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## An Examination of Epistemic Beliefs about History in Initial Teacher Training: A Comparative Analysis between Primary and Secondary Education Prospective Teachers

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### ABSTRACT

Epistemic beliefs about history can influence the way educators address this discipline with their students. This mixed-methods study establishes a comparison between three groups: secondary education, and both second-year and third-year primary education social studies pre-service teachers. Using a sample of 430 participants, the *Beliefs About History Questionnaire* (BHQ) was applied to quantitatively assess the level of agreement with three stances (copier, borrower, and criterialist) and the consistency of the answers. Responses were also codified and qualitatively examined. While all groups favored a criterialist stance, secondary education pre-service teachers showed more nuanced and consistent visions than their primary education counterparts. A discussion is presented on the role of initial teacher training and on the characterization of epistemic cognition in history.

### KEYWORDS

Epistemic beliefs; epistemic cognition; history education; initial teacher training; secondary education; primary education

APPROACHING HISTORY EDUCATION can be a complex endeavor, not only due to the diverse existing conceptions about the nature of history, but also because of the complexity of addressing this discipline in educational contexts. Among the distinct kinds of knowledge that are addressed in the classroom, it is possible to differentiate three types: declarative, conceptual and epistemological knowledge. However, only the latter emphasizes how we are able to know precisely what we know, and underscores the way knowledge is constructed in the framework of a specific discipline (Johnston, Hipkins, & Sheehan, 2017).

Specific stances regarding the nature of this discipline and the construction of knowledge can affect the way students – and even teachers – approach history, which can either hinder or promote historical understanding (VanSledright & Maggioni, 2016). From this point of view, an examination of how pre-service educators think about some of these notions could be useful in initial teacher training, enabling a more effective approach that might also help understand potential differences and similarities between prospective teachers with diverse academic backgrounds. Because different conceptions about history can lead to very distinct visions regarding the best way to teach history, an examination of the epistemic beliefs of educators about this discipline can provide information about epistemic development, on the understanding that a disposition toward reflexivity in the classroom has the potential to promote a nuanced approach to teaching practices that focus on epistemic cognition (Fives, Barnes, Buehl, Mascadri, & Ziegler, 2017).

From the point of view of history, epistemological knowledge is closely related to the critical examination of sources, facts, and historical evidence while also focusing on meaning and interpretation in order to produce historical narratives (Tucker, 2010), which are mediated by previous knowledge and by partial understanding (Shreiner, 2014). In their review of the latest developments in the field of epistemic cognition in history, VanSledright and Maggioni (2016) indicate that historians usually try to reconcile objectivity and subjectivity in history by being aware of the interpretative process that mediates knowledge, which can also be affected by socio-cultural and institutional contexts (Sakki & Pirttilä-Backman, 2019). This “uncertainty in the distance between the present and the past and the ambiguity of historical objects” has been identified as a domain-specific concern in epistemic cognition in history (Sandoval, Greene, & Bråten, 2016, p. 469). On this account, the specificity of this discipline requires a broader discussion regarding conceptions about history in educational and epistemic cognition research.

### ***Epistemic Cognition and History Education***

Personal epistemologies started being examined using a cognitive framework in the 1970s, beginning with the influential work of Willem Perry (1970). Perry tried to go beyond Piaget’s theories of cognitive development by analyzing the way undergraduate students dealt with uncertainty, a lack of information, and multiple points of view. An emerging idea of progression led to an examination of epistemic belief models of a developmental nature, usually with a progression from naïve beliefs toward more nuanced positions. Theoretical models and conceptualizations, such as the one developed by King and Kitchener (2002) which used three different stages (pre-reflective, quasi-reflective and reflective) became useful to delineate distinct levels of epistemic understanding. The same can be said of the framework created by Kuhn (1999), in which four levels (realist, absolutist, multiplist, and evaluative) could be differentiated. In both models, critical and reflective thinking were examined, offering a way of analyzing students’ reasoning, but also of providing educators with opportunities to give the students feedback and to promote their development.

Beyond traditional developmental and dimensional models, such as the ones derived from the work of Schommer (1990), research on epistemic cognition has evolved over the last decades. Nowadays, beliefs about knowledge are understood to be a process that goes beyond traditional accounts of cognition and metacognition and are an essential element of critical thinking which encompasses constructs such as epistemic beliefs, aims, and resources (Hofer, 2016). Current theoretical models are informed by recent research in philosophical epistemology. This has allowed epistemic research to refine the terminology that is used and to engage with additional perspectives and critiques, while also being aware of the philosophical underpinnings of this area of knowledge (Chinn & Rinehart, 2016; Muis, Bendixen, & Haerle, 2006).

Current research is also aware of epistemic beliefs operating at different levels and the existence of domain specificity (Hofer, 2006; Muis et al., 2006), although there are efforts to clarify how domain-general and domain-specific beliefs can operate together – for instance, at a topic-specific level (Bråten & Strømsø, 2010; Hofer, 2016). Epistemic beliefs of different disciplines have been examined according to their own specific characteristics and have been the focus of attention of many lines of inquiry. And while it is possible to find common elements between domains, substantial efforts have been made to establish a differentiation capable of focusing on diverse disciplinary perspectives (Greene, Sandoval, & Bråten, 2016).

Research on domain-specific epistemic cognition has found variations across disciplines, not only in aims and ideals, but also in processes. For instance, while experimental science or mathematics are focused on the development of models and general explanations, history sometimes attends to particular events and always contextualizes historical evidence (Tucker, 2010). At the same time, although science tends to make use of controlled experiments, historians engage in

different processes, analyzing historical perspectives, using counterfactuals or examining motivations. These aspects that can not only influence experts but students as well (Chinn & Sandoval, 2018). Epistemic development in each discipline can differ, and even the use of underlying dimensions (such as certainty and simplicity of knowledge) can capture divergent concepts in mathematics, experimental science, and social science (Greene & Yu, 2014).

Beliefs about history, especially in relation to the idea of objectivity and the possibility of analyzing the past in a rigorous way, have been a source of constant philosophical and historiographical debate since the discipline began (Jenkins, 2009). On the other hand, educational research has only recently started focusing on this topic. Not only has educational research built upon the foundation established by epistemic cognition, but also on the advances being made in domain-specific studies. Just like with personal epistemologies, research has shown that conceptions about history are also linked with different approaches in the teaching of this discipline, although the effects do not always seem to be predictable or uniform (Evans, 1990) and should be analyzed together with pedagogical orientations (Stoddard, 2010).

Epistemological beliefs have been examined as part of a more comprehensive framework that tries to encompass substantive content and historical thinking concepts (van Boxtel & van Drie, 2018). The way students and educators think about this discipline seems to be related not only to historical understanding or reasoning, but also to the social and practical dimension of history. In this regard, epistemological conceptions about how the past is represented from a disciplinary point of view not only have a connection with historical thinking, but also with historical consciousness (Karlsson, 2011; Miguel-Revilla & Sánchez-Agustí, 2018). In any case, these are aspects that can be addressed in initial teacher training and can affect how prospective educators think about history. A clear conceptualization of epistemic beliefs in this field may be of practical use in order to shape pre-service teachers' beliefs. This would provide trainee educators with an adequate set of tools and a comprehensive theoretical framework that might orient their practice.

Epistemic beliefs, from a broad point of view, are not only a reflection of how students understand the nature of knowledge, and can also influence other learning outcomes such as text comprehension or conceptual change (Buehl & Alexander, 2001). At the same time, they can also affect the way educators cover specific disciplines in the classroom which could, in turn, determine their teaching practices (Brownlee, Schraw, & Berthelsen, 2012). Current research has highlighted how goals and non-epistemic aims should also be considered – along with epistemic beliefs – when examining how educators implement their practices (Buehl & Fives, 2016). This can inform teacher training as well as cognition research.

