread in the Anglophone world (Novikoff, 2012) and the Spanish humanist Juan Luis Vives argued that enthusiasts of disputation tended to avoid in-depth analysis of issues, addressing them instead with superficiality and haste (Giangrande, 2021). In his *Essay Concerning Human Understanding* (1690/2004), John Locke criticizes this practice as more confusing than clarifying. In a similar manner, in Ludvig Holberg's novel *Journey to the World Under Ground: Being the Subterraneous Travels of Niels Klim* (1741/1828), disputes are accused of obscuring truth.

Current criticisms of the pedagogical effects of debate remain prevalent and echo these historical concerns. In an early analysis, Richard Murphy (1957) highlighted the risk that defending positions not personally held may inhibit a comprehensive evaluation of evidence and arguments. Similarly, Tannen (1999) and Tumposky (2004) argue that competitive debate's tendency to dichotomize complex issues fosters oversimplification. From the perspective of the relativist critique, Nebel et al. (2013) suggest that debate may indeed promote moral relativism. Additionally, there is no shortage of educators who argue that competitive debate fosters a 'relativist pathology', a concern also raised in the Italian context—sometimes expressed as a fear, other times as an established truth (cf. Tedoldi, 2022; Rigotti, 2024). This critique highlights a perceived shift in judgment, potentially leading to the normalization of even extreme topics such as torture, slavery, or cannibalism.

Thus, considering the points discussed so far, this research aims to empirically examine the validity of the accusations of relativism and superficiality that have historically been frequently directed at the practice of debate. To this end, the following null hypotheses are posited:

H01) Participating in competitive debates does not contribute to relativism.

H02) Participating in competitive debates does not contribute to superficiality.

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2. The theoretical framework of personal epistemologies

Relativism and superficiality can be understood as dispositions toward knowledge and, as such, have been associated with the concept of "personal epistemologies". Personal epistemologies refer to the beliefs and theories individuals hold regarding the nature of knowledge and the processes by which it is acquired. This construct, often known as epistemological beliefs, encompasses socially shared views on knowledge organization, sources of knowledge, truth value of information, criteria for justification, and methods of acquiring understanding (Hofer & Pintrich, 2002). Such beliefs are embedded in everyday life and play a critical role in shaping cognitive processes like thinking, reasoning, learning, and decision-making (Hofer & Pintrich, 1997). In other words, personal epistemologies influence how individuals approach and evaluate knowledge, impacting both their cognitive and affective engagement in various contexts (Schommer-Aikins & Duell, 2013).

The concept of "personal epistemologies" has evolved significantly, initially influenced by Piaget's (1950) introduction of "genetic epistemology," which described his theory of intellectual development. This approach marked the beginning of developmental psychology's exploration into the intersection of philosophy and psychology. In a similar vein, Perry (1970) developed a stage-based model, where students progress from a dualistic understanding of knowledge toward more evaluative levels of epistemological comprehension. This developmental framework aligns with the theories of moral judgment and development by Kohlberg (1969, 1971) and Gilligan (1982), linking cognitive and moral growth as interconnected processes. Through these contributions, the understanding of personal epistemologies has expanded, illustrating a complex and evolving process influenced by both cognitive and moral developmental stages.

Moreover, personal epistemologies, or beliefs about knowledge and knowing, are closely linked to a range of competencies, skills, and dispositions that significantly impact educational outcomes and cognitive processes. Research suggests that these beliefs are organized into multiple dimensions, typically encompassing five (Schommer-Aikins, 1994) or four main dimensions consistently observed in the literature (Hofer & Pintrich, 1997). These epistemological beliefs have demonstrated influence on comprehension, study strategies, and academic performance (Schommer-Aikins et al., 1992; Schommer-Aikins, 1993; Garrett-Ingram, 1997; Lonka et al., 2021). Epistemological beliefs shape how individuals interpret and engage with their educational experiences and relations with others and the world (Perry, 1970, 1981; Belenky et al., 1986; Baxter Magolda, 1987) and influence key thinking and reasoning processes, especially reflective judgment (Kitchener & King, 1981; Kitchener et al., 1989; Kitchener et al., 1993; King & Kitchener, 1994) and skills of argumentation (Kuhn, 1991, 2005). For instance, epistemological beliefs have been associated with students' text comprehension (Schommer-Aikins, 1993; Kardash & Scholes, 1996), cognitive engagement and achievement goals (Ravindran et al., 2005), search strategies in digital environments (Whitmire, 2004), and study strategies and communication styles (Schommer-Aikins & Easter, 2008).

