

Article

Interdisciplinary Use of Argumentation among Religious Education and Philosophy Teachers-in-Training

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Abstract: Using document analysis, religion and philosophy pre-service teachers' reflections on argumentation and in-class argumentation practices, which were received online, during the *Special Teaching Methods* course were examined. These documents included reflections of pre-service teachers on argumentation and in-class argumentation practices. Findings emerged in three dimensions: (a) the benefits of the use of argumentation (awareness and motivation skills, teaching via argumentation-based instruction), (b) difficulties in using argumentation (learning environment and motivational factors), and (c) suggestions, in which themes and codes were created in light of such dimensions. The acquired dimension of the use of argumentation consists of the themes of awareness, motivation, skills, and teaching. With regards to suggestions that can be drawn from this document analysis, both religious education and philosophy pre-service teachers stated that preliminary preparations should be made to apply the argumentation technique to the teaching process. The results offer insight on the integration of this technique into teaching as an instructional tool. As an important epistemological exercise, argumentation can be attained as a skill set during formal school education which may facilitate the integration of knowledge.

Keywords: argumentation; argumentation-based instruction; Socratic questioning; religious education; philosophy education; teachers-in-training; pre-service teachers



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1. Introduction

What is argumentation? Argumentation is a method to justify claims using reason and evidence (Erduran 2020). This instructional method has increasingly been gathering educators' attention from a wide spectrum of educational fields. Toulmin's (1958) model postulates that the structure of arguments encompasses elements such as claims, data-driven information/evidence-based results, warranties, qualifications, and refutations.

It is contested that argumentation could have both general and discipline-focused components, differing according to the nature of argumentation and the type of evidence that is employed (Wolfe 2011). While argumentation is thought of as simply the justification of assertions with proof and causes, it is acknowledged that structuring and criticizing an argument among other disciplines involves somewhat different, albeit complementary, sets of skills (Osborne et al. 2016). Components in Toulmin's Argument Pattern (Toulmin 1958) interconnect a set of sequential claims that are comprised of (a) data that support the claim; (b) warrants that link data and the claim; (c) backings that reinforce the warrants; and (d) refutations that indicate when the claim may not be accurate (Erduran et al. 2004). Argumentation is an important epistemological exercise, which can be attained as a skill set through formal school education (Wolfe 2011). The epistemology of a subject being taught is presented through argumentation, thereby facilitating the integration of relevant knowledge that may reasonably promote assertions within the discipline. In this sense, it is an important cognitive component with regards to structuring and facilitating procedures

within the practices of a discipline, in generating, employing, and implementing substantial subject-related information. [Guilfoyle et al. \(2021a\)](#) contend that the practice of argumentation in both science and religious education must be considered before application in an interdisciplinary context. Thus, it pays to examine its use in both philosophy and religious education among teachers currently in training.

Argumentation refers to the justification of assertions by applying proof and explanations ([Toulmin 1958](#)). It is known to be an important skill that is taught in school, not only for the development of educated individuals' critical thinking skills, but also for a deeper understanding of the discipline specialized through graduate-level training for prospective teachers (e.g., the [European Union 2006](#); [Monte-Sano 2016](#)). In such contexts, concerns should be directed to focus on developing students' argumentation both within and across subject/discipline areas, including disciplines that involve teaching moral values and ethical matters. Evidently, students must learn argumentation skills, while educators and researchers should examine how these skills are being thought and evaluated ([Duschl and Osborne 2002](#)). Argumentation has been widely taught in various settings ([Rapanta et al. 2013](#)), however, the research is limited on how to evaluate the competence of teachers-in-training in terms of its use.

Such a Socratic form of inquiry requires explanations supported by evidence and is actively applied to physics, chemistry, biology, and other subjects in the scientific tradition. However, this is less of a given in terms of the teaching of religion and philosophy, despite an active and ongoing desire on the part of educators to promulgate such notions. Thanks to the questioning and discussion techniques used by the document sample from these fields, people have become versed in having a higher cognitive ability and comprehension, activating their quest, along with the improvement of probing more generally. Students at high school level (N = 45) revealed that they found it easier to generate arguments about the scientific side of the issue ([Basel et al. 2014](#)). Especially when teaching controversial issues, as in this document analysis, it could help teach the procedures to facilitate argumentation effectively even with the challenging matters.

The pre-service teachers involved in the study reported an enhanced acknowledgment of the importance of supporting arguments with scientific data and an incline in prejudice, testifying to an increase in self-confidence among themselves and students. Furthermore, in the document analyzed, the pre-service teachers concluded that this technique aided their active participation and improved the permanence of what was learned. These findings emerge to support the hypothesis that discussion techniques such as argumentation and Socratic inquiry allow debate to have an important place in teaching. With such techniques lodged into their subconscious, it is thus considered that a student will gather evidence to back up a more meaningful learning process, which does not rely on memorization (e.g., see [Beck 2011](#); [Corey 2016](#)).

The current literature indicates that religious education rests on various multicultural aspects by its very nature, given it is principally concerned with studying beliefs and worldviews independently using dialog and conversation, rather than representing an introduction to a particular belief system ([Jackson 2015](#); [Jawoniyi 2015](#)). [Jawoniyi \(2015\)](#) debated how religious education in state-funded K-12 schools could jeopardize the realization of liberal educational goals. The child's autonomy is recognized for them to attain religious material critically, logically, and cognitively rather than professing them into a particular belief system, which is a central premise in religious education regarding liberal democracies, particularly in western Europe. On behalf of the Council of Europe, signposts were put together by [Jackson \(2015\)](#), focusing on '*Policy and Practice for Teaching about Religions and Non-religious World Views in Intercultural Education*' to offer to policy makers, K-12 institutions, and teacher trainers in the member countries, along with others who aspire to use it ([Jackson 2015](#)). In order to contribute to intercultural education in European schools, an important recommendation is made from the Committee of Ministers of the Council of Europe (Recommendation CM/Rec(2008)12) on the dimension of religions and non-religious clarifying beliefs about the nature and aims of such a form of instruc-

tion. Usually, religious education in schools is positioned as a multidisciplinary subject area that rests on various related disciplines, such as philosophy, theology, sociology, and psychology (Freathy et al. 2017). Education is a holistic endeavor, which is expected to embrace effective methods for teaching a wide range of topics, which shed lights to why both religious and philosophy education teachers' views and opinions on argumentation undoubtedly overlap.

Understanding prospective teachers' views of argumentation (e.g., Zohar and Schwartz 2005) could provide insights into how their reflections manifest in their appropriation of heuristic pedagogical strategies in cross-curricular contexts. Guilfoyle et al. (2021b)'s study with 16 science and 17 religious teachers highlighted that science and religious education teachers do not always view their subjects as being in conflict, contrary to common perceptions evidenced in other studies (e.g., Mansour 2015). Therefore, high stakes testing that demands only limited discipline-based knowledge that stops short of employing the culture of gathering facts does not facilitate scientific inquiry. Conversely, it can be asserted that the method of scientific inquiry involves testing assumptions that are not value-free, but rather, value-laden (McDonald and McRobbie 2012). How different (graduate training) disciplines for teachers-in-training are influenced by their reasoning on everyday problems involves methodological analysis and interpretation (Nisbett et al. 1987). Specifically, the kind of reasoning and justification used in such inquiries influences understandings of how to arrive at a generalization using a sample of data that may not be sufficiently representative. In addition, one's thinking style is closely related to their way of processing new information. For example, those with an analytic thinking style tend to focus on the properties of objects regardless of their surrounding context (Nisbett et al. 1987). Conversely, those geared toward a more holistic thinking style are inclined to focus on overall contexts, specifically on how things relate to each other (Nisbett 2003; Nisbett et al. 2001; Norenzayan and Nisbett 2000). Another important way one perceives information is through schemes. Schemes provide mental structures that manage our knowledge about the world as they influence the information noticed, deliberated, and remembered (Heine et al. 2006; Markus 1977).