### ***Conceptualization and Assessment of Epistemic Beliefs about History***

Although the number of specific conceptualizations regarding history is comparatively scarce, it is possible to identify a few notable contributions. The model developed by Lee and Shemilt (2003) is one of the most comprehensive frameworks in history education, and while it is based on students' ideas about evidence, it has become a useful way of examining how students are able to think about the disciplinary dimension of history. Inspired by this conceptualization, a few alternative approaches have been developed, including the four-stage model proposed by Martens (2015) in which pupils are identified according to their vision of history as a picture of the past, as the historian's intention, as the interpretation of the past, or as a construct.

Conversely, Liliana Maggioni and her colleagues have been the main proponents of a conceptual model capable of describing how teachers think about history (Maggioni, Alexander, & VanSledright, 2004). They have established a theoretical framework describing different epistemic stances, and developed a research instrument intended to measure these positions from a quantitative point of view (Maggioni, VanSledright, & Alexander, 2009). Their model was influenced by Lee and Shemilt's proposals, but also by non-domain-specific conceptualizations, allowing them

to propose three different stances (copier, borrower and criterialist) in a framework which, while it does not presume a necessary progression toward more complex positions, clearly establishes a preferable outcome.

The first of these stances takes its name (copier) from the propensity detected in many students to take the past at face value, in line with a realist or absolutist reasoning (Kuhn, Cheney, & Weinstock, 2000). People that adhere to this stance tend to conceive the past as immutable and clearly accessible from the present, and as something that usually resembles a story which does not necessarily have to be critically analyzed (Lee & Shemilt, 2003). On the other hand, the borrower stance is of a more subjective and relativist nature. Consistent with a pre-reflective stance (King & Kitchener, 2002), this vision highlights personal interpretation when analyzing the past, giving an equally prevalent role to different points of view. In this case, history seems to be conceived as a simple matter of opinion stemming from the historian's intention (Martens, 2015). Lastly, the criterialist position offers a more nuanced and reflective approach to history in which evidence is used to reconstruct the past, and where it is possible to reconcile an objectivist and a subjectivist vision. Here, history is seen as a construct and, as such, as something interpretable and different from the past in itself.

Due to the specificity of history education, the use of quantitative instruments has not been prevalent. Instead, interpretative qualitative approaches in line with current criticism of self-report instruments have been favored (Greene & Yu, 2014; Sinatra, 2016). Although non-domain-specific epistemic beliefs questionnaires had been developed before (Schommer, 1990), only a few instruments focus specifically on history (O'Neill, Guloy, & Sensoy, 2014). Maggioni and her colleagues initially developed the *Beliefs about Learning and Teaching in History Questionnaire* (BLTHQ), later adapted as the *Beliefs about History Questionnaire* (BHQ), using a conceptual model based on the three stances described above (Maggioni et al., 2009). Here, while beliefs are analyzed in relation to the copier, borrower, and criterialist visions, they are not simply grouped in just one of these stances. Instead, the level of agreement with each one of them is indicated.

The questionnaire has been applied in different educational contexts and countries, to both teachers and students, in order to analyze the development of epistemic cognition. Results show that Maggioni and her colleagues identified the fleeting nature of teachers' epistemic beliefs about history, and how they sometimes hold contradictory positions (VanSledright & Maggioni, 2016). They also identified a tendency in students and teachers to treat facts and opinions as a dichotomy, and to suddenly move from an objectivist position to a relativist one in an inconsistent way. This inconsistency was also observed after analyzing a series of prospective teachers in the United States, even after an intervention in which they were explicitly taught about the epistemic foundations of history as a discipline (VanSledright & Reddy, 2014).

Other studies in different contexts that have tried to assess epistemic beliefs about history have also made use of the BHQ, with both primary and secondary education pre-service teachers in Spain (Miguel-Revilla, Carril-Merino, & Sánchez-Agustí, 2017), as well as with secondary education students (Mierwald, Lehmann, & Brauch, 2018) and university students in Germany (Mierwald, Seiffert, Lehmann, & Brauch, 2017). The same questionnaire has also been used in a series of studies conducted in the Netherlands, where researchers found an increase in the level of agreement with the borrower stance (that is, with subjectivist positions) after an intervention in which educators focused explicitly on second-order concepts (Stoel, van Drie, & van Boxtel, 2017). The same authors and their colleagues also conducted another study, this time using an adaptation of the BHQ, in which the attention was drawn to the contrast between beliefs in secondary education students with the aim of developing an instrument capable of informing teaching practices. In this case, the possibility of making a clear distinction between naïve and nuanced stances was one of the main concerns of the study, as was the expectation of leaving behind the contrast between objectivist and subjectivist positions, and instead focusing on ideas related to methodology in history (Stoel, Logtenberg, et al., 2017).

## **Purpose of the Study**

Having outlined the importance of epistemic beliefs and a conceptual framework that can be used to analyze how prospective teachers think about this discipline, the main aim of this study and a series of research questions are now presented. The purpose of this research is to assess primary and secondary social studies pre-service teachers' epistemic beliefs about history, significantly expanding on a preliminary exploration of prospective educators' visions in which the same instrument was originally applied (Miguel-Revilla et al., 2017). For this, a quantitative analysis is used to compare the participants' level of agreement with each of three positions: the copier, borrower, and criterialist stances. The level of consistency of the answers provided by prospective teachers is also taken into account to analyze epistemic beliefs and establish potential differences between second-year and third-year primary education trainee teachers, and between these two groups and secondary education pre-service teachers. Additionally, this study also aims to supplement the quantitative data obtained using the BHQ with a comprehensive qualitative analysis with a focus on four main categories that examines the arguments used by the participants. The following research questions were considered for this study:

1. What epistemic stances do primary and secondary education social studies prospective teachers favor?
2. Are there significant differences in the level of agreement with each of the stances and the consistency of the answers between the three groups that were analyzed in the study?
3. Are there differences between the groups of prospective teachers regarding their ideas about the nature of history, its interpretation, the debate about objectivity, and the use of evidence in historical inquiry?

## **Methods**

This study is based on a mixed-methods approach, combining quantitative and qualitative procedures and techniques in order to obtain a more informative picture of pre-service teachers' cognitive processes and ideas. While the quantitative approach is prominent in this research, it has been supplemented by a qualitative analysis from a series of open-ended responses, using a convergent parallel design with a concurrent implementation sequence (Biesta, 2017; Creswell, 2014). The aim of the quantitative approach was to establish a comparison between the three groups that took part in the study (second-year primary education teachers, third-year primary education teachers, and secondary education prospective teachers), making use of a comprehensive qualitative examination of the responses provided by the participants to obtain and corroborate additional information. Emergent and pre-defined categories were used to codify the information and to group participants according to concepts related with epistemic cognition in history, following an inductive analysis (Gay, Mills, & Airasian, 2012).

## **Context and Participants**

A total of 430 pre-service teachers took part in this study. Participants can be classified into three groups: 143 participants were enrolled in their second year of a Bachelor's Degree in primary education, 163 in their third year of the same degree, and 124 were enrolled in a Master's Degree in secondary education. Prospective teachers originated from two different Spanish universities, and all of them completed the questionnaire in person, during lessons, under the supervision of the researchers. Data were obtained with their informed consent between 2016 and 2019, during three academic years.

All primary education prospective teachers and a total of 53 secondary education pre-service teachers were enrolled in the University of Valladolid. Due to the reduced number of students admitted each year in the Master's Degree in secondary education at this institution, information was obtained from 71 additional secondary education pre-service teachers enrolled in the same Master's Degree in the University of Zaragoza. A preliminary analysis was conducted which indicated that secondary education students had nearly identical age and academic backgrounds, as almost 80% of them had recently finished their Bachelor's Degrees in history or art history, while the rest of them had finished Bachelor's Degrees in geography or other areas linked with the humanities and social studies. The Master's Degree in secondary education can be described as comparable between both institutions since the requirements to become a secondary education teacher had been established by the Spanish Government.

Furthermore, in order to assess potential differences between both groups of secondary education prospective teachers from the two different universities, a series of independent sample t-tests were run after obtaining the information using the questionnaire. Results indicate that both groups are comparable, and do not evidence any significant differences in all three scales of the instrument: copier ( $t(122) = .90, p = .37$ ), borrower ( $t(122) = .98, p = .33$ ) and criterialist ( $t(122) = -.37, p = .71$ ).