Numerous scholars have contributed to the classification and understanding of personal epistemologies, as well as the complex transitions that move individuals from lower to higher stages. According to Perry (1970), personal epistemology evolves through a series of stages, beginning with dogmatism and dualism, where knowledge is perceived as absolute and externally validated, progressing through relativism, where knowledge is contextual and subject to evaluation, and finally reaching constructivism, where beliefs are critically constructed and integrated into a coherent worldview. The notion of relativism frequently emerges as an intermediate stage in this progression. In contrast to dogmatism, where knowledge is perceived as absolute and externally validated, relativism acknowledges the coexistence of multiple perspectives. However, this stage often entails the risk of superficiality, as individuals may struggle to critically evaluate differing viewpoints and may instead adopt the notion

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that all perspectives are equally valid (Kitchener & King, 1981; Baxter Magolda, 1987, 2001; Kitchener et al., 1989, 1993). Kuhn (1991, 1993, 2005) characterizes this stage as necessary yet insufficient for advanced epistemological development, emphasizing that true sophistication requires the ability to critically assess competing claims and construct well-justified, context-sensitive understandings.

Despite the importance of personal epistemologies for individual development, and although personal epistemologies and competitive debate are linked to the same attitudes and skills – such as critical thinking, learning, self-regulation, and ethical and civic development (Allen et al., 1999; Rogers et al., 2017; Mezuk et al., 2011; Ko & Mezuk, 2021) – the literature on the relationship between personal epistemologies and debate is absent, and where available, it consists primarily of anecdotal literature or secondary or indirect evidence (e.g., Schwartzman, 2001; Harrigan, 2008a, 2008b; Cattani & Mastroianni, 2021). Indeed, only one result can be identified that directly relates personal epistemologies, or epistemological beliefs, to debate (De Conti, 2023). This research, however, is purely theoretical; it acknowledges the absence of relevant literature and concludes that, although anecdotal evidence leans towards the thesis that competitive debate does not promote relativism, even if it did, it would still be preferable to the promotion of dogmatism or dualism tendencies that are increasingly widespread in Western societies, as polarization shows.

A broader body of literature superficially addresses the connection between debate and the construct of "ways of knowing", in which "ways of knowing" is considered a manifestation of personal epistemology. The study of the relationship between the construct of "personal epistemology" and "ways of knowing" has been present in psychological and educational literature since at least 1986, with the publication of the pioneering work by Belenky, Clinchy, Goldberger and Tarule (1986), *Women's Ways of Knowing: The development of self, voice, and mind*, which explores women's epistemic beliefs by identifying different ways of knowing based on subjective experiences. In the debate literature, "ways of knowing" is understood as an approach to knowledge and learning. Sometimes, debate is recognized as an effective method for fostering a more comprehensive understanding and learning of phenomena because it allows for the adoption of diverse interpretative approaches, such as historical, cultural, or scientific perspectives (Nur'Aeni & Bakri, 2022). Debate exposes participants to various viewpoints, facilitating the recalibration of social opinions (Endres, 2002; Mitchell, 1998; Aclan et al., 2016), promotes a transdisciplinary approach (Bailey, 2020), and meets the diverse learning styles of Millennials, who require instructional methods beyond traditional lectures (Sellnow & Seekins, 1992; Eckstein & Bartanen, 2015). In all these bibliographic references, explicit mention is made of "ways of knowing." Nonetheless, beyond being merely a manifestation of personal epistemology – and therefore logically and pedagogically subordinate to personal epistemologies – empirical investigations are found in only three cases. Unfortunately, in these cases, the hypotheses neither explicitly nor directly take into account personal epistemologies or ways of knowing, confirming the specific relevance of the present research proposed.