1.1. Theoretical Background

As an instructional technique, the theoretical framing of the use of argumentation can be traced back to the prominent Greek philosopher, Socrates (470–399 BC). Socratic inquiry influenced western philosophy in terms of the employment of its three main elements in debate, namely, “systematic questioning, inductive reasoning, and universal definitions” (Overholser 1993, p. 67). Furthermore, the theoretical background of the argumentation technique could be linked to the views of early educational thinkers, such as Rousseau, Pestalozzi, and Herbart.

As a pioneer in child-focused education, Jean-Jacques Rousseau forwarded the notion that adults ought to distance themselves from their role while educating. The development of the secular mandate in shaping the schooling experience and instructional methodology is worth reviewing in this regard (Butts 1955). Rousseau presented this pedagogical approach as a solution to the wickedness of “civilized” humanity (Hlebowitsh 2001). In forwarding his theory, with reference to the use of the argumentation technique, Rousseau envisioned active interactions between the child and adult. In essence, his doctrine of “original goodness” presumed that children are born “good,” but that society corrupts them (Rousseau 1979). An educational agenda undermines the child's learning process and, therefore, must be avoided in lieu of a free learning environment since schools tend to upend the possibility of a natural learning process. In argumentation, education is required to facilitate instructional processes whereby students are provided opportunities to explore interdisciplinary links (Erduran 2020; Duschl and Osborne 2002). The purpose of education can be theoretically achieved, therefore, it is hypothesized, by using argumentation in line with child-centered approaches—the aim, in Rousseau's view, being the lessening of social inequality and heterogeneity. Through the use of unconstrained natural process facilitation,

the child is at the center of education, whereas in argumentation, the process facilitation is what matters. The education of children must be conducive to growth and progress under their own initiative, will, and interests. The child was at the core of Rousseau's ideas, in contrast to that of the church or the state (Hlebowitsh 2001), which is in harmony with the ideas presented in this paper since the use of argumentation promotes the critical and rational understanding of religion.

A European reformer in pedagogical practice, Johann Heinrich Pestalozzi, was influenced by Rousseau's views on pedagogy and teaching. Pestalozzi challenged the prominence of the colonial rote-and-recitation style in the late 18th century, believing that teaching should rather be based on a child's natural inclinations. In his view, teaching/learning ought to steer away from acts of memorization and recital, in preference for acts of sense, interpretation, observation, and questioning in line with the principles of psychology (Hlebowitsh 2001). This perspective on learning had specific implications for the school curriculum in teaching science, with the core of argumentation applied in light of the components of Toulmin's (1958) Argument Pattern, which required the interconnection of a set of sequential claims (Erduran et al. 2004). Thanks to Johann Heinrich Pestalozzi (1894), schools now imbibe a more instructional tradition that distances itself from rote learning as claimed in the book *How Gertrude Teaches Her Children*.

As part of his *Cultural Epoch Theory*, German philosophy professor Johann Herbart constructed a teaching method that developed in line with the evolutionary stages of human culture (Herbart 1901). Herbart's ideas emphasized the importance of interdisciplinary knowledge in education, since he believed education was a way to acquire social and moral development, akin to the purpose of argumentation used in this study. Herbart was fond of Pestalozzi's ideas, especially in his rejection of the rote-and-recitation approach to instruction (Hlebowitsh 2001) and showed a similar interest in finding ways to organize knowledge, focusing on finding focal points for concentration or integration between diverse disciplines so as to conjure a circle of thought that knits all parts tight (Herbart 1901).

The interdisciplinary use of argumentation among religious education and philosophy pre-service teachers is an effective method—especially for students in today's multicultural communities, which require diverse educational needs. As an instructional technique, its premises are found among early western philosophers as a means of lessening social inequality and heterogeneity in religious and philosophy education. As stated above, Toulmin's (1958, 2003) model assumes that argumentation incorporates components such as claims, data-driven information/evidence-based results, warranties, qualifications, and refutations. The use of argumentation prevents us from making logical errors, while drawing reasonable connections among data, reasons, and evidence. Using warrant-establishing arguments, it is possible to make some crucial distinctions. Toulmin (2003) asserted that "dividing arguments into analytic and substantial is not the same" (p. 126), arguing that they can be inferred "only possibly" or "with probability" from conclusions made as necessarily or definitely when they are divided into pieces (p. 126).

Toulmin (2003) declared the difference among theories resembles traditional philosophical debates with their clear charms, and likewise irrefutable flaws. Regarding the preliminary premise, also recognized by Aristotle, Toulmin asserted, "that logic is somehow concerned with the ways in which men think, argue and infer. Yet to turn logic into a branch of psychology, even into the psychopathology of cognition, certainly makes it too subjective and ties it too closely to questions about people's actual habits of inference." (p. 5) Citing Carnap, "Still clinging to the belief that there must somehow be a close relation between logic and thinking, they say that logic is concerned with correct or rational thinking." (Toulmin 2003, p. 80). Recognizing that logic and thought are not the same thing, it is evident that the use of the argumentation technique would have numerous benefits in instruction, as presented in this study. Using argumentation in a variety of diverse fields, such as moral, mathematics, or psychology, aids rationalizing the steps from a datum to a conclusion (Toulmin 2003), backing its use with religion and philosophy pre-service

teachers. This in turn helps minimize social inequality and heterogeneity among students using a specific instructional technique facilitated in religious and philosophy education.

1.2. Importance of the Study

This paper investigates pre-service teachers' understanding, perceptions, and skills in using argumentation regarding the advantages and disadvantages of integrating this method into teaching. When teachers-in-training are asked to carry out a task related to their practice and reflect on this undertaking, the task conceptualization is rooted in the context of their particular discipline (e.g., religious education and philosophy). Beyond this, many issues encountered today by teachers-in-training are not subject-specific and should not be constrained to a relevant discipline; in addition, for a broad comprehension they require an interdisciplinary approach which integrates information from a variety of sources (Crujeiras-Pérez and Jiménez-Aleixandre 2019). The reflections of each of these groups of students-in-training are expected to be cultivated inherent to their subject interest. However, when they form reflections regarding the structure around argumentation, the task construction procedure involves some similarities being made between task performances—which are embedded as typical arguments in these two contexts. The results reveal a number of challenges and opportunities that point to useful insights and implications for ways to support the use of argumentation among teachers-in-training, i.e., beyond the curriculum of subject-related tasks.

Argumentation enhances learning experience. Concentrating on its use can be beneficial, as it allows for consistency across the curriculum, underlining the link between various disciplines. In this sense, argumentation can be viewed as a boundary-crossing function. Using argumentation during the process of learning a subject can elucidate its uniqueness with regards to how knowledge is justified and what makes up valid evidence. Such skills can be implemented beyond the limits of school education, such techniques enabling a degree of consistency across the course of instruction. Skills that are transferable between disciplines allow for a more multifaceted understanding of arguments necessary in daily life, where matters require the considering of information from multiple sources, whether regarding science-related or ethical matters (Levinson 2010).