In this particular context, primary education pre-service teachers start their instruction in history and social studies education in their second year, meaning that third-year trainee educators had already spent at least one academic year learning about how to teach social sciences. Because information provided by second-year trainee teachers was collected at the beginning of the academic year, it was expected that potential differences would be found with third-year participants who had been enrolled in two different subjects that explicitly focused on social science education as part of their training program. At the same time, while not focused on educational topics, secondary education pre-service teachers had spent between four to five years studying history from a disciplinary point of view. This is one of the main differences between primary and secondary education prospective teachers: while instructors of both groups of participants usually focus on pedagogical aspects during their training and do not convey clearly-defined epistemic stances regarding history, secondary education pre-service teachers have specific disciplinary knowledge due to their academic background, which is something that might affect their beliefs.

Sampling can be characterized as non-probabilistic, applying a purposive strategy that took into account accessibility criteria, and that also be described as typical (Wellington, 2015). The intention of the study was to obtain information from a considerable number of prospective teachers, but also to establish a comparison between the different groups. Due to the higher proportion of primary education pre-service teachers enrolled in tertiary education, a quota sampling strategy was used in order to obtain a comparable number of participants (Neuman, 2007).

### **Research Instrument**

The *Beliefs About History Questionnaire* (BHQ) (Maggioni et al., 2004; VanSledright & Reddy, 2014) was used to measure students' epistemological beliefs about the discipline, according to the three different epistemic positions that have been previously described. This instrument is composed of 22 items, with five of them corresponding to the copier or objectivist scale, nine more related to the borrower or subjectivist scale, and eight in relation with the criterialist scale (Table 1). Items were scored using a six-point Likert scale (1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Somewhat disagree*; 4 = *Somewhat agree*; 5 = *Agree*; 6 = *Strongly agree*). Scores for the three stances were quantitatively assessed, and mean scores for each of them were provided taking into account all items belonging to each scale. All 430 participants completed this questionnaire, whose internal structure, factors, and other psychometric properties had been assessed in previous studies (Maggioni et al., 2004, 2009), as well as in this one.

**Table 1.** Items included in the BHQ grouped according to stance.

Stance	Item and item number
Copier or objectivist	5. Disagreement about the same event in the past is always due to lack of evidence. 9. Good general reading and comprehension skills are enough to learn history well. 16. The facts speak for themselves. 19. Even eyewitnesses do not always agree with each other, so there is no way to know what happened. 20. Teachers should not question students' historical opinions, only check that they know the facts.
Borrower or subjectivist	2. History is simply a matter of interpretation. 4. Students who read many history books learn that the past is what the historian makes it to be. 6. Good students know that history is basically a matter of opinion. 8. Historical claims cannot be justified, since they are simply a matter of interpretation. 10. Since there is no way to know what really happened in the past, students can believe whatever story they choose. 12. The past is what the historian makes it to be. 14. It is impossible to know anything for sure about the past, since no one of us was there. 17. Students need to be aware that history is essentially a matter of interpretation. 22. There is no evidence in history.
Criticalist	1. It is fundamental that students are taught to support their reasoning with evidence. 3. A historical account is the product of a disciplined method of inquiry. 7. Students need to be taught to deal with conflicting evidence. 11. History is a critical inquiry about the past. 13. Comparing sources and understanding author perspective are essential components of the process of learning history. 15. Knowledge of the historical method is fundamental for historians and students alike. 18. Reasonable accounts can be constructed even in the presence of conflicting evidence. 21. History is the reasonable reconstruction of past occurrences based on the available evidence.

Note. The complete BHQ, included above, which has been developed by Maggioni et al. (2009), has been previously published in its entirety (VanSledright & Reddy, 2014).

A confirmatory factor analysis (CFA) was used to analyze whether the results obtained after the use of the questionnaire indicated a good fit with the underlying structure of the model. Results obtained after the administration were satisfactory, indicating an adjusted goodness-of-fit index (AGFI) equal or over the .90 threshold (AGFI = .90) which is in line with acceptable levels for a good model fit (Schumacker & Lomax, 2016). The standardized root-mean square residual (SRMR) and the root-mean-square error of approximation (RMSEA) are both between .05 and .08 values (SRMR = .064, RMSEA = .059), also indicating that the results are in the acceptable fit range (Brown, 2015). The chi-square ( $\chi^2$ ) values are provided  $\chi^2(206, N=430) = 517.97, p < .05$ . However, the chi-square is very sensitive to sample size, and samples sizes over 200 tend to signal significance. Thus, the previous indicators might be better to reveal model fit in cases such as this (Brown & Moore, 2012; Lewis, 2017; Schumacker & Lomax, 2016).

In this occasion, after taking into account preliminary results that found relevant differences between primary and secondary pre-service teachers (Miguel-Revilla et al., 2017), a closer examination of participants' ideas was considered as the most appropriate approach. Three of the items (items 1, 19 and 20) were selected and included in the same document that participants completed during the last phase of the study. Participants had to provide their opinion and defend their position in these three open-ended questions, where they were asked about the prominence of facts when learning about history, whether it is possible to know what happened in the past when eyewitnesses do not always agree with each other, and about the role of evidence.



This second measure using the questionnaire was designed as a way of supplementing the data obtained by the quantitative approach, and also as a way of triangulating the information that was processed making use of a qualitative analysis. As part of the research design, this complementary qualitative information was collected during the last of the three academic years. The responses provided by 75 trainee teachers were collected for this analysis, randomly selecting 25 questionnaires from each of the three groups in order to examine an equivalent number of responses. The implementation of both methods was concurrent, and while the quantitative examination of the results assumed the main role, the two approaches were seen as complementary, and followed a convergent parallel design (Creswell, 2014).

### Data Analysis Procedure

The data obtained using the 430 questionnaires were quantitatively processed using SPSS and SPSS Amos. A one-way analysis of variance (ANOVA) was conducted in order to assess whether it was possible to find significant differences in any of the three scales among the three groups of prospective teachers. An additional one-way analysis of variance was used to determine potential contrasts in the consistency of the participants' responses. In each occasion, this was supplemented with a Tukey's Honestly Significant Differences (HSD) post hoc test.

In order to calculate this level of consistency, a more refined version of the procedure indicated by the original authors of the instrument was developed. This included converting the 1-6 Likert scale values to a +3 to -3 scoring range, indicating the level of agreement with each of the items and positions (VanSledright & Reddy, 2014). Instead of classifying the responses as coherent or incoherent according to the criterialist scale, and obtaining a consistency score by dividing the number of coherent answers by the total number of items (VanSledright & Reddy, 2014), the complete scoring range was taken into account. By adding all values and calculating the percentage in relation to the potential maximum score, it was possible to determine with a higher degree of precision how consistent the responses were in relation to an ideal criterialist position.

The randomly-selected 75 responses to the three open-ended questions were analyzed using a qualitative approach. Information was examined by applying a combination of inductive and pre-defined categories derived from the conceptual framework based on four different notions: the nature of history, interpretation, objectivity and subjectivity, and use of evidence (Table 2).

**Table 2.** Characteristics of each of the epistemic stances assessed with the BHQ.

Stance	Main characteristics
Copier or objectivist	<ul style="list-style-type: none"> <li>● History is conceived as something analogous to the past.</li> <li>● History is perceived as unique and as a static image that can be directly accessed.</li> <li>● Absolute objectivity is seen as possible, and any deviation is due to incomplete or incorrect information.</li> </ul>
Borrower or subjectivist	<ul style="list-style-type: none"> <li>● Evidence is not always considered, and is usually treated as correct or incorrect.</li> <li>● History and the past are seen as different concepts, but there is no discrimination between facts and opinions.</li> <li>● While several points of view and opinions are taken into account, no criteria is used to help discriminate among them.</li> <li>● Relativistic predisposition when assessing testimonies and all sort of evidence. Any attempt to reach an objective truth is abandoned.</li> </ul>
Criterialist	<ul style="list-style-type: none"> <li>● Evidence assumes a secondary role in favor of interpretation.</li> <li>● History is understood as a disciplinary field of knowledge that is constructed over time.</li> <li>● Differences in interpretation are critically examined</li> <li>● There is a balance between the subjective and the objective elements in history.</li> <li>● Evidence is contextualized and taken into account in historical inquiries.</li> </ul>

Note. Description of the concepts are based on the characterization established in Miguel-Revilla and Fernández Portela (2017), derived from the theoretical framework developed by Maggioni et al. (2009).