Interesting inquiries on personal epistemologies have been conducted by Deanna Kuhn (1991, 1993, 2005) and related authors (e.g., Weinstock, 2006; Nussbaum et al., 2008; Klopp & Stark, 2022). However, while these findings are insightful regarding the relationship between personal epistemologies and argumentative ability, they do not directly support the conclusion that competitive debate does not promote relativistic or superficial epistemologies among its practitioners. Therefore, given the significance of the construct of personal epistemologies for individual development and formation – both personal and social – and considering the scarcity of empirical investigations in this direction, the present research is further justified.

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3. Methodology

To inquire the personal epistemologies of participating in competitive debate activities, the research conducted, exploratory in nature, employed a quantitative methodology with an experimental design, featuring a post-intervention assessment, an equivalent control group, and a structured, self-administered questionnaire with closed-ended questions.

Quantitative methods in research on personal epistemologies encompass several key challenges. For instance, Muis et al. (2006) note that tracking this developmental process is inherently complex, with Likert-scale measurements, and questionnaires often proving insufficient to capture the nuanced evolution of personal epistemological understanding. Instead, qualitative methods have been more effective in revealing the intricacies and individualized nature of personal epistemologies (Hofer & Pintrich, 1997; Muis et al., 2006). Moreover, quantitative studies predominantly utilize questionnaires, with only a few incorporating close-ended items, while qualitative approaches have been more common in examining practical epistemologies (Lee et al., 2021). However, recent methodological advances emphasize quantitative methodological progress, including the application of confirmatory factor analysis to establish the structural validity of distinct epistemic profiles – such as Pragmatic, Reflective-Collaborative, and Fact-Oriented (e.g., Lonka et al., 2021) – demonstrating that quantitative analysis can also be reliable.

The questionnaire adopted, named *How I know* (*Come Conosco*) is characterized by an interpretable and consistent structure and is sensitive to educational levels, thus able to measure beliefs that evolve along axes ranging from more simplistic and objectivist conceptions to constructivist ones, from middle school to university (Paonessa & Antonietti, 2006). *Come Conosco* assesses epistemological beliefs in a contextualized manner, meaning in relation to a specific topic on which the respondent is asked to reflect. The type of reflexivity required pertains to research and knowledge management procedures. The questionnaire consists of 19 items, presented as brief statements to which participants respond either by choosing among multiple options or using a five-point Likert scale. The statements probe how students would gather information if they were asked to write on a current topic as part of a competition. In this specific case, the topic was global temperature rise.

The *Come Conosco* questionnaire enables the identification of the presence or absence of six types of epistemological stances: (Factor 1) *skepticism*, which reflects distrust in the possibility of reaching the truth, not because truth does not exist, but due to the perceived unreliability of experts; (Factor 2) *dynamic relativism*, the belief that knowledge is neither unique nor absolute but constantly evolving, allowing for different perspectives on the same topic; (Factor 3) *anarchic relativism*, which posits that beyond the boundaries set by authority, there exist areas without definitive answers, where individuals may have personal opinions from different viewpoints; (Factor 4) *simplism*, a superficial approach to information acquisition based on the belief that all viewpoints are equally valid, truth is unproblematic, and different interpretations generate confusion; (Factor 5) *dogmatism*, which holds that knowledge is absolute and that there are correct, certain answers to all questions as provided by authorities; and (Factor 6) *scrupulousness*, the stance that forming an opinion on a topic requires thorough information gathering to minimize errors. The significant correlation between some *Come Conosco* scores and those on the *Epistemological Questionnaire* developed by Marlene Schommer -Aikins (1990) further supports the validity of this tool, even though it is not entirely interchangeable with the latter.

