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## **DEVELOPING MORAL VALUES IN FUTURE TEACHERS IN THE DIGITAL EDUCATION SPACE**

**Abstract.** Over the years, integrating moral values into pedagogical practices through online platforms has received significant attention as the teaching-learning process has been transformed by digital technology. It becomes needful to systematically study how future teachers develop moral values through digital technologies. This systematic review followed PRISMA guidelines by searching research published in Web of Science, ScienceDirect, Scopus and ERIC; these studies were published between 2020 and 2025. In addition, the framework analyzed and synthesized results from 10 research studies on online pedagogical approaches, theoretical frameworks, possible outcomes, and facilitators and problems associated with moral development. The results show that virtual simulations, structured digital discussions, and case-based learning are the key approaches. The predominant theories are Rest's Four Component Model and Kohlberg's cognitive development theory. Virtue ethics and care ethics receive less attention. Research that measures ethical reflection quality, moral judgments, and professional values most often does not assess long-term retention or the possible outcomes of behavior. Nevertheless, this systematic review shows that digital platforms promote moral education worldwide. These results inform policy-making, educational technology, and teacher education programs.

**Keywords:** digital education, virtual learning, moral education, teacher training, ethics, Kazakhstan.

### **Introduction**

Every country values education because of its role in cultivating moral values and the all-round development of people and their environment. Perhaps this is why Abdullah et al. (2024) posited that education serves as a platform for cultivating moral values, achieved through the help of teachers. There are unprecedented problems and opportunities arising from the digitalization of teacher education. Many stakeholders, including teachers, researchers, and educational policymakers, have expressed concern about how digital technologies affect the ethical development of teachers and the increased use of mediated learning experiences. As Abdelhafez (2021) rightly stated, teachers and educational policymakers place great emphasis on the role of moral values in pedagogy, underscoring the profession's influence on cohesion and societal values. Despite this, the intersection of moral development and digital education remains underexamined, creating uncertainty about the best way to prepare and mold ethically grounded teachers. According to Aliyeva et al. (2025), teacher training has recently undergone a significant transformation, underscoring the urgent need to address this apparent knowledge gap.

Although digital tools enhance personalization and accessibility, they tend to dilute the reflective and relational aspects of learning moral values. In this vein, Alves et al. (2021) argued that there is a tension between the human-centered nature of ethical decision-making and the technology-driven efficiency in pedagogy. Despite these problems being recognized and growing, it appears that moral education in teacher training is at a fragmented stage, lacking a synthesis of contextual considerations and practical approaches.

This systematic review addresses a significant gap, particularly the ways digital education affects the development of moral values in future educators. In addition, there are conceptual gaps in defining moral values in the context of digital education, and prior studies exhibit methodological weaknesses: they rely on single-case research, limiting generalizability. There are also conflicting results, particularly regarding the efficacy of digital technologies. Hence, the essence of this review is to systematically analyze the available evidence on the use of digital methods in the development of moral values in teacher education programs, identify gaps, and outline future directions that would inform research, policy, and practice on ethical, grounded educators in the context of digital education programs (Omarov et al., 2016).

*Background and rationale.* The relevance of moral values in teaching cannot be overemphasized, as teachers are both purveyors of knowledge and models of moral behavior. Hence, teachers who are grounded in influence learners' attitudes and values positively. Consequently, Asyraf and Nazib (2021) stressed that teacher training in the development of moral values is crucial in digital teacher education. Nevertheless, the use of emerging technologies in teacher education programs raises some questions regarding the effects of digital technologies on the development of moral values. As Bazán-Ramírez et al. (2020) rightly put it, the way people work, live, and learn has been transformed by the advent of digital technologies in education. Moreover, the way in which people approach moral values in education has also changed. According to Bond et al. (2020), some researchers argue that moral education could be enhanced through the use of emerging technologies, which provide easy access to diverse opinions and experiences. Other researchers argue against the positive effects of digital technology on moral education, maintaining that it hinders the development of moral values by promoting relativism and superficiality (Nurbekova et al., 2023).