Prospective teachers were placed in different groupings according to these categories in order to establish a comparison between the two groups of primary education pre-service teachers and secondary education trainee teachers. Participants' responses were codified to obtain a more comprehensive vision of their ideas about history.

A series of procedures were utilized in order to ensure both qualitative reliability and qualitative validity during and after the analysis, allowing for the consistency of the approach to be determined, as well as the accuracy of the findings, respectively (Creswell, 2014). First of all, questionnaires were anonymized in order for the researchers to reduce bias when analyzing the information, and were transcribed in order to be codified using ATLAS.ti. Data were initially coded using emerging categories, which were later grouped and examined according to pre-defined overarching notions or themes, as described above. The researchers followed a series of strategies focused on reliability during the codification process, including transcription and code checking. Additionally, regular meetings were held where the procedures were discussed and where the researchers ensured that no definitional drift was present (Gibbs, 2007). Regular meetings also allowed for the researchers to address code cross-checking or intercoder agreement wherein every interpretative discrepancy was discussed and a consensus was reached.

Regarding validity, it is important to note that open-ended questions were used to triangulate information obtained after the quantitative analysis. Although three open-ended questions were used to obtain information about specific categories, data were codified in a comprehensive manner, allowing for the researchers to examine ideas and themes that might not have been present in other responses. While a member checking procedure was not used in this occasion, the authors tried to be constantly aware of their own positionality, and additional strategies were applied to ensure qualitative validity (Gibbs, 2007). Comparisons were constantly used to check the accuracy and consistency of the codes that were used, quotations were included, and discrepancies were provided when presenting information, allowing for the reader to understand the complexity of some of the topics that were covered.

## Results

### *Epistemic Positions and Differences among Groups*

A one-way analysis of variance (ANOVA) was conducted among the three groups of pre-service teachers in order to assess the students' level of agreement with each of the different epistemological positions after the verification of the diverse assumptions required for the application of this procedure, including testing for normality using the Shapiro-Wilk test. Cronbach's  $\alpha$  for the copier scale was calculated as  $\alpha = .53$ , as  $\alpha = .50$  for the borrower scale, and as  $\alpha = .80$  for the criterialist scale. Although two of these scales reflect particularly low levels, other studies have documented similar difficulties (Mierwald et al., 2018; Miguel-Revilla et al., 2017; Stoel, van Drie, et al., 2017) which will be addressed later on. Levene's test for homogeneity of variances was also used, despite working with approximately equal sample sizes, in order to verify that all the different groups that were compared had similar population variances.

The one-way analysis of variance revealed statistically significant differences among the groups in relation to the three different stances (Table 3). This could be observed for the copier (or objectivist) stance ( $F(2, 427) = 44.48, p < .001, \eta^2 = .172$ ), for the borrower (or subjectivist) stance ( $F(2, 427) = 21.69, p < .001, \eta^2 = .092$ ), and for the criterialist stance ( $F(2, 427) = 21.19, p < .001, \eta^2 = .090$ ). While the effect could be defined as large for the copier stance ( $\eta^2 > 0.14$ ), the effect could be considered as medium for the other two stances ( $\eta^2 > 0.06$ ), according to Cohen (1988). With the aim of examining the results and analyzing the diverse positions of each of the three pre-service teacher groups, a Tukey's Honestly Significant Differences (HSD) post hoc test was also used to establish a more comprehensive comparison.

**Table 3.** One-way analysis of variance ANOVA results for each of the three groups.

Stance	Group									
	Primary education pre-service teachers (second year)			Primary education pre-service teachers (third year)			Secondary education pre-service teachers			<i>F</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	
Copier	3.13	.68	143	3.05	.69	163	2.40	.69	124	44.48***
Borrower	2.69	.77	143	3.06	.76	163	2.48	.73	124	21.69***
Criticalist	4.49	.49	143	4.57	.43	163	4.86	.56	124	21.19***

Note. *df* = 429; *M* = mean; *SD* = standard deviation.

\**p* < .05

\*\**p* < .01

\*\*\**p* < .001

**Table 4.** One-way analysis of variance ANOVA results for each of the three groups regarding consistency.

Variable	Group									
	Primary education pre-service teachers (second year)			Primary education pre-service teachers (third year)			Secondary education pre-service teachers			<i>F</i>
Consistency	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	
	21.33	16.23	143	25.62	14.65	163	27.30	17.15	124	5.08**

Note. *df* = 429; *M* = mean; *SD* = standard deviation.

\**p* < .05

\*\**p* < .01

\*\*\**p* < .001

The data obtained in the study did, in fact, show diverse views in each of the groups, something that was especially noticeable between primary and secondary education trainee teachers. While primary education pre-service teachers tended to hesitantly reject a copier (or objectivist) point of view, this position was not as prominent with secondary education trainee teachers ( $M=2.40$ ,  $SD = .69$ ). Tukey's HSD post hoc test pointed to a statistically significant difference and large effect sizes between secondary education and second-year primary education pre-service teachers ( $M=3.13$ ,  $SD = .68$ ,  $p < .001$ ,  $d=1.07$ ), as well as between secondary education and third-year primary education prospective teachers ( $M=3.05$ ,  $SD = .69$ ,  $p < .001$ ,  $d = .94$ ). The test showed no significant differences between both primary education groups regarding this stance ( $p = .57$ ).

It was possible to find a more complex landscape in relation to the borrower (or subjectivist) stance. On the one hand, Tukey's HSD post hoc test did not indicate a statistically significant difference between secondary education prospective teachers ( $M=2.48$ ,  $SD = .73$ ) and second-year primary education trainee teachers ( $M=2.69$ ,  $SD = .77$ ,  $p = .06$ ). On the other hand, it was possible to detect statistically significant differences and moderate effect sizes in the comparison between secondary education trainee teachers and third-year primary education prospective teachers ( $M=3.06$ ,  $SD = .76$ ,  $p < .001$ ,  $d = .78$ ), and between both primary education groups ( $p < .001$ ,  $d = .48$ ). This difference and the intricacy of this stance, widely rejected by secondary education pre-service teachers, will be discussed later on.

Last of all, the data related to the criticalist stance evidenced a more traditional behavior, similar to the one found regarding the copier (or objectivist) scale. In this occasion, all groups tended to favor this position, although the level of agreement was higher among secondary education prospective teachers ( $M=4.86$ ,  $SD = .56$ ). Tukey's HSD post hoc test showed that the difference between this group and second-year primary education trainee teachers was statistically significant with a moderate effect size ( $M=4.49$ ,  $SD = .49$ ,  $p < .001$ ,  $d = .70$ ), something that could also be found in relation to third-year participants ( $M=4.57$ ,  $SD = .43$ ,  $p < .001$ ,  $d = .17$ ). However, in the latter case, the effect size was small. Finally, Tukey's HSD test did not find any significant difference between both primary education groups in relation to the criticalist stance ( $p = .34$ ).

### **Consistency of the Positions among Groups**

Focusing on the level of consistency of the answers provided by the participants, at least in relation to a perfectly coherent criterialist position, another one-way analysis of variance (ANOVA) was conducted (Table 4). Levene's test for homogeneity of variances also confirmed similar population variances among the groups, allowing for a comparison.

The one-way analysis of variance showed a statistically significant difference between the three groups of participants ( $F(2, 427) = 5.08, p = .01, \eta^2 = .023$ ). The difference was considerable, with second-year primary education prospective teachers displaying the lowest levels of consistency, and secondary education pre-service teachers showing a higher degree of consistency in their answers. The effect, in this occasion, could be considered small, according to Cohen (1988).