The interdisciplinary use of argumentation among religious education and philosophy teachers-in-training facilitates dialogue and conversations related to what underlies students' thoughts and behaviors in terms of curricular content. The integration of knowledge is a principal goal in teaching. While on the one hand, liberal worldviews advocate for individual rights, which promote diversity, on the other hand, the continuing claims of religious diversities create dichotomy. Multicultural societies face challenges in bringing together multiple cultural, moral, and religious positions (Latif 2022). Raising future generations with methods of inquiry, such as argumentation and/or Socratic Questioning, will equip them with such skills that will enhance their worldview. Meanwhile, attaining critical perspectives counts the viewpoint of another person as consistent with constructivist paradigms, appreciating both hermeneutics and dialectics methods (Heppner et al. 2008). To test the thoughts, the process of learning may be complemented by behavioral exercises consistent (and allowing for utilizing guided discovery) with the aforementioned approaches in an instructional inquiry, which is heuristic and consistent with the procedures of Socratic inquiry techniques (Beck 2011).

Some teachers-in-training noted argumentation as a process not unlike the Socratic Questioning (SQ) method, which emphasizes higher level cognitive processes. The Socratic Questioning procedure focuses on developing independent problem-solving skills in a therapeutic client, for instance, with the questioning process emphasizing a collaborative interaction between therapist and client. SQ can be used to facilitate self-initiated discovery, helping clients realize the answers they already possess. Starting from practicum, a teacher-in-training can soon expect to encounter these questions with their secondary level students (i.e., from religious education, philosophy, and science classes).

The curricular standards of each discipline require teaching credentials with a degree-specific content and may potentially present limitations to cross-disciplinary associations in their method (Erduran 2020). Toulmin's model of argumentation (Toulmin 1958) has influenced research across different disciplines in education. Consequently, the aim of this study is to examine the reflections of religion and philosophy teacher candidates on argumentation and in-class argumentation practices through document analysis.

2. Findings

Using document analysis, religion and philosophy pre-service teachers' reflections on argumentation and in practicum-class argumentation practices, which were received as an online electronic portfolio during the *Special Teaching Methods* course, were examined. These documents included reflections of pre-service teachers on argumentation and in-class argumentation practices. Findings emerged in three dimensions: (a) the benefits of the use of argumentation (awareness and motivation skills, teaching via argumentation-based instruction), (b) difficulties in using argumentation (Learning Environment and Motivational Factors), and (c) suggestions, in which themes and codes were created in light of such dimensions.

The argument levels established by the pre-service teachers, who had newly been introduced to the argumentation technique at this point, revealed growth both in their understanding of the concept and skill use. The levels of argument, which previously consisted of only claims and justifications, subsequently included supporting evidence and refutations. Some examples of arguments put forward by pre-service teachers in electronic portfolios are given below, using pseudonyms.

Examples of Argument:

Irem: You shouldn't drink water standing up.

Zeynep: Yes. You shouldn't drink water standing up.

Elif: I don't agree. It's okay to drink water standing up.

Examples of Argument:

Fatma: I think it's unhealthy to drink water standing up.

Mert: For me, there is no difference between drinking water standing or sitting.

This is the first time I've heard of such a thing.

Doğan: You're right, Fatma. I also read once in a magazine that you shouldn't drink water standing up. Water isn't good for your digestion when standing.

Examples of Argument:

Gülây: I've heard it's unhealthy to drink water standing up.

Zeynep: It doesn't seem to make sense to me. I don't think it's unhealthy. How could water be any harm to a person's body? Our body is mostly made up of water, after all.

Emel: Why not? Given the various medicinal products or healthy foods we consume in daily life can be harmful if used in the wrong way or taken in excess can be harmful to us, why then not water, too? Anything not digested properly can cause problems. Our parents often warned the very same. Drinking water while standing is something that should be avoided/is considered *makruh*.

Examples of Argument:

Yasin: It's unhealthy to drink water standing up. It's considered *makruh* in our religion.

Fadime: This issue is not conclusive. What kind of harm could it cause?

Yasin: Society has warned us against this for centuries. If it wasn't harmful, then why would the issue have remained in discussion for so long?

Melih: Yes, it's absolutely harmful to drink water while standing up, because if you drink it sitting down, it allows the water to gather in your belly. As it sits

there, it cleanses the stomach of microbes ready to then be ejected by the body. This way, we can protect ourselves from various illnesses. It’s exactly for this reason that it is considered *makruh* in our religion.

Examples of Argument:

Fatma: Guys, we should drink water while standing up. By telling us that we should drink water while sitting, the Prophet forbade us from doing so. He made this so by pointing it out as an issue.

Hasan: Those who believe it to be harmful must sit while drinking in order to make sure they are not harmed.

Zeynep: You can drink water standing up, because we don’t always have time to sit down—plus, it might not exactly be appropriate to sit down in every circumstance. You could be in hospital, for instance, or even circumambulating the *Ka’aba*. What’s more, I’ve drunk water standing up for years and it has never caused me any problems and no-one I know has flagged this up as a problem—no-one I know has suffered because of it, either.

Fikret: The body is a gift bestowed on humans. We have a duty to protect it from all forms of harm. When we drink standing up, the water goes straight to the bowels and is prevented from gathering in the stomach, thus preventing any benefit. When drunk while seated, it gathers in the stomach and kills microbes with a tenth of the amount of water, then moving into the gut. This is how it helps protect us from illnesses, otherwise the water gathers in our intestines and causes acidity, thereby slowing down and damaging the digestive system. You might not see the effects at first, but over time it could cause a number of illnesses to gather in the body. On the other hand, if we drink while seated in accordance with what was ordained, we might prevent the onset of a number of illnesses—including cholera. Given this, those who consume other kinds of drinks standing up are likely at even more risk of harm. This is why the Prophet insisted this of us, in one *hadith* saying: **“None of you should drink water while standing; and if anyone forgets, they must vomit.”**

The benefits, challenges and suggestions made by the teaching candidates in the reports offered in their reflection papers regarding the in-class application of argumentation were qualified into three dimensions. A number of themes and codes were gathered as subheadings under these three categories.

2.1. Dimension I: Benefits of Using Argumentation

In terms of the benefits of argumentation, the themes of skills, teaching, awareness, and motivation were offered. Frequency and percentage values of codes are given under “Benefits of Using Argumentation” dimension in Table 1 below.

Table 1. Themes and codes under “Benefits of Using Argumentation” dimension.

Benefits of Using Argumentation	f	%
AWARENESS		
Listening to everyone with respect	49	49
The necessity of respecting all ideas—positive/negative		
The necessity of questioning, not accepting everything as it is	44	44
The necessity of looking at issues from various approaches	32	32
The necessity of backing up claims with scientific data	28	28
The idea that science and religion back up one-another	28	28
The recognition of those who believe without questioning	22	22
To avoid being prejudice	17	17
The necessity of asking for valid questions during a debate	14	14

Table 1. Cont.

Benefits of Using Argumentation	f	%
MOTIVATION		
Self-confidence	50	50
The joy of a class	34	34
The ability to express one's opinion in a relaxed environment	29	29
The feeling of valuing opinions	23	23
SKILLS		
The skills and ethics of debate	54	54
The development of practical thought and ability to conclude on issues	53	53
Inquiry skills	52	52
The use of the full component of argumentation	51	51
The ability to communicate	47	47
The ability to problem-solve (in daily life)	42	42
The development of higher order thinking skills	36	36
Critical thought	35	35
Scientific thought	31	31
Skills in aware thought	28	28
Ability to draw cause and effect relationship	27	27
Ability to think deep, making analysis and synthesis	24	24
TEACHING		
Ability to teach meaningfully	63	63
Classes in which students actively participate	36	36
Ability to dispel misconceptions	33	33
Ability to guide so as to increase curiosity	28	28
To learn new scientific information	25	25
Science literacy	24	24
Ability to hold opinions positively towards science	16	16

Skills, teaching, awareness, and motivation themes, as in the following subheadings below, delineate the overall pre-service teachers' assessments of argumentation and the use of argumentation.