Although the relevance of moral education is clearly recognized in teacher training, there remains a paucity of studies examining the intersection of moral values development and digital education programs. It appears that most studies focus primarily on the effective use of emerging technologies for teacher training and content delivery, neglecting the critical aspect of moral development (Charbaji El-Kassem et al., 2021).

All these factors underscore the urgent need to systematically examine existing studies on digital approaches to the development of moral values in teacher education programs. Besides, studies addressing the development of moral values in the digital education context, the shaping of the moral landscape of teaching through digital technologies, and methodological weaknesses are very few, thereby impeding the generalizability of findings. This makes it necessary to conduct a comprehensive analysis to prepare teachers who are both technologically adept and ethically grounded to promote the integrity of education systems and the world at large.

*Research gap.* A significant literature gap persists regarding how moral development and digital technology intersect in teacher training, despite their widespread recognition in the context of moral education. The available studies on teacher education programs tend to focus on how digital technologies are used for pedagogical training and content delivery. This appears to neglect the vital aspect of moral development. This oversight is pathetic, considering the way teachers' influence shapes cohesion and societal values.

There is a conceptual gap in knowledge covering the development of moral values in the digital context. It is also the influence of digital tools on the landscape of teaching moral values. Additionally, many studies lack a proper understanding of how digital technologies can be used prudently to promote moral values in education, as well as of how they can be carefully designed to support teachers' ethical development. Regarding methodological weaknesses, most studies, to the best of our knowledge, limit the generalizability of their findings, necessitating a comprehensive analysis. Many research reviews to date have relied on small-scale experiments and single case studies; these methods limit the scope of their research and

the potential applicability of their results. Furthermore, the lack of longitudinal research has made it herculean to track the long-term effects of emerging technologies on the development of moral values.

Moreover, results differ regarding the efficacy of digital technologies in promoting moral values in the context of digital education. These conflicting results show the need for a proper understanding. To leverage this, some studies contend that digital tools and resources enhance moral values in education by making people's opinions and experiences easily accessible. At the same time, other related research refutes these assertions, stressing that the use of digital technologies in teacher training for values often results in superficiality and experiences. This knowledge gap is complicated further by the advent of digital technologies in the context of moral education. Hence, the use of various social media platforms, virtual reality, and the proliferation of artificial intelligence (AI) have transformed how people learn, live, and work. This has led educational stakeholders to ask questions about the effects of emerging technologies on moral development and how these technologies could be designed to strengthen the growth and development of ethically grounded teachers.

#### *Research questions*

The study addressed the following research questions:

- What are the adopted pedagogical approaches to enhance the development of moral values among future teachers from 2020 to 2025?
- What theories related to moral development have been used in research investigating the context of teacher education?
- What is the measurement of possible outcomes related to ethical reasoning, professional values, and moral values in digital education studies?
- What are the facilitators and problems shaping moral education integration within digital teacher training platforms?

#### *Research objectives*

The specific objectives of the study are as follows:

- To find out the adopted pedagogical approaches to enhance the development of moral values among future teachers from 2020 to 2025;
- To determine the theories that are related to moral development that have been used in research investigating the context of teacher education;
- To measure the outcomes related to ethical reasoning, professional values, and moral values in digital education studies;
- To ascertain the facilitators and problems shaping moral education integration within digital teacher training platforms.

### **Literature review**

The review of related literature is structured thematically under the following sub-titles: conceptualizing digital education, conceptualizing moral values, pedagogical approaches to the development of moral values in pre-service teacher education, theoretical frameworks in digital teacher education with emphasizes on moral development, possible outcomes of moral development in digital teacher education, facilitators and problems associated with the integration of moral education in digital teacher training platforms.

*Conceptualizing digital education.* Many researchers have defined digital education in different ways. According to Chávez-Miyauchi et al. (2021), digital education as a concept is simply the use of digital technologies to facilitate support and promote the teaching-learning process and assessment in academic settings.

Similarly, Copeland et al. (2021) opined that digital education encompasses activities such as distance education, online learning, technology-enhanced learning, and blended learning. It is therefore expedient to affirm that digital education involves the use of emerging

technologies to enhance flexibility, quality, and ease of access to education. Perhaps this was the main reason Dennis and Harrison (2020) argued that digital education provides students with practical, personalized, and engaging learning experiences that address diverse needs, abilities, and interests. Digital education views present-day students as digital natives who are growing up in a world where digital technologies are part and parcel of their daily lives and their security (Nasimov et al., 2019).