Again, in order to analyze this data from a more comprehensive perspective, a Tukey's Honestly Significant Differences (HSD) post hoc test was conducted to examine the differences among groups. It is important to note that, while the results pointed to a statistically significant difference and a small effect size between secondary education pre-service teachers ( $M = 27.30, SD = 17.15$ ) and second-year primary education trainee teachers ( $M = 21.33, SD = 16.23, p = .01, d = .36$ ), this was not mirrored with third-year primary education pre-service teachers ( $M = 25.62, SD = 14.65, p = .65$ ). On the other hand, Tukey's HSD post hoc test results signaled a statistically significant difference with a small effect size between second and third-year primary education educators ( $p = .05, d = .28$ ), indicating a higher degree of consistency in the answers provided by third-year prospective teachers.

### **Qualitative Analysis of the Results**

With the aim of examining participants' perceptions more closely, and in order to establish a more nuanced differentiation between the three groups, the quantitative analysis was supplemented by an in-depth qualitative assessment of the responses provided by prospective teachers. A subset of 75 questionnaires (with an equal number of participants for each of the groups) were collected and comprehensively codified for this purpose, with the intention of corroborating the results that were previously obtained while also providing additional information. Four main different categories were used for the codification of the responses, all of them closely related to the epistemic positions about history: its nature, the debate regarding interpretation in history, the balance between objectivity and subjectivity, and the role of evidence in historical inquiry.

By focusing on the first of these categories (Table 5), it was possible to observe a significant difference between second and third-year primary education prospective teachers and secondary educators. Among those participants enrolled in a Bachelor's Degree in primary education, it was not uncommon to find a naïve identification between history and the past, treating both concepts as equivalent. While none of secondary education pre-service teachers showed this predisposition, 20% of second-year and 12% of third-year primary education trainee teachers did. Analyzing the arguments that were used, it was possible to find participants who pointed out in their own words that "I believe history should be understood just as a succession of how things happened, without any ideological influence or anything like that" (22.G1), or others who referred to history as simply "what happened in the past" (6.G1).

A different conception of history was shared by a majority of second-year primary education trainee teachers, with 56% of them thinking of it as a narration or an account. This position, also shared by 36% of third-year primary education prospective teachers, and by 32% of secondary education pre-service teachers, allowed participants to show that they understood that history is a construction about what happened in the past which takes place over time, even if it is always necessary to "collect different testimonies from different people" (50.G2). While participants

**Table 5.** Distribution of the participants in the first two categories.

Category	Group					
	Primary education pre-service teachers (second year)		Primary education pre-service teachers (third year)		Secondary education pre-service teachers	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Nature of history						
History and the past are the same	5	20	3	12	–	–
History as narration or an account	14	56	9	36	8	32
History as a scientific discipline	6	24	12	48	17	68
Interpretation in history						
Meaning static and predefined	3	12	1	4	–	–
Plurality of visions	11	44	12	48	2	8
Interpretation seen as possible	8	32	12	48	23	82

Note. One participant in the second group did not address the issue of the nature of history.

highlighted diverse aspects, and different degrees of complexity could be detected, the notion that history is something used to narrate and interpret events from the past was prevalent.

This was not the only position. A disciplinary approach, with a conception of history as a scientific discipline capable of uncovering what happened in the past by making use of a specific research methodology, was shared by 68% of the participants enrolled in the Master's Degree in secondary education. In contrast, 48% of third-year primary education trainee teachers agreed with this vision, a figure that decreased to 24% for second-year pre-service teachers. This was, in fact, the most nuanced point of view, and the one that most closely resembled the criterialist position. In these occasions, participants discussed the role of the historians, as well as the use of evidence and historical sources. For instance, one of the participants in the third group argued that “the historian should have as a goal the capability of being able to interpret historical facts by relying on the existing sources, but also on the ones that are not available, in order to be able to structure the knowledge about the past” (69.G3).

The second category that was analyzed focused on the debate about interpretation in history. After attending to the different notions regarding its nature, it was not surprising to find that 12% of second-year primary education prospective teachers considered meaning in history as something not open to interpretation, in line with the association of history and the past as analogous concepts. This was noticeable in statements such as “if something is written it is because it truly happened” (09.G1), where history was delineated as something static and predefined.

None of the secondary education trainee teachers and only 4% of the third-year primary education pre-service teachers shared this idea. This last group showed a division between those that favored a conception of history as just a plurality of different interpretations or visions (48% of the participants), and those that conceived it as something that could be interpreted in order to reach a conclusion (another 48%). In the first case, participants of this and other groups did not seem to address how to discriminate between the different points of view in history. While they sometimes tended to agree that an accumulation of diverse opinions might provide adequate material that may help them understand what happened in the past, they were inclined to consider all options as potentially equally valid, or simply just as a reflection of contrasting viewpoints. For instance, while one participant pointed out that “each person has a different way of thinking” (27.G2), another one stated “I think that we have to attend to all arguments” (10.G1), in line with the borrower stance.

On the other hand, those pre-service teachers that conceived interpretation not only as possible in history, but as a necessary requirement for all sort of inquiries in this field, were a

**Table 6.** Distribution of the participants in the last two categories.

Category	Group					
	Primary education pre-service teachers (second year)		Primary education pre-service teachers (third year)		Secondary education pre-service teachers	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Objectivity and subjectivity in history						
Objectivity (naïve)	8	32	11	44	–	–
Objectivity (nuanced)	3	12	5	20	6	24
Subjectivity (naïve)	7	28	5	20	2	8
Subjectivity (nuanced)	5	20	2	8	1	4
Balance between both	2	8	–	–	13	52
Role of evidence						
Evidence not considered	15	60	1	4	–	–
Secondary role	11	44	12	48	9	36
Main role	2	8	12	48	16	64

Note. One participant in the third group did not address the issue of objectivity and subjectivity in history.

significant majority among the secondary education group. The academic background of these participants might have influenced their point of view, with arguments consistent with a criterialist stance, like “our job is not to judge a witness, but to try to reconstruct events in the most reliable way possible by using all resources available” (59.G3), even if some of the answers of this group were more simple in nature: “the higher the number of sources or witnesses, the wider our vision would be, improving our interpretation” (66.G3).

The ideas that have been discussed here seem to be inherently intertwined with the other two categories that have been analyzed, and these ideas might be related to the discussion about the possibility of objective and subjective approaches when researching about the past, and about the role of evidence in this process (Table 6).

Regarding the third category, participants seemed to be divided in their perceptions: while second-year primary education prospective teachers favored naïve objectivist and subjectivist positions (32% and 28% of the responses, respectively), there was room for nuanced positions. On the other hand, objectivist positions were mainly defended by a majority of third-year participants, while secondary education pre-service teachers seemed to support more nuanced views. It is important to clarify that the differentiation between naïve and nuanced beliefs is of importance, despite the support of either position, as will be discussed later on.

From this point of view, the most simplistic responses tended to perceive history as something that could be analyzed from an objective point of view, in line with a copier stance. Primary education trainee teachers were inclined to fall into this line of argument, with multiple references to the possibility of reaching the truth and to the idea of neutrality. This could be observed in the following example, where a participant stated that “it is possible to know what happened, because even if witnesses do not agree, there will always exist a neutral source that really tells the facts”, confidently affirming that “from these testimonies, it is possible to build the truth” (49.G2).

Alternatively, a significant number of participants (48% and 28% of the first and second groups, respectively) highlighted the subjective nature of history, even if a majority of the arguments lacked complexity. The borrower stance, of a more relativistic nature, made its appearance in the responses, focusing on the impossibility of reaching a common position. For instance, a prospective teacher argued that “there is not a true and absolute testimony that everybody agrees with” (08.G1), while another stated: “It is not possible to know what happened, because it depends on the perspective” (32.G2).