2.1.1. Theme: Awareness

The following opinions emerged as prevalent under the theme of awareness. Most of the pre-service religion and philosophy teachers-in-training stated that they appreciated the value of inquiry process during argumentation, which enhanced their respect for diverse perspectives and opinions. In addition, they reported that the argumentation technique helped them realize the necessity of avoiding prejudice, approaching problems from a multi-faceted perspective, acquiring discussion morality, asking appropriate questions during the discussion process, and supporting their claim. More pointedly, pre-service religious education teachers stated that they realized that religion and science were able to support one another. Certain pre-service teachers also noticed that there were many individuals who believed without questioning and criticizing. Moreover, they realized that much misinformation remained, which they uncovered thanks to the technique. The subsequent responses below provide qualitative support for the codes offered above.

Pre-service teacher 45: To put it bluntly, the everyday statements we make in our daily lives are put out there without standing up at all to the argumentation method. Our conversations are full of heard rumors and the most baseless of refutations—even in the simplest of claims. Even in matters that require high expertise, we think so much of ourselves that we push forward with the confidence of an expert. This is a great cause of information pollution and causes false narratives to spread from one person to another. This is even evident in the way that certain so-called experts misinform us. I find the argumentation method to be most useful in its ability to break this cycle. Although it may

be difficult, I find the argumentation method most satisfactory for bringing us to the right conclusion. That is because it forces us to find supporting arguments for even the most basic of claims—thus, it is necessary, naturally, in the process of research and investigation. It is only through this method that we find ourselves forced to process and learn the proofs of even the most basic of claims.

Pre-service teacher 70: This method taught me to cross the limits of my own opinions and try to approach my ideas in a natural way. I also think it developed my sense of empathy.

Pre-service teacher 35: Furthermore, it helped me rise above my own understandings and approach everyday events in a different way.

Pre-service teacher 85: Thanks to this technique, I was able to appreciate the sheer volume of information pollution out there and the number of people who believe in it. People simply believe in certain things without resources of scientific reason—they fall for false information without questioning, criticizing, or applying reason or knowledge. I enter dialogue with various people over the course of any given day and fail to notice certain things, but now I question the validity of certain ideas or concepts that are being explained to me and make comments and defenses accordingly.

Pre-service teacher 13: Thanks to this technique, I began to research more to refine better quality arguments, make better commentaries on religious and scientific information and better understand that religion and science do not conflict with one another, but rather support each other. I feel this has made my interpretations more convincing.

Pre-service teacher 65: To be honest, before learning the argumentation method, my biggest error was to speak with bias. It is such a simple way to realize the false nature of such understandings that are made by not just me, but thousands of others. It is not right to purely chalk up nice things on a board when it is possible to right assumptions that we may not wish to believe, serve knowledge by asking the right questions and, of course, rest arguments on proven evidence.

Pre-service teacher 37: Those of a non-Islamic religious orientation are exempt from attending the religious education course. My school is multicultural, with Christian, Jewish, and many religious faiths coexisting. We have Russian students, who are exempt from this course, meaning that they do not have to take religious education at all. In our classes, we strive to teach tolerance and instill goodness at the students' core. We do this by giving examples from the lives of all of our prophets (e.g., Moses, Jesus, David, Joseph) and offering good moral stories. I approach our students with different religious beliefs with tolerance. When we talk about the prophets, we give examples of their own open-mindedness—leading to many Russian students voluntarily wanting to attend my class, remarking on how wonderful our prophet and religion were. Thanks to the argumentation technique, I think I can make them realize the necessity of refusing to accept all as it appears and the necessity of questioning, listening to everyone with respect, and respecting all positive and negative opinions. In this way, I think that I can count students from different faiths and cultures to be educated together in the tolerance of religious education.

Pre-service teacher 93: I have understood how important the active learning techniques that we learned in this course are in teaching religious education. You (indicating the professor) always emphasized that we should move away from rote learning in our lesson and that we should encourage students to learn by making meaningful connections. I have realized how important these techniques are (i.e., Inquiry and Argumentation) in that regard.

When information is offered plainly without using discussion techniques such as argumentation in religious education, students seem to stick to only one truth. However, owing to discussion techniques such as argumentation, students learn about religious education without memorizing, but by believing what they find as a result of the evidence they have gathered and debated between themselves. Consequently, this method prevents them from being bias.

2.1.2. Theme: Motivation

In terms of the theme of motivation, nearly all pre-service religious education and philosophy teachers claimed that the argumentation method had increased their self-confidence, conviction, and ability to explain ideas in a relaxed way. Similarly, they claimed that the technique had made classes more enjoyable and made ideas and opinions feel more valuable and positive.

Pre-service teacher 53: The argumentation method has also increased my self-confidence. I can now—not unconsciously, but intentionally—develop ideas in a more relaxed and bold way. I think this technique will help me develop further.

Pre-service teacher 68: It increases students' awareness and self-confidence. They can explain what they have learned better and have less difficulty challenging false notions. The technique makes for more enjoyable classes in a scientific environment.

Pre-service teacher 73: The argumentation technique has made for an environment in which students' comments and views are considered more valuable and in which they can express their ideas with more confidence in a relaxed way.

2.1.3. Theme: Skills

In terms of the theme of skills, most of the pre-service religious education and philosophy teachers involved in the study reported a development in the observance of ethics and quality of debate, and an improvement in research, cognitive skills, the use of effective communication, and the ability to solve problems faced in daily life. Furthermore, the participants reported improvements in thinking, critical thought, conscious cognizance, scientific approach, the ability to link cause and effect, and skills in analysis and synthesis. Below are a number of comments that support these findings.

Pre-service teacher 18: We are now much more careful when conveying religious matters. The technique has enabled us to gain a broader perspective, giving us the opportunity to research matters we are unfamiliar with and thus helping us develop ourselves. We have gained the skill of not merely accepting theories right away but researching and questioning them. The technique has taught better debating skills and respect for human values.

Pre-service teacher 42: The argumentation technique has benefitted the students, allowing them to better research, question, critique, and solve problems, come to conclusions using scientific methods, and gain more analytical and thoughtful perspectives. The theory has made students more geared toward research, more motivated, and helped them gain more scientific processing skills, increasing their ability to test, observe and express themselves better. They have also gained abilities such as respecting countering opinions and adjusting ideas in light of false notions. The students can now better express their ideas.

Pre-service teacher 22: This technique has a positive effect on thinking skills, contributing to problem-solving. It teaches one to respect different opinions and develops one's talent for examination. It also has a positive effect on one's ability to express oneself and to consider ideas. In terms of its social effect, it helps one to take quicker and more effective decisions. It also makes education and the process of understanding various issues more pleasant.

Pre-service teacher 61: Since learning the argumentation method, I have given more attention to the explanations, supporting arguments, and refutations when watching various programs. It has pleased me to note how much better the students are at understanding the concepts I teach in class, by using various supporting arguments and components.

Pre-service teacher 52: I have learned how to transmit the knowledge of things I know to be true and which I have to explain to students in a far more convincing way, within a logical framework, highlighting differing opinions, reasons, and findings. In this sense, it can be said that this is an effective means of disseminating correct information.

2.1.4. Theme: Teaching

In terms of the teaching theme, most of the pre-service religious education and philosophy teachers included in the study found that the argumentation method meant for

more fruitful classes involving greater student participation, with a more meaningful and conclusive learning experience, dispelling false narratives and increasing curiosity, while contributing to the development of a positive attitude towards the learning and subject literacy.