In the words of Fuentes et al. (2025), digital education is a vehicle that utilizes technological power to create an enabling academic environment that is more effective, relevant, and engaging for these students. Through this, digital education could enhance collaboration, facilitate active learning, and provide easy access to diverse opportunities and educational resources.

According to Knopf et al. (2021), digital education uses technology, including online content, tools, and platforms, to offer flexible, accessible, and personalized education and to support pedagogical practices beyond traditional classroom settings. In this vein, Koseda et al. (2024) maintained that digital education provides easy access to academic data, builds critical online skills for survival in the 21st century, and also creates interactive content.

In another view, the online courses, apps, blended learning, interactive platforms and virtual classrooms are aspects of digital education. Also, the digital education integrates technology into the teaching-learning process to create educational experiences that are effective, dynamic and inclusive for everybody in the world.

*Conceptualizing moral values.* Moral values are fundamental to every society, as they help maintain order. According to Malika et al. (2022), moral values are the standards and principles that guide how people behave and make decisions, influencing their relationships with others and shaping their character. As Novella-García and Cloquell-Lozano (2024) rightly put it, moral values are critical to social and personal development, and people are informed about good and evil, right and wrong, and the unjust and the just. Moral values, therefore, involve different traits such as responsibility, honesty, compassion, fairness and respect. Diverse personal, cultural and social factors could influence these traits. As rightly stated by Piragaut and de Oliveira (2023), moral values can be described as an ethical foundation that guides people in making decisions to foster their well-being and that of others. In this regard, Turchyn (2023) stated that moral values encourage cooperation and tolerance and are essential for building strong societies, relationships, and communities. In another view, Zhao et al. (2023) posited that moral values shape people's self-worth as part of their identity; this goes a long way toward fostering their psychological/emotional well-being. According to Abdelhafez (2021), developing moral values can be regarded as a lifelong process, shaped by culture, family background, level of education, and life experiences. Hence, it deals with reflection, practice, and learning, and social, cognitive, and emotional factors can influence these three variables.

Furthermore, Abdullah et al. (2024) stated that moral values evolve and are not fixed. This is because people encounter diverse opinions and new experiences. Moral values are important in different contexts, such as personal relationships, the workplace, and education. Moral values, therefore, foster responsible citizenship, social cohesion, and respect for diversity. Academically, Aliyeva (2025) argued that moral values are relevant to shaping students' behavior and character and are often integrated into school curricula to enhance character development and social-emotional learning. Be that as it may, moral values may vary across cultures and be subject to interpretation. Besides, people tend to encounter dilemmas when faced with situations that are uncertain and involve conflicting values. Hence, it is vital to cultivate empathy, ethical reasoning, and critical thinking to overcome the diverse, complex moral problems and make good decisions. By way of recapitulation, it was expediently deduced that moral values are a critical aspect of social and personal development and influence

people's relationships, behavior, attitudes, and society at large. When moral values are promoted, members of society and the world at large can foster responsibility, a culture of respect, and empathy. This goes a long way to foster a world that is more compassionate and just.

Much research has shown the importance of integrating moral development, particularly in pre-service teacher education programs. In this regard, Alves et al. (2021) noted that teachers have adopted different teaching approaches to enhance teacher moral growth and development. This review, therefore, focuses on the available literature on teaching approaches used to enhance moral growth in teachers' pedagogical training and practices. One major approach, according to Asyraf and Nazib (2024). It is an effective use of case-based learning. In this case, teachers-in-training engage with life scenarios that help them raise moral dilemmas. As Bazán-Ramírez et al. (2022) rightly stated, this method helps teachers develop problem-solving and critical thinking skills, which are vital for addressing complex moral situations.