More nuanced positions usually agreed that, while there might be multiple interpretations of an event, researchers should not forget that there is a factual core that should be taken into account, or that, despite dealing with events that really took place, interpretations determine how

the past is perceived. These positions showed a higher level of complexity in the understanding of history and were predominant, again, among secondary education pre-service teachers: only 8% of them fell into naïve positions and 52% of the responses struck a balance. In one of the answers, a participant stated that “history is mainly a human science, and as such, it will always have a subjective character”, but for him, “despite this, we should not relinquish knowing about the past, and we simply have to be cautious and rigorous, and use a variety of sources” (74.G3).

The role of evidence and its importance when addressing the past in a critical way was the fourth category that was analyzed. In this occasion, it is significant that 60% of second-year primary education trainee teachers did not consider the use of historical sources or other sorts of evidence in their reasoning. For these participants, it was more important to compare and contrast visions about the past as a way to discover new opinions, to learn to respect other people’s points of view, or for students to “be able to really understand these ideas by themselves” (33.G1). In these occasions, there was a lack of consideration for history as a scientific discipline, as signaled before.

The absence of references to the role of evidence in history contrasted with the responses found in the other two groups, something that might have to do with the fact that the second year is the first time that history and social studies education is specifically introduced in initial teacher training. In any case, third-year pre-service teachers seemed divided between those that gave evidence a secondary role in the inquiry process and those that considered the use of sources and testimonies as a fundamental piece (48% of this group’s participants agree with each of the positions).

Those that simply referred to the use of evidence were inclined to focus on the necessity of learning how to reason and defend any position (“It is important to know how to justify your knowledge” (34.G2), in the words of one trainee teacher), while those that gave evidence a key role stressed its prominence in historical investigations. This was especially noticeable with secondary education prospective teachers, where 64% of the responses highlighted the importance of the role of evidence, because, as one participant eloquently stated, “learning what sources are, and their character as the raw material of historical knowledge, is fundamental for the study and comprehension of history” (51.G3).

## Discussion and Conclusions

After examining the results obtained in this study, it is important to discuss a series of key aspects that may be derived from both the quantitative and qualitative analyses. First of all, one of the main goals of this study was to examine prospective teachers’ epistemic beliefs about history and the key differences between second-year and third-year primary education trainee teachers, as well as between them and secondary education pre-service teachers. Results signal that there are statistically significant contrasts between the groups, something that was expected taking into account previous comparisons among trainee teachers (Miguel-Revilla et al., 2017). In this case, it has not only been possible to find a clear contrast between those secondary and primary education prospective educators that took part in this study, but also between all three groups.

While the aggregate of all participants displays a clear preference for a criterialist position and a tendency to reject both the copier and the borrower stances, this is considerably more pronounced for secondary education pre-service teachers. As expected, and perhaps due to the influence of their academic backgrounds and not only to the difference in age, this group shows a more clearly-defined and noticeably coherent vision about history than their counterparts. The higher degree of agreement with the criterialist stance corroborates results obtained in other empirical studies that have used this conceptual framework (Mierwald et al., 2018; Stoel, van Drie, et al., 2017; VanSledright & Reddy, 2014). At the same time, it is interesting to note that the level of agreement with each stance is similar between both primary education groups, except for the borrower (or subjectivist) stance, where third-year participants seem to adopt a more

nuanced position, while simultaneously increasing their score in the criterialist scale, in line with secondary education prospective teachers.

This may be interpreted as an example of how the borrower stance might not only reflect a naïve relativist point of view, but instead a more complex way of examining the past where history is clearly conceived as a construction (Stoel, Logtenberg, et al., 2017) –something that is consistent with what is usually asked of students when dealing with interpretational history (Wansink, Akkerman, & Wubbels, 2016). At the same time, it might also have to do with the epistemic wobbling detected in studies with university students (Tabak, Weinstock, & Zviling, 2010) or with prospective history teachers (VanSledright & Reddy, 2014), where participants were inclined to quickly shift from objectivist to subjectivist positions depending on their own experiences when confronting potential contradictions.

In any case, and despite the contrasts that were detected, the data show a clear difference between the three groups when analyzing the consistency of the answers that were provided. The fact that consistency seems to increase from second-year to third-year primary education pre-service teachers, and from these two groups to secondary education prospective teachers, seems to imply that a more nuanced and coherent position can be achieved with an adequate educational approach (VanSledright & Maggioni, 2016). It is important to remember the distinct academic backgrounds of the participants, as this aligns with the idea that epistemic beliefs can be affected by instruction which clearly points to the importance of initial teacher training.

Although the quantitative analysis has been useful to pinpoint the main differences among groups, the in-depth qualitative examination has been of use to provide additional information about the way pre-service teachers think. By categorizing the arguments used by participants in relation to the nature and interpretation in history, as well as about the debate about objectivity and subjectivity and the role of evidence in historical inquiry, it has been possible to clearly differentiate between epistemic visions. For instance, this examination has underscored a certain contrast between the groups, with second-year primary education prospective teachers showing a more pronounced tendency than other two groups to conceive history as exactly the same as the past, with already-defined meanings, from a naïve objectivist or subjectivist perspective, and without considering evidence in their arguments. On the other hand, third-year primary education pre-service teachers might have been shown to be more prone to adopt conceptions that are a bit more complex in three of the four categories, except when discussing objectivity and subjectivity in history.

Although these two groups of participants show distinct characteristics according to the qualitative analysis, the difference is even more pronounced between them and secondary education participants. In line with the data obtained after applying the BHQ, pre-service teachers' responses clearly suggest a disciplinary approach, in which history is not only seen as a science that can be critically analyzed using evidence, but in which the objectivist and subjectivist visions are considered in a balanced way. Again, this might be a reflection of a vision of history as a construct, in which evidence is perceived as fragmentary and should be analyzed in context (Martens, 2015), a conception that might take years to develop.

The qualitative examination seems to corroborate the information obtained with the quantitative analysis, offering a complementary approach that has been able to reveal the reasoning of the participants and the ideas that were more frequently mentioned. From this point of view, the responses may be a clear reflection of the main contrasts between groups, and show the usefulness of establishing a differentiation between naïve and nuanced visions, specifically in relation with objectivist and subjectivist approaches. In fact, while the use of progression levels might be useful when analyzing epistemic visions about history (Lee & Shemilt, 2003), the debate regarding objectivity and subjectivity is more complex, and naïve versions of both stances might not necessarily be more adequate than their counterparts.

Although a vision that sees objectivity as necessary is usually intrinsically related with the copier stance, and a relativistic approach in which all opinions and points of view are considered



equally valid can be identified with a borrower stance, more nuanced arguments may also be compatible with a criterialist position (Sakki & Pirttilä-Backman, 2019; Stoel, Logtenberg, et al., 2017). Again, this might mean that the analytical value of these categories is only relative, and that the complexity of the arguments that are used may be more representative of the specific epistemic position adopted by prospective teachers.

### ***Limitations and Future Directions***

This particular study is not without a series of limitations that should be addressed. First of all, it is important to clarify that while a total of 430 participants took part in this research over three academic years, these social studies prospective educators only belonged to two universities which might affect the representativeness of the sample that was used. Although the number of participants in some of the groups, especially for those enrolled in a Master's Degree in secondary education, is usually very limited each year, future studies might consider obtaining information from a larger number of institutions encompassing additional regions. Furthermore, while a total of 430 participants' responses to the BHQ were quantitatively analyzed, only a subset of 75 (with an equal number of responses for each of the three groups) were qualitatively examined. Although this can be considered a limitation of the study, it should be noted that the aim was to try to corroborate the quantitative data that were collected by closely examining the responses provided by the participants in a concurrent way.