The decision to adopt a quantitative approach was primarily influenced by the possibility of employing a questionnaire (*Come Conosco*), a validated tool designed to assess individuals' beliefs about knowledge in Italian. Indeed, the use of a validated questionnaire in the participants' native language enhances question comprehension, reducing the risk of misinterpretation and thereby increasing response validity (Van de Vijver & Leung,

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2021). On the contrary, the use of a qualitative approach was deemed unsuitable due to the adoption of narrowly defined hypotheses for this investigation. Although a qualitative approach is generally more suitable for exploring and understanding a phenomenon, it is less appropriate for testing hypotheses. The result would either involve theoretically orienting the questions toward specific theses, making such a questionnaire resemble a structured quantitative survey with nominal variables, or producing an excessive amount of data that would exceed the specific scope of the research conducted (Maxwell, 2012; Creswell & Creswell, 2017). Moreover, the decision to conduct a post-intervention test with an equivalent control group – comprising individuals with more than one year of continuous debate experience and those with no prior debate activity – provided an adequate design for testing the hypothesis. Within this framework, a pre- and post-intervention assessment was deemed inappropriate, as the purpose of this research was not to measure the magnitude of change resulting from debate practice but rather to determine if there was a statistically significant difference relative to the control group. Shadish, Cook, and Campbell (2002) explain that post-test-only designs can be appropriate when the primary objective is to detect between-group differences rather than within-group change; in this case, the goal was to test whether participation in debate activities is sufficient to foster a relativistic or superficial personal epistemology.

The study was conducted on a convenience sample of 180 students from seven secondary education institutions located in the Italian regions of Abruzzo, Basilicata, Campania, Emilia Romagna, Friuli Venezia Giulia, Liguria, and Tuscany. The participants' ages ranged from 14 to 20 years, with 80% falling within the 16-18 age range. The sample displayed a substantial female representation, comprising 72% of the participants, with 89% attending *licei* (academic high schools) and 11% attending technical institutes. The experimental group, consisting of individuals with competitive debate experience gained in national competitions, included 101 participants (56% of the total), while the control group comprised 79 participants. Within the experimental group, 91% had one to two years of competitive debate experience, and 57% had participated in three or more debates during the academic year of the present study. The following contingency table represents the distribution of gender, age, and experience in competitive debate within the experimental and control groups (Table 1).

Table 1

Distribution of gender, age, and competitive debate experience by group

Contingency table	**Gender**			**Age**								**Experience**					
	F	M	Total	14	15	16	17	18	19	20	Total	0	1	2	3	4+	Total
Experimental group	65	36	101	2	4	13	48	30	4	0	101	0	53	39	6	3	101
Control group	65	14	79	6	11	7	24	22	8	1	79	79	0	0	0	0	79
			180								180						180

The *Come Conosco* questionnaire was administered online. Teachers in charge of the respective student groups were asked to have participants complete the questionnaire in a supervised computer lab. If this was logistically challenging, teachers could instead provide students with a link to complete the questionnaire independently. Data collection occurred via the *SurveyMonkey* platform, which ensured data handling in compliance with the EU GDPR (2016/679). In accordance with Italian regulations and ethical guidelines for scientific research, the study commenced only after informed consent documents for the use of personal data for research purposes were properly signed.

Data processing and analysis were conducted solely by the principal investigator, who was authorized by the signed consent forms to handle the data. Participants were informed that the statistical and/or scientific results

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(e.g., through scientific publications, data banks, conference presentations, etc.) would be disseminated exclusively in anonymous and/or aggregated formats that prevent participant identification. In Italy, ethical approval from a review board (equivalent to the Institutional Review Board, IRB, in the United States) is mandatory for scientific research involving human subjects for experiments with potential impact on participants are involved. Unlike the centralized IRB system in the U.S., ethical review in Italy is typically managed by institutional or regional ethics committees, such as those within universities, hospitals, or research institutions. However, ethical approval is required only in cases of clinical or medical studies, research with sensitive data and experiments with potential physical or psychological risks to participants. This was not the case for the present research, as it did not pose any health risks to participants and involved only personal data, not sensitive data.
The software used for data analysis was SPSS IBM Statistics 23. SPSS (Statistical Package for the Social Sciences) is a widely adopted tool in academic research, recognized for its ability to manage and analyze large datasets through a user-friendly interface. SPSS supports a broad range of statistical tests, including descriptive analysis, multivariate regression, and factor analysis, making it especially suitable for research in social sciences, education, psychology, and medicine. A key strength of SPSS is its accessibility to users with limited programming knowledge, owing to its intuitive graphical interface and drag-and-drop functionality, which makes it well-suited to a broad range of academic users.