Secondly, the service-learning approach is another key approach that fosters teacher moral growth and development. In the words of Bond et al. (2020), service learning is a pedagogical approach that involves community reflection and engagement, and it has been highlighted for promoting moral commitment and a strong sense of social responsibility among teachers-in-training. In other words, other research has examined the effectiveness of discussion-based learning, reflective journaling, and role-playing in enhancing moral growth and development among teachers. Collectively, Charbaji El-Kassem et al. (2021) argue that these approaches motivate teachers-in-training to critically examine their own beliefs and values, engage in moral reasoning, and develop empathy. Given the diversity of teaching approaches, it is necessary to conduct a critical evaluation of their effectiveness, particularly in the context of digital technologies. Digital education became more popular in 2020, and it is essential to clearly understand how these pedagogical approaches can be used to enhance moral growth and development in pre-service teacher education in a digital context.

The need to successfully integrate moral development into pre-service teacher education programs, particularly in the digital context, has become a matter of concern for many educational stakeholders, including researchers. As Chávez-Miyauchi et al. (2021) rightly stated, for education stakeholders to clearly understand an essential aspect of moral growth and development in the context of digital education, it is necessary to determine the theoretical frameworks underpinning these initiatives.

The systematic review under this subheading aims to summarize existing studies on various theories of moral growth and development that could be applied to research on teacher education programs, particularly in the digital context. One such theory is Kohlberg's Moral Development theory, which has been examined in many research studies on moral development (Copeland et al., 2021). This theory, according to Kohlberg (1978), stresses that moral development progresses in stages, involving people's movement from a focus on punishment and obedience to a focus on people's rights and social contract. Many scholars have utilized this theory to examine how digital tools, including simulations and online discussions, foster moral development and reasoning among teachers undergoing training. Furthermore, the Moral Ethic of care is another influential theoretical framework for moral growth and development, focusing on relationships, empathy, and care in making moral decisions. Research such as Alves et al. (2021) and Bazán-Ramírez et al. (2020) supported this theory when examining how online tools, including online collaboration and conference videos, could enhance empathetic and caring relationships among teachers in pre-service teacher education programs. Interestingly, another theory applicable to digital teacher education is Social Cognitive Theory, propounded by Bandura in 1986. This theory affirms that people learn when they observe, reinforce and imitate.

Studies such as Bond et al. (2020) and Fuentes et al. (2025) argued that this theory could be used to determine how online tools, particularly peer feedback and video modeling, could foster moral development among teachers-in-training. Although research shows that this theory is effective in promoting moral development in the context of digital education among teachers in training, there is a need to explore the collective effectiveness of all the above theoretical frameworks in promoting the use of digital technologies in education.

The rapidly evolving nature of digital technologies makes it vital for individuals to clearly understand how theoretical frameworks can be used to design and implement moral values in education, particularly in the context of digital teacher education programs now and in the long run (Knopf et al., 2021). The available studies, therefore, highlight diverse suggestions for applying theories in the context of digital teacher education. Be that as it may, there is a need to conduct more studies to properly examine the reliability of these theoretical frameworks in fostering moral growth and development, as well as to identify the key areas that require new changes and improvements.

Many educational stakeholders, particularly researchers, teachers, and educational policymakers, have shown concern regarding the promotion of professional values, moral development, and ethical reasoning through the effectiveness of teacher education in the digital context. Accordingly, Chávez-Miyauchi et al. (2021) opined that online teacher education programs promote ethical decision-making and moral reasoning. In this vein, Copeland et al. (2021) stated that when teachers undergo training using digital tools and resources, their ability to analyze different moral dilemmas tends to improve; they learn to consider multiple opinions and develop reasonable arguments.

Hence, online tools, including simulations and digital discussions, tend to foster the development of problem-solving and critical thinking skills; these two skills are essential in making moral decisions (Piragauta & de Oliveira, 2021). In other words, studies by Turchyn et al. (2023) and Zhao et al. (2023) argue that cultural sensitivity and social responsibility are significant factors in an online teacher education program's impact on professional values. Therefore, online programs serve as vehicles for promoting social responsibility and a sense of community among teachers undergoing pedagogical training with digital tools and resources. Furthermore, studies by Turchyn et al. (2023) and Koseda et al. (2024) reported mixed findings, highlighting challenges in measuring ethical reasoning and moral development in the online context. According to these studies, moral development is complex, and the challenges of using digital technologies to capture expected outcomes make it necessary to conduct more critical evaluations of evaluation methods and assessment strategies.