In addition, while the BHQ has been a very valuable instrument, there are potential issues that might be addressed in future research. On the one hand, this questionnaire has not only made an assessment of the level of agreement with the copier, borrower and criterialist stances possible, but has also provided an analysis of the level of consistency in the responses of the participants. Despite limitations, this has offered information which has been able to be contrasted with pre-service teachers' ideas. On the other hand, as an additional limitation, the internal consistency of two of the scales were particularly low, something that has not only been detected in this study, but in previous ones as well, especially in relation to the copier scale (Mierwald et al., 2018; Miguel-Revilla et al., 2017; Stoel, van Drie, et al., 2017). The fact that certain items of the questionnaire sometimes combine statements about epistemic beliefs about history with a few sporadic references to educational aspects can be hypothesized to be one of the reasons for the consistency issues, although additional research is needed. Additionally, it should also be noted that the use of self-report instruments has been criticized in epistemic cognition research due to concerns regarding their psychometric adequacy which is a reason why a qualitative analysis can be used as a supplementary strategy (Greene & Yu, 2014; Sinatra, 2016).

While this study has allowed for an examination of epistemic cognition in history and made use of specific categories and stances in line with theoretical models such as the ones developed by other researchers (King & Kitchener, 2002; Kuhn et al., 2000; Martens, 2015), it is important to note the limitations of developmental models (Sandoval et al., 2016). Although initially inspired by pre-reflective, quasi-reflective and reflective, or the realist, absolutist, multiplist, and evaluative stages developed by previous researchers, the copier, borrower, and criterialist stances have been of use to assess epistemic cognition in history by focusing on this domain. Moreover, these stances have been a better fit than general categories which is a reason why domain specificity should be taken into consideration, especially when concepts such as authenticity, sourcing or even evidence diverge between experimental science and history (Chinn & Sandoval, 2018). In any case, future research might focus on whether this particular model might be useful for other social sciences, which might share common aims, ideas, and processes.

Despite the limitations, this study has shown that there are noticeable differences between the way primary and secondary education prospective teachers think about history as a discipline, something that affects relevant topics like the nature of history, interpretation, objectivity and the

use of evidence in historical inquiry. As has been established, evidence shows that the way pre-service teachers think about a particular domain may affect how they address a particular subject or discipline in the classrooms, affecting pupils' learning and understanding (Brownlee et al., 2012). In the particular case of history, epistemic beliefs might affect the way historiographical and disciplinary insights are introduced into teaching practices (Peck & Herriot, 2015). The differences found between second-year and third-year primary education trainee teachers also signal that instruction matters, and that epistemic beliefs can transform over time during initial teacher training, even if the way pre-service teachers with different academic backgrounds think about history in different ways.

In this regard, in the future it may be of interest to examine whether a specific instruction during initial teacher training that focuses in history education can help close the gap between trainee teachers without a specific disciplinary background, as the results obtained here suggest. An affirmative answer might inform the orientation of teacher education, and highlight the importance of addressing with pre-service educators how to develop students' historical understanding. Furthermore, it should also be of interest to examine whether the contrasts that can be observed between different groups of prospective teachers does effectively translate into their teaching practices and beliefs about the educational dimension of history.

Future studies might need to analyze additional approaches, including the way historical thinking concepts might be linked with epistemic beliefs about history, or how teachers' epistemological conceptions might be related with first-order knowledge. Teacher training has a fundamental role to play if it is intended for educators to acquire a more nuanced vision compatible with a conception of history as a discipline that can be critically analyzed. This notion might be, precisely, a requirement for teachers if they want to foster historical thinking and approach history from a critical point of view (Seixas, 2017; van Boxtel & van Drie, 2018), and should not be underestimated in order to promote better teaching practices and develop a better understanding among students.

## Declaration of Interest

All of the authors have substantially contributed to the research, and confirm that this manuscript has not been previously published and is not under consideration for publication elsewhere. All authors state that they have approved the final version of this article. Furthermore, there are no conflicts of interest to report.

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## References

- Biesta, G. (2017). Mixing methods in educational research. In R. J. Coe, M. Waring, L. V. Hedges, & J. Arthur (Eds.), *Research methods & methodologies in education* (2nd ed., pp. 159–165). London, UK: SAGE Publications.

- Bråten, I., & Strømsø, H. I. (2010). When law students read multiple documents about global warming: Examining the role of topic-specific beliefs about the nature of knowledge and knowing. *Instructional Science*, 38(6), 635–657. doi:10.1007/s11251-008-9091-4
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. New York, NY: The Guilford Press.
- Brown, T. A., & Moore, M. T. (2012). Confirmatory factor analysis. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling* (pp. 361–379). New York, NY: The Guilford Press.
- Brownlee, J., Schraw, S., & Berthelsen, D. (Eds.). (2012). *Personal epistemology and teacher education*. New York, NY: Routledge. doi:10.4324/9780203806616
- Buehl, M. M., & Alexander, P. A. (2001). Beliefs about academic knowledge. *Educational Psychology Review*, 13(4), 385–418. doi:10.1023/A:1011917914756
- Buehl, M. M., & Fives, H. (2016). The role of epistemic cognition in teacher learning and praxis. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of epistemic cognition* (pp. 247–264). New York, NY: Routledge.
- Chinn, C. A., & Rinehart, R. W. (2016). Epistemic cognition and philosophy: Developing a new framework for epistemic cognition. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of epistemic cognition* (pp. 460–478). New York, NY: Routledge.
- Chinn, C. A., & Sandoval, W. A. (2018). Epistemic cognition and epistemic development. In *International Handbook of the Learning Sciences* (pp. 24–33). New York, NY: Routledge. doi:10.4324/9781315617572-3
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Creswell, J. W. (2014). *Research design. Qualitative, quantitative, and mixed methods approaches* (4th ed.). London, UK: SAGE Publications.
- Evans, R. W. (1990). Teacher conceptions of history revisited: Ideology, curriculum, and student belief. *Theory & Research in Social Education*, 18(2), 101–138. doi:10.1080/00933104.1990.10505608
- Fives, H., Barnes, N., Buehl, M. M., Mascadri, J., & Ziegler, N. (2017). Teachers' epistemic cognition in classroom assessment. *Educational Psychologist*, 52(4), 270–283. doi:10.1080/00461520.2017.1323218
- Gay, L. R., Mills, G. E., & Airasian, P. (2012). *Educational research: Competencies for analysis and applications* (10th ed.). Boston, MA: Pearson.
- Gibbs, G. (2007). *Analyzing qualitative data*. London, UK: SAGE Publications. doi:10.4135/9781849208574
- Greene, J. A., & Yu, S. B. (2014). Modeling and measuring epistemic cognition: A qualitative re-investigation. *Contemporary Educational Psychology*, 39(1), 12–28. doi:10.1016/j.cedpsych.2013.10.002
- Greene, J. A., Sandoval, W. A., & Bråten, I. (Eds.). (2016). *Handbook of epistemic cognition*. New York, NY: Routledge.
- Hofer, B. K. (2006). Beliefs about knowledge and knowing: Integrating domain specificity and domain generality: A response to Muis, Bendixen, and Haerle (2006). *Educational Psychology Review*, 18(1), 67–76. doi:10.1007/s10648-006-9000-9
- Hofer, B. K. (2016). Epistemic cognition as a psychological construct: Advancements and challenges. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of epistemic cognition* (pp. 19–37). New York, NY: Routledge.
- Jenkins, K. (2009). *At the limits of history: Essays on theory and practice*. Abingdon, UK: Routledge.
- Johnston, M., Hipkins, R., & Sheehan, M. (2017). Building epistemic thinking through disciplinary inquiry: Contrasting lessons from history and biology. *Curriculum Matters*, 13, 80–102. doi:10.18296/cm.0020
- Karlsson, K.-G. (2011). Processing time: On the activation and manifestation of historical consciousness. In H. Bjerg, C. Lenz, & E. Thorstensen (Eds.), *Historicizing the uses of the past: Scandinavian perspectives on history culture, historical consciousness and didactics of history related to World War II* (pp. 129–143). Wetzlar, Germany: Transcript.
- King, P. M., & Kitchener, K. S. (2002). The reflective judgment model: Twenty years of research on epistemic cognition. In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (pp. 37–61). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kuhn, D. (1999). A developmental model of critical thinking. *Educational Researcher*, 28(2), 16–25. doi:10.3102/0013189X028002016
- Kuhn, D., Cheney, R., & Weinstock, M. (2000). The development of epistemological understanding. *Cognitive Development*, 15(3), 309–328. doi:10.1016/S0885-2014(00)00030-7
- Lee, P. J., & Shemilt, D. (2003). A scaffold, not a cage: Progression and progression models in history. *Teaching History*, 113, 13–24.
- Lewis, T. F. (2017). Evidence regarding the internal structure: Confirmatory factor analysis. *Measurement and Evaluation in Counseling and Development*, 50(4), 239–247. doi:10.1080/07481756.2017.1336929
- Maggioni, L., Alexander, P. A., & VanSledright, B. A. (2004). At the crossroads: The development of epistemological beliefs and historical thinking. *European Journal of School Psychology*, 2, 169–197.
- Maggioni, L., VanSledright, B. A., & Alexander, P. A. (2009). Walking on the borders: A measure of epistemic cognition in history. *The Journal of Experimental Education*, 77(3), 187–214. doi:10.3200/JEXE.77.3.187-214