Pre-service teacher 25: In terms of claims, counterclaims, and the varying degrees of strength of the supporting arguments, the quality of understanding regarding the topics I work on has increased and this has had a lasting effect on my ability to teach.

Pre-service teacher 38: It engages students and helps them to think by involving various activities, visuals, and debates in the learning process, in lieu of the traditional rote learning method. I think this method helps create a learning environment in which students form questions and claims, backing up the claims with supporting evidence that rests on research and investigation. This approach increases student involvement in the learning process, thereby making for a more active learning environment. These kinds of classes are very important for me as someone textual, who relies on memorization. This is because lessons taught by rote-learning can be largely forgotten by students once they have left the classroom.

Pre-service teacher 5: It allows students to have a lasting, conceptual understanding of an idea. Just as it has made for more fruitful learning, it has increased student participation.

Pre-service teacher 93: Just as it has made for more fruitful learning, it has increased student participation. It has also developed students’ awareness and self-confidence. They can better explain what they have learned and have less difficulty in dispelling false notions. New information is learned in class by virtue of a more scientific learning environment.

Pre-service teacher 90: In terms of the advantages the method offers to students, it helps nurture their investigative nature—developing their creative thinking in line with scientific understanding. As I said, the ninth-grade students at the high school I am training at have good media literacy, yet I realized that the argumentation technique also increased their scientific literacy. The method encourages thought and the examination and critique of issues that crop up in daily life.

2.2. Dimension II: Difficulties in Using Argumentation

Difficulties that were found in the use of the argumentation technique have been examined under the theme of the learning environment and motivational factors. Frequency and percentage values of codes are given under “Difficulties in Using Argumentation” dimension can be viewed in Table 2 below.

Table 2. Themes and codes under “Difficulties in Using Argumentation” dimension.

Difficulties in Using Argumentation	f	%
LEARNING ENVIRONMENT		
Topic variance	29	29
Crowded groups	24	24
Discipline issues	22	22
Absence of prior knowledge	22	22
Preparedness	21	21
Duration	21	21
MOTIVATIONAL FACTORS		
Desire to be proven correct	40	40
Lack of self-confidence	31	31

Most of the pre-service religious education and philosophy teachers in the study found a number of issues could arise using the technique in terms of the absence of prior knowledge, preparedness, the potential for digression, and discipline issues depending on the duration of classes and group size.

Pre-service teacher 20: Furthermore, discipline issues could arise due to the students’ lack of knowledge of the culture of debate (asking before speaking, speaking in turn, etc.).

Pre-service teacher 80: As this is a student-oriented method, it was difficult to employ in larger classes. It was tough to evaluate and debate each argument.

Pre-service teacher 65: Students who had not attained sufficient knowledge on an issue, or who had come unprepared, found the alternative views of other students to be overwhelming. This could have a detrimental effect on the learning process.

Pre-service teacher 70: I saw many potential benefits lost on students with less prior knowledge of an issue being debated. I felt that even when false narratives were being put forth in order to win an argument, certain students could get offended. I think that by using false or sometimes irrelevant arguments the message I sought to get across could get lost.

Pre-service teacher 55: There was not enough time, in crowded classes, to guide students who lacked knowledge of the rules of debate or who had inadequate knowledge. There were also issues that resulted from students aiming to be proven right, rather than get to the truth of a matter, during debate.

Pre-service teacher 10: As objective conclusions cannot be drawn from evaluations of a claim based on personal belief, debate can deviate from the main goal of argumentation. For this reason, I think personal beliefs and opinions should be maintained as neutral.

Pre-service teacher 71: The justification of a claim, and the backing up of these claims with proof, is a requirement for proving anything as “true.” When it came to face-to-face debate, the fact that these justifications remained ungrounded, and arguments were unprepared meant that many times the main subject of debate was deviated from.

Pre-service teacher 56: Without sufficient academic or scientific knowledge, one can suffer from such issues as a loss of self-confidence, inability to express one’s thoughts, or contradicting one’s argument and arriving at false conclusions.

Pre-service teacher 72: Classes have a certain number of students who lack self-confidence or who could be considered shy. In classes that employ the argumentation method, these students encounter difficulty and are not willing to contribute with questions.

PT 18: For instance, when it comes to a discussion in which we have a conducive environment, whereby it might be possible to take an issue to heart, the debate can spill over from the central issue and render the argument into a battle for victory. This makes it difficult to gain the spiritual benefit of coming to a truthful conclusion. Thereby, a good-willed discussion can be sidelined by prejudice.

In terms of Motivational Factors, the pre-service religious education and philosophy teachers in the study reported that the argumentation technique could lead to issues arising from students’ anticipation of having their opinions refuted, as well as a lack of knowledge, an inability to express themselves or issues arising from a sense of ego and the desire to be proven right.

2.3. Dimension III: Suggestions

Teachers’ guidance appears crucial in terms of the application of the argumentation technique. Both pre-service religious education and philosophy teachers emphasized the role of preliminary preparation in the teaching process when using the method. The pre-service teachers commented that they expected the negative aspects of the technique would inevitably decrease with guidance. The better this process is directed, the less time would be spent reducing its negative aspects when facilitating the procedure. Frequency and percentage values of codes are given under “Suggestion” dimension can be viewed in Table 3 below.

Table 3. Suggestions.

SUGGESTIONS	f	%
A teacher can only be as good as their ability to be a guide	16	16
Preparation is a must	18	18
A teacher must advance themselves	18	18

Pre-service teacher 28: When applying the argumentation method, someone is needed to guide the exchange of knowledge. With this in mind, the administration of the class can prove difficult if the teacher aims to launch or manage the debate without prior preparation or knowledge. When the teacher has inadequate knowledge of the issue, the ability to manage the debate is weakened.

Pre-service teacher 86: By ensuring the necessary groundwork, a teacher can help ensure the students can express their ideas well, support their arguments and develop arguments that may dispel those of their opponents within a dialogue.

Pre-service teacher 71: At this point, a teacher should take care of a certain number of points. Before the teaching process is launched, the teacher should ensure that the students have sufficient information about the topic in question to help facilitate the debate. It allows for a more fruitful debate and increases interactions between students to manage the class so that each one has a chance to speak.

Pre-service teacher 26: As teaching candidates, we must develop our skills in the best way by using such techniques in the best possible way.

In the documents analyzed, the reflections of one teaching candidate regarding the application of the method in practicum classes can be found below.

Although debate is conducted often in religious education classes, I had not previously encountered this concept as a teaching method. However, I say that having applied the method I believe it to have many benefits. Before using the argumentation method, I always valued the students' comments and perspectives, taking care to nurture an environment in which they could express themselves with ease and would remind them to respect each other's views and ensure their debates did not erupt into conflict. I would try to encourage students to participate in debate and come forth with quality arguments.

The aim of applying the argumentation method in the teaching of religious studies was to support students in providing proof for their claims, respecting the opinions of others while being able to defend their own and coming up with refutable and quality arguments. When about to apply the argumentation method, I tried to choose a suitable profit and when presenting the idea, aimed to explain the steps that needed to be taken. I instructed the students that the counterclaim ought to be relevant, with supporting arguments, and refutational. I argued that if these elements were not observed, then the debate would dissolve into nothing and that valid arguments must be constructed with a scientific perspective. Having considered that without the right environment, students would shy away from debate and perhaps fail to bring their opinions to the table, I aimed to ensure the right setting was achieved—as result, the class was fun and engaging, in terms of how the students felt and what was gained from the method.

Since the application of the method, the students say they always question if they can back up a claim before putting one forth, wonder if the argument holds weight, whether it is relevant to the discussion and question if they can approach their position in a scientific way while offering their thoughts, adding that they can debate people who hold differing views in a better way in various environments.