4. Results

The data analysis was conducted to assess the homogeneity between the experimental and control groups across several key variables. Homogeneity was evaluated using the chi-square test for the variables "gender" and "institutional affiliation" and Levene's test for equality of variances concerning the variable "age." The chi-square test is a statistical method used to assess the association or independence between categorical variables in a contingency table; Levene's test is a statistical procedure used to assess the equality of variances across groups for scalar variables, ensuring the assumption of homogeneity in parametric analyses. The results indicate that the two groups were homogeneous in terms of age and institutional affiliation, as Levene's test yielded non-significant results ($p > 0.05$). However, a different pattern emerged for the "gender" variable. The chi-square test revealed a significant difference between the experimental and control groups in gender distribution ($p < 0.05$), indicating a substantial heterogeneity in this dimension.
Before conducting sample tests, a factor analysis was performed to explore the underlying structure of the multidimensional test *Come Conosco*. Cronbach's alpha was applied to assess the reliability of the questionnaire's various dimensions considering both the recoding of reverse-direction items and the exclusion of specific items. Cronbach's alpha is a statistical measure used to assess the internal reliability of a measurement instrument, such as a questionnaire or a psychometric scale. Specifically, it evaluates the degree of consistency among the items (questions or statements) that constitute a given scale. Among the analyzed dimensions, the results show that "dogmatism" exhibited an acceptable reliability level ($\alpha = 0.676$), followed by "dynamic relativism" ($\alpha = 0.628$), "anarchic relativism" ($\alpha = 0.633$), "skepticism" ($\alpha = 0.715$), and "simplism" ($\alpha = 0.649$). However, the "scrupulosity" dimension demonstrated significantly low reliability ($\alpha = 0.334$), suggesting internal issues in the consistency of individual responses for this dimension. These findings underscore the need for further investigations and reflections on the conceptual and operational nature of the "scrupulosity" dimension within the adopted questionnaire.

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To evaluate whether the experimental sample and control group exhibited statistically significant differences on the three key factors identified as representative of the epistemic attitudes under study – namely "anarchic relativism," "dynamic relativism," and "simplism" since "scrupulosity" did not yield a reliable value – an independent samples t-test was conducted. Specifically, the independent samples t-test is a statistical procedure used to compare the means of two groups for scalar variables, assuming homogeneity of variances and independence of observations. The results of the t-test revealed no significant differences between the two groups for any of the factors considered ("anarchic relativism": $\alpha = 0.227$; "dynamic relativism": $\alpha = 0.630$; "simplism": $\alpha = 0.991$). Consequently, there is insufficient evidence to reject the null hypothesis, indicating no statistically significant differences between the experimental sample and the control group with respect to these epistemic attitudes.
Although this was not the primary objective of the present study, the inclusion of additional dimensions in the *Come Conosco* questionnaire enabled an analysis of whether the two groups differed significantly on the factors "skepticism," and "dogmatism." Here, too, no significant differences were found (skepticism: $\alpha = 0.396$; dogmatism: $\alpha = 0.241$) (see Table 2).

Table 2
t-Test Results for Non-Debater and Debater Groups

Dimensions	Significance (two-tailed)
Anarchic relativism	0,227
Dynamic relativism	0,630
Simplism	0,991
Skepticism	0,396
Dogmatism	0,241

Further analysis was conducted within the debater group to explore potential differences in relativism and superficiality in relation to the variable number of debates participated in during the school year. It was hypothesized that the intensity of an attitude might correlate with the frequency of practice. Analysis of variance (ANOVA) demonstrated a significant difference among the groups ($\alpha = 0.01$) with respect to the epistemic stance of "anarchic relativism." Analysis of Variance (ANOVA) is a statistical procedure used to compare the means of three or more groups for scalar variables, assuming homogeneity of variances and independence of observations. Subsequent application of Tukey's HSD test, a statistical procedure used to identify significant differences between group means for scalar variables, following an ANOVA, while controlling for multiple comparisons, identified the significant variations between those who participated in three debates and groups who participated in four ($\alpha = 0.015$) and six debates ($\alpha = 0.029$). However, interpreting these results is complex, as the group with three debates does not exhibit significant differences compared to those who participated in five or more than six debates. This complexity highlights the need for further and more structured investigations.