- Martens, M. (2015). Students' tacit epistemology in dealing with conflicting historical narratives. In A. Chapman & A. Wilschut (Eds.), *Joined-up history: New directions in history education research* (pp. 211–230). Charlotte, NC: IAP.
- Mierwald, M., Lehmann, T., & Brauch, N. (2018). Zur Veränderung epistemologischer Überzeugungen im Schülerlabor: Authentizität von Lernmaterial als Chance der Entwicklung einer wissenschaftlich angemessenen Überzeugungshaltung im Fach Geschichte? *Unterrichtswissenschaft*, 46(3), 279–297. doi:10.1007/s42010-018-0019-7
- Mierwald, M., Seiffert, J., Lehmann, T., & Brauch, N. (2017). Fragebogen auf dem Prüfstand. Ein Beitrag zur Erforschung und Weiterentwicklung eines bestehenden Instruments zur Erfassung epistemologischer Überzeugungen in der Domäne Geschichte. In M. Waldis & B. Ziegler (Eds.), *Forschungswerkstatt Geschichtsdidaktik 15: Beiträge zur Tagung "Geschichts-Didaktik Empirisch 15"* (pp. 177–190). Bern, Germany: Hep der Bildungsverlag.
- Miguel-Revilla, D., & Fernández Portela, J. (2017). Creencias epistémicas sobre la Geografía y la Historia en la formación inicial del profesorado de Educación Infantil y Primaria. *Didáctica de Las Ciencias Experimentales y Sociales*, 33, 3–20. doi:10.7203/dces.33.10875
- Miguel-Revilla, D., & Sánchez-Agustí, M. (2018). Conciencia histórica y memoria colectiva: Marcos de análisis para la educación histórica. *Revista de Estudios Sociales*, 65, 113–125. doi:10.7440/res65.2018.10
- Miguel-Revilla, D., Carril-Merino, T., & Sánchez-Agustí, M. (2017). Accediendo al pasado: Creencias epistémicas acerca de la Historia en futuros profesores de Ciencias Sociales. *REIDICS. Revista de Investigación En Didáctica de Las Ciencias Sociales*, 1, 86–101. doi:10.17398/2531-0968.01.86
- Muis, K. R., Bendixen, L. D., & Haerle, F. C. (2006). Domain-general and domain-specificity in personal epistemology research: Philosophical and empirical reflections in the development of a theoretical framework. *Educational Psychology Review*, 18(1), 3–54. doi:10.1007/s10648-006-9003-6
- Neuman, W. L. (2007). *Basics of social research. Qualitative and quantitative approaches* (2nd ed.). London, UK: Pearson.
- O'Neill, D. K., Guloy, S., & Sensoy, Ö. (2014). Strengthening methods for assessing students' metahistorical conceptions: Initial development of the historical account differences survey. *The Social Studies*, 105(1), 1–14. doi:10.1080/00377996.2013.763524
- Peck, C., & Herriot, L. (2015). Teachers' beliefs about social studies. In H. Fives & M. Gregoire Gill (Eds.), *International handbook of research on teachers' beliefs* (pp. 387–402). New York, NY: Routledge.
- Perry, W. G. (1970). *Forms of intellectual and ethical development in the college years: A scheme*. New York, NY: Holt, Rinehart, and Winston.
- Sakki, I., & Pirttilä-Backman, A.-M. (2019). Aims in teaching history and their epistemic correlates: A study of history teachers in ten countries. *Pedagogy, Culture & Society*, 27(1), 65–85. doi:10.1080/14681366.2019.1566166
- Sandoval, W. A., Greene, J. A., & Bråten, I. (2016). Understanding and promoting thinking about knowledge: Origins, issues, and future directions of research on epistemic cognition. *Review of Research in Education*, 40(1), 457–496. doi:10.3102/0091732X16669319
- Schommer, M. (1990). Effects of beliefs about the nature of knowledge on comprehension. *Journal of Educational Psychology*, 82(3), 498–504. doi:10.1037/0022-0663.82.3.498
- Schumacker, R. E., & Lomax, R. G. (2016). *A beginner's guide to structural equation modeling* (4th ed.). New York, NY: Routledge.
- Seixas, P. (2017). A model of historical thinking. *Educational Philosophy and Theory*, 49(6), 593–605. doi:10.1080/00131857.2015.1101363
- Shreiner, T. L. (2014). Using historical knowledge to reason about contemporary political issues: An expert–novice study. *Cognition and Instruction*, 32(4), 313–352. doi:10.1080/07370008.2014.948680
- Sinatra, G. M. (2016). Thoughts on knowledge about thinking about knowledge. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of epistemic cognition* (pp. 479–492). New York, NY: Routledge.
- Stoddard, J. D. (2010). The roles of epistemology and ideology in teachers' pedagogy with historical "media." *Teachers and Teaching*, 16(1), 153–171. doi:10.1080/13540600903475694
- Stoel, G. L., Logtenberg, A., Wansink, B., Huijgen, T., van Boxtel, C., & van Drie, J. (2017). Measuring epistemological beliefs in history education: An exploration of naïve and nuanced beliefs. *International Journal of Educational Research*, 83, 120–134. doi:10.1016/j.ijer.2017.03.003
- Stoel, G. L., van Drie, J., & van Boxtel, C. (2017). The effects of explicit teaching of strategies, second-order concepts, and epistemological underpinnings on students' ability to reason causally in history. *Journal of Educational Psychology*, 109(3), 321–337. doi:10.1037/edu0000143
- Tabak, I., Weinstock, M., & Zvilung, H. (2010). Discipline-specific socialization: A comparative study. In *Learning in the Disciplines: Proceedings of the 9th International Conference of the Learning Sciences* (Vol. 1, pp. 842–848). Chicago.
- Tucker, A. (Ed.). (2010). *A companion to the philosophy of history and historiography*. Oxford, UK: Wiley-Blackwell. doi:10.1002/9781444304916

- van Boxtel, C., & van Drie, J. (2018). Historical reasoning: Conceptualizations and educational applications. In S. Alan Metzger & L. M. Harris (Eds.), *The Wiley international handbook of history teaching and learning* (pp. 149–176). New York, NY: Wiley-Blackwell.
- VanSledright, B. A., & Maggioni, L. (2016). Epistemic cognition in history. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of epistemic cognition* (pp. 128–146). New York, NY: Routledge.
- VanSledright, B. A., & Reddy, K. (2014). Changing epistemic beliefs? An exploratory study of cognition among prospective history teachers. *Revista Tempo e Argumento*, 06(11), 28–68. doi:[10.5965/2175180306112014028](https://doi.org/10.5965/2175180306112014028)
- Wansink, B. G. J., Akkerman, S. F., & Wubbels, T. (2016). The certainty paradox of student history teachers: Balancing between historical facts and interpretation. *Teaching and Teacher Education*, 56, 94–105. doi:[10.1016/j.tate.2016.02.005](https://doi.org/10.1016/j.tate.2016.02.005)
- Wellington, J. (2015). *Educational research: Contemporary issues and practical approaches* (2nd ed.). London, UK: Bloomsbury.