3. Discussion

In this section, emerged findings reported in three dimensions (i.e., (a) the benefits of the use of argumentation (awareness and motivation skills, teaching via argumentation-based instruction), (b) difficulties in using argumentation (learning environment and motivational factors), and (c) suggestions) will be discussed in light of the literature.

Regarding the awareness theme, most of the pre-service religious education and philosophy teachers reported having noticed a higher degree of respect for differing views, whether positive or negative. Furthermore, they added that the argumentation technique increased the ability for one to distance themselves from prejudice, approach issues from multiple angles, imbibe the ethics of debate, ask appropriate questions, and understand the necessity for backing up claims. Most of the pre-service teachers involved in the study found that these traits reinforced one another, and found this to be a valuable benefit. Some

teaching candidates also stated that they were more aware of the prevalence of information pollution and those who imbibe information without question.

Ghebru and Ogunniyi (2017) conducted a case study that involved 25 (16 males and 9 females) teachers-in-training in Eritrea. As a result of their experience with the argumentation-based instruction technique, the participants reported that it: (a) adapted their ability to approach a debate with reason and engage in dialogue in order to reach a consensus; (b) made them more aware of the difference between everyday arguments and the argumentation-based instruction technique; and (c) helped them recognize the positive role of argumentation itself (p. 49). With coding and categories generated, the participants' responses to the Learner-Centered Argumentation Instruction Questionnaire and interviews were analyzed in line with the qualitative research method. To describe the type of changes in reasoning made by teachers-in-trainings, researchers used The Contiguity Argumentation Theory categories. Ghebru and Ogunniyi (2017) chose verbatim quotes, which revealed perceptual changes that occurred between the pre-test and the post-test due to the intervention with the unit of analysis, using the categories of CAT. Such perceptual shifts can be described as representing a change in attitude from a general lack of awareness to that of *considerable* awareness. Both the questionnaire and reflective interview responses revealed that most of the teachers-in-trainings had already gained a partial understanding of the technique previously. Ceylan's (2010) study with teachers-in-training via interviews showed a positive attitude towards the use of argumentation in science instruction. When Özer-Keskin et al. (2010) examined teachers in training with regards to their opinion toward instructions based on argumentation, the findings revealed positive attitudes toward the technique. Similarly, Kingir (2011) conducted semi-structured interviews using the heuristic approach with 9th grade students (i.e., 13 students in an experimental group with an 8-student control group), in addition to using the Multivariate Analysis of Covariance (MANCOVA) for quantitative data. Her findings are in line with this study in indicating that the students in the experimental unit formed both positive attitudes and showed development toward the study field and the Science Writing Heuristic. In conclusion, argumentation broadened students' conceptual comprehension.

In terms of the theme of Motivation, almost all the pre-service religious education and philosophy teachers witnessed an increase in self-confidence and the ability of students to express themselves in a relaxed way. They also reported classes becoming more enjoyable, with more valuable input from the students. In a similar study, Aktamış and Atmaca (2016) examined the views of 47 pre-service teachers and their perceptions of argumentation-based instruction. The participants stated that they were satisfied with the method, which they believe increased their class participation and helped them teach topics more extensively. According to Günel et al. (2012), as part of a study involving 146 student participants, teaching through the use of argumentation-based instruction also facilitated more in-class participation, predicting students' motivation indirectly.

Findings emerged regarding the benefits of the argumentation method; most of the pre-service religious education and philosophy teachers reported a clear development in debating ethics and skills, effective practical thinking and decision-making, research and analytics, the use of argumentation, the use of effective communication, and problem-solving. Furthermore, the use of the argumentation technique led to better thinking, critical thought, heightened awareness, a scientific approach, the drawing of conclusions, and other such positive effects. These particular findings contradict those of previous studies (e.g., Osborne 2010), which posit that argumentation has little place in the classroom and with those teachers who do not have enough pedagogical experience to implement the method effectively (Sampson and Blanchard 2012), accentuating valuable points for consideration.

The results of Namdar and Tuskan's (2018) research aimed to evaluate the views of 357 science education teachers' working in various parts of Turkey on the subject. Using descriptive and content analysis, they asserted there are several key factors that ought to be brought to bear in the implementation of argumentation. Similar to the present study, this research supports the notion that students' participation in engaging verbal

discussion during the inquiry process is one of the most important skills to be gained by an entire cohort in terms of its development in scientific knowledge. Thusly, it is claimed that argumentation emerges as a process by which assertions must be supported by evidence. Consequently, according to [Namdar and Tuskan \(2018\)](#), 62% of participants stated having encouraged the use of argumentation either frequently, or every lesson in their lessons. In line with the argumentation-related instructional technique, students acquire information through active learning processes, thus learning the skills required to form arguments and support claims, as well as encouraging the sharing of ideas both in group settings and with classmates ([Erduran et al. 2004](#)). According to [Günel et al.'s \(2012\)](#) study involving 146 students, participants said the teaching method facilitated in-class participation. Additionally, students claimed to have gained skills in inquiry, problem-solving, and systematic thinking, since the subjects using the method could be covered in more detail, allowing for a longer-lasting learning experience. Students' must imbibe skills that facilitate interdisciplinary argumentation to incorporate their knowledge bases.

Many issues people face in their everyday lives require the use of interdisciplinary thinking and complex reasoning abilities where they draw on a variety of specific discipline-based information sources ([Crujeiras-Pérez and Jiménez-Aleixandre 2019](#)). Nevertheless, generally, subjects in schools are presented in disjointed ways that limit incorporation ([Billingsley et al. 2018](#)) and limit teachers (science and religious education) from multidiscipline subject fields to work together ([Hall et al. 2014](#)). One important detail to remember is that the metacognition skill levels of teachers-in-training is critical when using the argumentation-based instruction (e.g., being informed in research which investigate elements related to the metacognition levels of teachers-in-training ([Scheid 2010](#))). [Driver et al. \(2000\)](#) assert that argumentation can offer majorly positive effects in the teaching of science, in the development of understanding material conceptually, utilizing the potential of scientific inquiry, and gaining insight in the understanding of scientific epistemology. As in the present study, [Namdar and Tuskan's \(2018\)](#) findings contradict with the literature, thus pointing to the possibility that the knowledge, skills, and understanding of the teachers is too insufficient to successfully apply argumentation as a method. The few studies examining teachers' knowledge and understanding of argumentation have also found that despite educators' knowing the importance of argumentation, many feel they have inadequate knowledge and skills to support claims with existing evidence ([Sampson and Blanchard 2012](#)). It is worth mentioning, at this point, however, that it may be possible for teachers to classify all classroom discussions as argumentation, and that they thus all have a vague grasp of the concept.

Concerning the teaching theme, the pre-service religious education and philosophy teachers involved in the study reflected that their students became more involved in lessons taught using the argumentation technique, showing active participation. Thus, lessons seemed to become more productive, with meaningful learning taking place at the end of the process. In addition, they considered that the process had positive contributions in terms of eliminating conceptual misconceptions, increasing the students' sense of curiosity, and directing students to explore knowledge and develop a positive attitude towards science and literacy in the taught subject. [Aktamış and Atmaca \(2016\)](#) examined the views of 47 pre-service teachers during their teacher training program, regarding their perceptions on argumentation as an instructional model. All pre-service teachers who participated in the study stated they were satisfied/pleased that the argumentation-based learning approach that was integrated into their lessons. Participants thought that this method increased class participation and allowed curricular content to be learned more comprehensively. [Tümay and Köseoğlu \(2010\)](#) explored 23 chemistry pre-service teachers' understanding of argumentation-based teaching. As a result of the study, argumentation-based teaching was found to encourage the active participation of students in a class and make the learning endeavor more meaningful in developing students' thinking and questioning skills. [Aydın and Kaptan \(2014\)](#), having investigated the effect of argumentation on metacognition and logical thinking abilities of teachers-in-training, found through interviews, that

participants generally held a positive view of the method. The authors further suggested that activities based on argumentation should be integrated in the instruction of the curriculum in various disciplines. [Aydin and Kaptan \(2014\)](#) concluded similar findings from their participants, taken from two cohorts of students at Hacettepe University's department of science education (2010–2011 and 2011–2012), in which 61 teacher candidates were introduced to the method.