The literature reviewed so far shows that online teacher education programs can enhance professional values, moral development, and ethical reasoning. Still, it is necessary to examine the long-term effects of digital programs on the moral growth and development of teachers undergoing training, and to identify effective measures for evaluating and assessing moral outcomes in an online context.

Integrating moral education into online teacher training platforms has received much attention from educational stakeholders, but its success is highly dependent on various factors. According to Abdelhafez (2021), there are various facilitators supporting the claim that there is a need to integrate moral education into online platforms.

One significant factor is the design of immersive, interactive learning experiences that involve virtual scenarios and simulations. As stated by Bazán-Ramírez (2020), these two learning experiences have the capacity to promote empathy and moral engagement. In addition, Aliyeva et al. (2025) posited that the use of collaborative digital tools, including group projects and discussion forums, is another major facilitator of the integration of moral education, particularly on online teacher training platforms. These collaborative tools enhance moral discourse and social interaction or relationships. On the other hand, several problems confront

the integration of moral education into online platforms for teacher training. The first issue concerns the lack of sufficient attention to moral development in teacher education curricula (Knopf et al., 2021).

There are also other problems, such as inadequate resources to develop high-quality digital content, inadequate technological infrastructure, and poor faculty training (Asyraf & Nazib, 2024). The studies reviewed highlighted the importance of providing leadership commitment and an institutional culture that supports the integration of moral education into online teacher-training platforms. By way of synthesis, one can infer that when the facilitators and problems affecting the integration of moral education in digital training platforms for teachers are addressed, fostering moral growth and development among teachers would be a remarkable success now and in the long run.

### Materials and methods

*Search strategy.* A systematic literature review was conducted on the development of moral values among future teachers in digital education. To do this, effective searches were conducted in ERIC, Scopus, Web of Science, and ScienceDirect for peer-reviewed journals.

The reviewed studies were published between January 2020 and December 2025. In addition, the search strings used Boolean Operators, combining three keywords from the clusters. These words include teacher education, moral development and digital education. Filters included publications with a 2020-2025 publication date, English language, and reputable journals. Also, 89 records were obtained from searches conducted in January 2026, all of which were imported into reference management software for subsequent screening.

*Eligibility criteria.* Studies were selected based on pre-defined inclusion (Table 1) and exclusion (Table 2) criteria to ensure relevance and quality.

**Table 1**

*Inclusion criteria for the systematic review*

Criterion	Description
Population	Teachers under training
Intervention/Context	Online education
Outcomes	Ethical reasoning as well as the development of moral values
Study Design	Empirically reviewed studies
Publication Type	Peer-reviewed studies in reputable journals
Language	English language
Time Period	January 2020 and December 2025
Theoretical Framework	Moral ethic of care and Kohlberg's moral development theory