5. Discussion

The results of this study provide valuable insights into the relationship between competitive debate participation and personal epistemologies, addressing longstanding concerns about whether this pedagogical method fosters relativism or superficiality. The analysis did not yield sufficient evidence to reject the null hypotheses formulated for this study. Specifically, the results suggest that participation in competitive debates does not

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appear to significantly contribute to relativism, as stated in H01, nor does it seem to promote superficiality, as outlined in H02. These findings indicate that the epistemic attitudes of participants in competitive debate activities do not differ in a statistically meaningful way from those of non-participants concerning these two dimensions. These results challenge the historical critiques that debate fosters relativism or oversimplification, instead suggesting that participants maintain epistemic attitudes comparable to their non-debating peers.

The investigation of secondary epistemic dimensions, including "skepticism" and "dogmatism", similarly revealed no significant differences between the groups. For this second set of results, it could have been expected that competitive debate, by promoting argumentative and metacognitive skills, might have influenced the personal epistemology of "dogmatism," as the development of these two skills would distance individuals from dogmatic epistemic stances (Baxter Magolda, 1987; Kuhn, 2005). However, this hypothesis was not among those explicitly formulated in the study and would merit further investigation. Moreover, the low reliability of the scrupulosity dimension ($\alpha = 0.334$) warrants caution in interpreting this result, as it suggests potential issues in the consistency of responses for this factor. This finding underscores the need for further refinement of the questionnaire to better capture this dimension.

Confirming these null hypotheses offers meaningful contributions to the understanding of debate as a pedagogical practice, addressing key criticisms and expanding the scope of academic inquiry. Indeed, the findings challenge longstanding critiques by providing empirical evidence that debate does not foster relativism or superficiality. This counters the notion that debate promotes an indifferent approach to truth, complexity, or shared ethical foundations. Instead, it reinforces the idea that debate encourages participants to deeply engage with diverse perspectives, fostering intellectual rigor, thoughtful inquiry and constructive communicative relationships (cf. De Conti, 2014) – all of which can be considered antidotes to polarization – emphasizing its value beyond rhetorical skill-building.

Finally, this study opens a pathway for future research by introducing personal epistemologies as a critical lens through which to examine the effects of debate. Although empirical investigations in this area are currently lacking, a gap that this article seeks to address, the study demonstrates the richness and significance of this field, offering valuable insights into how debate might influence epistemic attitudes and contribute to the cultivation of reflective and critical citizenship. This expanded focus not only enhances our understanding of debate as a teaching method but also situates it within a broader framework of educational and developmental theory. Indeed, since personal epistemologies are intricately connected to civic and ethical development (Baxter Magolda, 1987, 1992, 2001), this alignment is essential for maximizing the pedagogical benefits of debate while mitigating potential risks.

While this study offers important insights into the relationship between debate and personal epistemologies, it also presents limitations that should be addressed in future research to expand and refine the findings. The primary limitations relate to the research design, the sample characteristics, and the scope of the hypotheses and measurements employed. The cross-sectional nature of the study restricts its ability to capture longitudinal changes in personal epistemologies that may occur through sustained debate practice. A pre- and post-intervention design would provide richer data on how participants' epistemic beliefs evolve over time and whether debate has a measurable influence on this trajectory. Additionally, while quantitative methods were suitable for testing null hypotheses, they lack the depth required to explore the nuanced ways in which debate might shape or reinforce epistemic attitudes. Integrating qualitative methods, such as interviews or open-ended responses, could yield a more comprehensive understanding of how participants perceive and engage with knowledge in the context of debate.