4. Materials and Methods

In this study, document analysis was used, i.e., one of the qualitative research designs. Pre-service teachers-in-training completed a *Special Teaching Methods* course as part of their teaching certification program. In this course, pre-service teachers engaged in practices, including the documentation of their views on argumentation in general and their thoughts with regards to in-class argumentation practices during their teaching practicum. Documents pertaining open-ended questions were analyzed by the researchers, using the document analysis method of the records received as an online electronic portfolio. Documents can be used for a range of reasons such as providing data “on the context within which research participants operate—a case of text providing context” ([Bowen 2009](#), p. 29). The document analysis method is a system that rests upon the evaluation and documentation of printed and/or online material. Similar to other methods used in qualitative research, document analysis requires the examination and interpretation of data to make sense of it, to form an understanding of the relevant topic, and to develop empirical knowledge ([Corbin and Strauss 2008](#); [Kiral 2020](#)). In this study, the reflections in the electronic portfolio, which includes the activities, lesson plans, and reflections of the pre-service teachers during the term, were examined within the scope of the requirements of the *Special Teaching Methods* course which is taken by the pre-service teachers at the end of this certification program.

4.1. Document Analysis Sample

The documents of the research consisted of reflection papers in electronic portfolios of 100 pre-service teachers (56% religious education; 44% philosophy education), who had graduated from religious education and philosophy undergraduate programs. The pre-service teachers were undergoing pedagogical training (i.e., working to receive a teaching certificate) in a state university in southern Turkey. Two of the reflection papers in electronic portfolios were not included in the data due to not having been fully completed. The convenience sampling was used as a non-random sampling method in this study. In line with this method, a sample is selected from accessible units in terms of time, cost, and labor ([Büyükoztürk et al. 2014](#); [Heppner et al. 2008](#)).

4.2. Data Collection Tools

In this study, pre-service teachers' documents, including their views on argumentation and practices related to in practicum class argumentation, were used as a data collection tool following their completion of the *Special Teaching Methods* course. Reflection papers were handed out to subjects about their views on the argumentation technique, including the advantages and disadvantages of integrating this method into their teaching practicum (i.e., own personal experiences, learnings, and in-class applications).

Approval was similarly obtained in terms of being allowed to probe the teaching candidates on their views in the name of the ethical collection of data and their analysis. All participants graduated from religion and philosophy departments. During their undergraduate education, none had taken courses related to teaching. After graduation, they chose to receive additional training to receive a teaching certificate to teach in their field. Pre-service teachers took this course as a hybrid. Due to COVID-19 restrictions, instructional methodology of the course was hybrid, including both face-to-face and online methods, while online connections during classes were made via MS Teams. Therefore, there was an alternating group of 20 pre-service teachers attending classes per week, which

the document sample is retained from. No intervention specific to this document analysis was applied. Concerning the definition of the *Special Teaching Methods* course, a standard curriculum plan was implemented as it was applied (i.e., being instructed with the same curriculum plan and/or syllabus) to all other courses with same code and name in a typical fashion. Having been taught the argumentation technique within the scope of a *Special Teaching Methods* course, the pre-service teachers were subsequently asked to write about the application of the technique and its value in their studied field.

The documents of participants included the use of the argumentation technique during their microteaching experience with peers in their class. Over the duration of this process, teacher candidates were working as intern teachers in middle and high schools for their teacher practicum as part of their field practice. Similarly, they integrated the argumentation technique in their teaching as part of their middle or high school internship practices. By the end of the semester, participants' perceptions, thoughts, and opinions about its use were taken as data, and their answers—recorded on a reflection paper handed out to each—were examined one by one. Beside a descriptive analysis, the data were evaluated using a document analysis method (Yıldırım and Şimşek 2011). All reflection papers were coded one by one, followed by a consultation by two independent researchers to offer critical views and maintain reliability among transpired independent coding. Based on the emerged codes and categories, several themes were recorded in harmony with the relevant literature (e.g., Namdar and Tuskan 2018).

This document analysis study was conducted in accordance with the principles of the Turkish Scientific and Technological Institution (Türkiye Bilimsel ve Teknolojik Araştırma Kurumu (TÜBİTAK) Araştırma ve Yayın Etiği Kurulu Yönetmeliği 2015)'s Directive on Research and Publication of Ethical Commission and the fourth article of the Inter-University Commission (Üniversitelerarası Kurul (ÜAK) Bilimsel Araştırma ve Yayın Etiği Yönergesi 2012) Directive on Research and Publication. The analyses contained within this study have been conducted in accordance with the ethical rules of Higher Education Institutions (YÖK) Scientific Research and Publication Ethics Regulations (Yükseköğretim Kurumları (YÖK) Bilimsel Araştırma ve Yayın Etiği Yönergesi 2016). According to the correspondence with The University Ethics Committee, studies that involve document analysis do not require ethical approval. Additionally, due to the COVID-19 restrictions, the documents used in the sample were reached online as electronic portfolios. The summary and unquoted use, annotation, reporting, or publication of these findings using false or unsubstantiated data, fictitious information, or the falsification of claims, whether in terms of writing, opinion, data, or documentation, may be considered a breach of usage (Kıral 2020, p. 15).

5. Conclusions

Findings revealed that the three main goals of the pedagogical training of all teachers comprised of rising awareness with regards to being open towards the ideas related to a subject, the motivation to learn, and an attainment of the required knowledge and skills to instruct. Specifically, pre-service teachers with religious education and philosophy undergraduate degrees may need additional strategies to learn. They benefit from methods for teaching that engage students during the instructional process which support and cultivate liberated thinking. That said, the findings of this document analysis study indicate that most pre-service religious education and philosophy teachers realized the importance of questioning everything and respecting diverse perspectives and opinions.

With regards to the Motivational Factors, religious education and philosophy teachers-in-training began thinking that their perceptions and opinions would be refuted or that they would have difficulty expressing a lack of knowledge during the teaching process by applying the argumentation technique. It can thus be concluded that there may be problems such as a lack of self-confidence, a desire to be proven right, and ego issues about expressing one's opinion. All the pre-service religious education and philosophy teachers involved in this analysis concluded that the development of the argumentation technique in terms of its integration into pedagogy by a given teacher would no doubt help overcome

learning issues. However, it was accentuated that guidance is essential for trainee teachers and that preliminary preparation must be made accordingly.

According to some of the pre-service religious education and philosophy teachers, it was concluded that if the readiness of the students regarding subjects discussed during instruction using the argumentation technique was not at a sufficient level (e.g., due to a lack of foreknowledge), it may be possible to move away from the purpose of the subject during the discussion process. In addition, the results revealed that problems may emerge in terms of practicality, regarding the right to speak, for instance, especially in groups with large class sizes. It has been thus concluded that the duration of the lessons may not be sufficient and that if the argumentation is not well directed, difficulties such as disciplinary problems arising from a discussion may occur.