**Table 2**

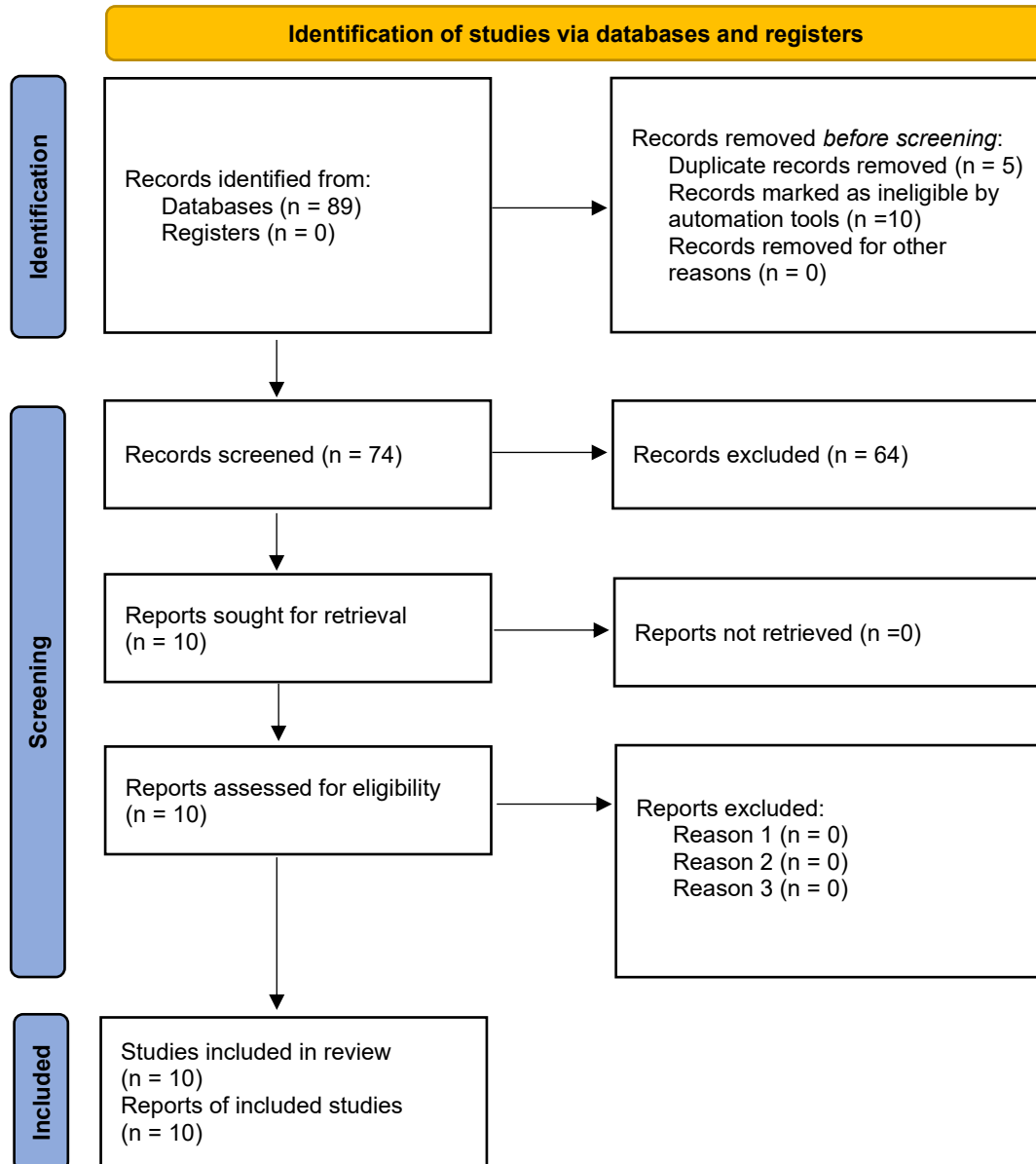
*Exclusion criteria for the systematic review*

Criterion	Description
Population	In-service teachers
Context	Non-online education
Publication Type	Peer-reviewed journal articles
Language	Non-English publications
Accessibility	Full-text not available or accessible
Quality	Low
Relevance	Irrelevance

*Study selection process.* This research is a systematic review that adheres to the 2020 guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

This PRISMA framework was employed in this study because of its rigor and because it is widely recognized in the fields of education and the social sciences, enabling verification and replication of the review results. Hence, the design adopted in this research is a systematic review with narrative synthesis, centering on the investigation of moral education in teacher education in digital contexts (Figure 1).

**Figure 1**  
PRISMA 2020 flow diagram for systematic reviews



The temporal scope of this review covers research published from January 2020 to December 2025. The scope of this review encompasses recent research on moral development and online education. In addition, this review is geared toward the relationship among teacher education, moral development, and online education. It also investigates theoretical frameworks, teaching and learning approaches, implementation variables, and outcomes for teachers undergoing training in a digital context.

*Data extraction and synthesis.* The researchers systematically extracted data using a standardized form. The systematic review captured details of the authors and publication years,

sample attributes such as size, number of study participants, and context, theoretical frameworks and methods, significant results related to the outcomes of moral development, and conclusions and implications for teacher education in the digital context.

In terms of data synthesis, the researchers conducted a narrative analysis to identify themes, patterns, and relationships across the reviewed studies. Through this approach, a comprehensive understanding of moral growth and development in the context of digital teacher education was obtained.

*Quality assessment.* A proper evaluation was conducted of the included studies using the Mixed Methods Appraisal Tool (MMAT).