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Another limitation consists in the scope of the questionnaire used, *How I Know* (*Come Conosco*), while validated and effective in measuring several epistemic dimensions, does not address constructs like dualism, which have been central to critiques of debate. Scholars such as Tumposky (2004) have argued that the dichotomous nature of debate can reinforce dualistic thinking, ignoring the multiplicity of perspectives that complex issues require. Including additional dimensions, such as dualism, would enrich the analysis and allow for a broader assessment of the impact of debate on personal epistemologies.

Moreover, the use of a convenience sample, though diverse in terms of gender, age, and educational background, limits the generalizability of the findings. Expanding the sample to include participants from different cultural and educational contexts and a variety of debate formats would enhance the robustness of the results. The significant differences in gender observed in the present study also highlight the need to control for these variables in future research to determine their interaction with debate participation and its influence on epistemic attitudes.

As a final consideration, it is important to address the perception that null results, while instrumental in challenging longstanding criticisms of debate, may be regarded as less impactful due to a prevailing bias in academic literature that prioritizes "positive" findings. This perspective reflects a constrained understanding of what qualifies as a meaningful contribution, rather than representing a genuine limitation of the study itself. In fact, this research highlights the crucial role of null-result studies in fostering a more balanced and nuanced understanding of the phenomenon under investigation. By demonstrating that debate does not promote relativism or superficiality, the findings provide meaningful empirical evidence that counters historical critiques and affirms the educational value of debate in supporting intellectual and ethical development.

Future research should pay particular attention to the dimension of "dogmatism", which does not appear to be influenced by participation in competitive debate. A variation in this dimension might reasonably have been anticipated, given the critical and metacognitive skills promoted by debate participation. Its inclusion in future studies is therefore essential, as this absence of variation underscores the need for a deeper and more nuanced analysis. Notably, dogmatism is not conceived in the literature as a direct consequence of debate. On the contrary, it is viewed as a dimension that debate might mitigate, attenuate, or even eliminate. However, it is also influenced by broader educational trajectories, suggesting that its interaction with debate should be examined in conjunction with other scholastic and developmental factors.

Moreover, future research could greatly benefit from adopting a pre- and post-intervention design combined with a qualitative approach to examine whether – and in what direction – debate practice influences personal epistemologies. While the quantitative approach employed in this study was appropriate for hypothesis testing, it falls short of providing a comprehensive understanding of the nuanced relationship between debate and personal epistemologies. Such an approach could also help determine whether any observed changes are attributable to contextual or instructional factors rather than solely methodological ones.

Furthermore, investigating whether debate fosters an epistemology aligned with the complexity paradigm (Morin, 2001, 2007) could provide valuable insights. This paradigm, increasingly recognized as essential for addressing contemporary challenges, offers a promising framework for understanding how debate might contribute to the development of epistemic attitudes capable of tackling multifaceted and global issues.

In conclusion, while this study successfully challenges criticisms of debate and establishes a foundation for empirical inquiry into personal epistemologies, addressing these limitations in future research will enhance the depth, scope, and applicability of findings, contributing to a more nuanced understanding of the relationship between debate and epistemic development.

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6. Conclusion

This study represents a meaningful contribution to addressing longstanding concerns about the impact of competitive debate on personal epistemologies, particularly regarding accusations of fostering relativism and superficiality. By employing a quantitative methodology and a validated epistemological tool, the research provides empirical evidence that challenges historical critiques of debate as a pedagogical practice. Specifically, the findings demonstrate that participation in competitive debate does not significantly contribute to relativism or superficiality. These results reinforce the role of debate as a pedagogical tool capable of cultivating critical thinking, openness to diverse perspectives, and metacognitive skills. Moreover, the study's focus on personal epistemologies highlights the nuanced ways in which debate interacts with cognitive and moral development, offering a framework for understanding how structured argumentation can support the formation of reflective and responsible citizens.

Beyond its immediate implications, this study opens new avenues for research into the relationship between debate and epistemic development. Future investigations should build on these findings by incorporating longitudinal designs, qualitative approaches, and broader epistemic dimensions, such as dualism and the complexity paradigm. Such efforts will deepen our understanding of the educational impact of debate, ensuring its alignment with the broader goals of fostering ethical and civic responsibility in an increasingly interconnected world.

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