When the relevant studies are examined, it appears that much has been said in terms of identifying the problems that arise in the application of this approach. While the argumentation-based learning approach is applied in an instructional context, students do not always have the opportunity to engage in scientific thinking or to express their ideas comfortably. Furthermore, current studies highlight that the learning environments required for the in-class application of this method do not exist and students may not have acquired the communication skills necessary for the efficient implementation of such an approach within a group. For this reason, they may not be effectively evaluating their own ideas in comparison to others in a group (Jiménez-Alexandre and Erduran 2007; Driver et al. 2000). Similarly, Bricker and Bell (2008) asserted that often, the youth equate arguments with conflict, considering it as a challenge which must be won in a verbal war of words.

While regarded as an essential practice, a great deal of inconsistency exists involving various aspects of the argumentation method (Carey and Mullan 2004). For instance, Christine A. Padesky stated in her famous 1993 keynote speech that: “Without specifications for what constitutes good Socratic questioning, there can be no research to empirically evaluate whether guided discovery has any more positive long-term effects than simple questioning to change minds” (Padesky 1993, p. 6)—which remains the most difficult of CBT skills for therapists to learn (Waltman et al. 2017). She followed by outlining four stages that guide a good Socratic dialogue, namely: (a) Informational Questions (Who was there? What did you say? How do you know you looked weird? p. 6); (b) Empathic Listening (“I noticed you appeared nervous when we started the role play, but you seemed less nervous after a few minutes. Does that match your experience?” p. 6); (c) Summaries; and (d) Analytical/Synthesizing Questions (What do you make of this? (Analytical question). How do these ideas fit with your original belief? Synthesizing question, p. 8). The process of inquiry into knowledge can promote learning in the endeavor to bring together increasingly diverse religious and multicultural societies, which would benefit from instructional paradigms utilized to guide the discovery of the “truth” (Heppner et al. 2008). This may respond to challenges faced by societies that aspire to bring together multiple cultural, moral, and religious communities (Latif 2022).

It ought to be mentioned here that pre-service teachers noted that, given the existence of those who go through life without questioning and criticizing, they had become far more aware of the benefits of the argumentation technique in helping them realize the necessity of avoiding prejudice. A dilemma teaching both these fields involves making truth assertions explicitly or inexplicitly through challenging presumptions in relation to the asserted vision of the temporal and after-life. It is this contradictory nature of truth claims that appears problematic. They either cannot all be true, or else they can all be true in a manner contradicting other forms of truth assertions. If we take the view that truth assertions of religion are argued during instruction, as part of the curricular domain, it allows for an inevitable clash at an epistemological level (Heisenberg 1975). There seems to be an unending debate between religion and science and also religion and philosophy. While religion exerts belief, science operates from testing hypothesis with an assumption that they may be true. Teaching children to find ways to reconcile their differences may

have a tremendous value in their world and in interactions beyond their attitudes for the subjects learned (Bowler 2001; Worrall 2004). Consistent with this statement, document analysis in this study revealed that the realization of misconceptions may can be uncovered using the argumentation technique and may utilize children at a K-12 level with a new effective skill for interaction. Methods such as this one, which are conducive to science, may inevitably help dismantle barriers during scientific inquiry.

The raising of future generations with methods of inquiry such as argumentation and/or Socratic questioning will undoubtedly equip them with skills to enhance and emancipate their worldview. Moreover, as a method, Socratic questioning has emerged from a simple dialogue to a broader process of discovery over years of study, encompassing the use of interactive writing, behavioral experiments, role plays, and guided imagination. Just as argumentation deepens a discussion as a goal to increase client awareness and motivation for change, it also provides the opportunity to test drive newly attained skills, as witnessed during role play and guided imagery experiments. Having already been familiar with Socratic questioning before their training, teachers from both fields stated that the experience was similar to previous forms of debate, recalling Toulmin's Argument Pattern (Toulmin 1958) and an interrelating set of successive claims (Erduran et al. 2004). Further, according to Padesky (2019), Socratic questioning is not all about the questions—the effective use of the process, focusing on discovery, takes precedence over changing a certain interlocuter's mind.

In this document analysis, authors analyzed the reflections of religion and philosophy pre-services teachers' perceptions on argumentation and in-class argumentation practices through the document analysis of 56 religious education and 44 philosophy education pre-service teachers. Both religion and philosophy pre-service teachers revealed that they benefited from and valued the use of argumentation and in-class argumentation practices. When dominant perspectives on religion are presented in religious education, it may establish unequal learning conditions in multicultural communities, presenting challenges. Addressing such social inequality and heterogeneity may be possible with the necessary skills, exercise, and training (i.e., may be realized by teaching original instructional techniques), as revealed by pre-service teachers' documents in this study. Multicultural societies face challenges to bring together multiple identities and religious beliefs. Raising future generations with such a method of inquiry as argumentation would possibly equip them with skills and awareness, especially related to impacting the instructional process of the heterogeneous composition of a religious education learning community.

In the Special Teaching Methods course within the scope of the teaching certificate program, pre-service teachers who graduated from disciplines such as religion and philosophy have learned, for the first time, discussion techniques such as inquiry-based teaching. Teaching techniques such as argumentation and Socratic inquiry require explanations supported by evidence, as in science, physics, chemistry, and biology. The findings emerged from the document analysis of the Special Teaching Methods course's reflection papers showed that the pre-service teachers who graduated from disciplines such as religion and philosophy developed attitudes that appreciated questioning claims made while in the quest of scientific evidence, prior to accepting whatever was presented to them. Thanks to the questioning and discussion techniques they learned, they reported that many higher order thinking skills, especially inquiry skills, improved as they engaged in the facilitation of the questioning process more. Pre-service teachers reported that when they made a claim, it enhanced their awareness, such as the awareness of the necessity of supporting arguments with scientific data, and the necessity of moving away from being judgmental. Thus, they stated, "they are pre-service teachers who can express themselves more easily" showing an increase in their self-confidence. Furthermore, pre-service teachers thought that this technique aided active participation and improved the permanence of what was learned. They also reflected that when they applied the argumentation techniques within the scope of their school practicum course (i.e., as part of the teaching certificate program), it made an efficient lesson, and reported that meaningful learning took place at the end of the process.

These findings emerged to support that discussion techniques such as argumentation and Socratic inquiry point out that debate has an important place in teaching subjects such as religion and philosophy education, in addition to the teaching of disciplines such as science, physics, chemistry, and biology. It can be confidently said that accrued knowledge over the years points out that religious education made with the method of traditional didactic teaching method prevents the student from questioning. As a result of a religion and philosophy education conducted by discussing and questioning the curricular materials, the student will gather evidence to investigate and question while at the same time will realize a meaningful learning process, which does not rely on memorization.

As stated by pre-service teacher 37, many assertions pointed out the benefits of argumentation as an instructional technique in terms of establishing a greater understanding across different religious faiths and spiritual beliefs—a much-needed advantage in multicultural communities (see Langsdorf 2011). The training pre-service teacher facilitated ways to navigate discussions and inquiries, which may cultivate embracing heterogeneity through religious and philosophy education. Therefore, openness for inquiries and acceptance of differences can, in turn, help narrow the gap among communities of a diverse religious and spiritual orientation, moving towards reducing potential social disparities (Duran and Hamamé 2020). The use of the argumentation technique in the classroom allows students to openly criticize preconceived notions and beliefs in an objective fashion, while remaining tolerant and simultaneously being open minded. These are invaluable assets in a world of tension based on differences of cultures, ethnicities, and religious beliefs, and promotes diversity and heterogeneity (Bermudez et al. 2021; Duran and Hamamé 2020; Langsdorf 2011).

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