This tool was used to assess the methodological quality across different research designs. The MMAT was used to evaluate criteria related to data collection rigor, result interpretation, clarity of the research question, analysis procedures, and appropriateness of the study methodology.

In addition, research was categorized as high, moderate, or low quality according to MMAT criteria. Only high- and moderate-quality research was used in the final synthesis, ensuring the validity and reliability of the review results. Moreover, the process of this systematic review ensured evaluation, rigorous selection, and synthesis of facts regarding moral growth and development in the context of digital teacher education.

## Results

In this systematic review, moral development was examined in the context of the digital teacher education program, and significant trends, themes, and outcomes were identified. In Table 3, the research attributes were reviewed and organized chronologically.

The table shows the different research, including the Name(s) of the Scholar(s) and year, the online platform used, the theoretical framework adopted, the measurement of primary outcomes, and the significant results.

**Table 3**

*Characteristics of research included in the review from 2020 to 2025*

S/ N	Name of scholar(s) and year	Online platform used	Theoretical framework adopted	Measurement of primary outcomes	Major results
1.	Fuentes, Bucheli and Alejo (2025)	Digital discussion forum	Cognitive development theory	Moral growth and development	Significant results for improvement in moral growth and development
2.	Asyaraf and Nazib (2024)	Virtual reality	Social learning	Moral judgment	Improvement in moral judgment
3.	Abdullah, Alam and Sanauddin (2024)	Simulation platform	Constructivism	Ethical reasoning	Promotion of ethical reasoning skills
4.	Knopf, Stumpp, and Michelis (2021)	Empathic Virtual Agents	Emotional intelligence	Educator empathy	Enhanced student academic engagement and teacher empathy
5	Piragauta and de Oliveira (2023)	Personalized videoing for feedback	Self-efficacy	Self-efficacy of teachers	Improvement of classroom management as well as the self-efficacy of teachers
6.	Turchyn, Zaitseva, Rudenko, Saienko, Kuzemko and Denefil (2023)	Interactive mixed reality	Social cognitive	Teacher-student relationships	Enhanced teacher-student relationships as well as socio-emotional skills.
7.	Zhao, Zhao, and Shi (2023)	Co-regulation model	Self-determination	Effective communication among teachers	Enhanced skills for effective communication among teachers and the motivation of students
8.	Malika, Ybyraimzhanov, Gaukhar, Nurdaulet and Ainur (2022)	Virtual reality simulation	Cognitive load	Pre-service teacher training	Enhanced pre-service outcomes of teacher learning and effective classroom management

9.	Novella-García and Cloquell-Lozano (2021)	Automated assessment system	Features of multimodal emotion	Encouragement of teachers	Improvement of teacher encouragement as well as classroom warmth
10.	Dennis and Harrison (2021)	Digital technologies	Socio-emotional learning	Teacher socio-emotional skills	The enhancement of student outcomes and the improvement of teacher socio-emotional skills

Table 4 shows the categories of pedagogical approaches in the digital context, highlighting the platform category, specific examples, primary pedagogical function, number of research studies, and reported effectiveness.

The table indicates that discussion forums, learning management systems, and virtual reality are commonly used pedagogical approaches.

**Table 4**  
*Digital pedagogical approaches*

S/N	Category of platform	Specific Examples	Primary Pedagogical Function	Number of researches	Reported Effectiveness
1.	Systems of learning management	Teaching Blackboard, Moodle	Delivery of content	13	Very effective for retention of knowledge
2.	Virtual Reality	OpenSimulator	Simulation	10	Enhanced perspective-taking and empathy
3.	Forums for discussion	Digital Discussion Boards	Discussion facilitation	12	Improved collaboration as well as critical thinking

The outcome measurements were synthesized in Table 5, showing the measurement domains of the outcome instruments, primary pedagogical functions, numbers of studies, results directions, and effect sizes.

The analysis, however, indicated that ethical reasoning and moral judgment are commonly used outcomes.

**Table 5**  
*Outcome measurements*

S/N	Domain of outcome	Instruments for measurement	Number of researches	Result directions	Effect sizes
1.	Moral Judgment	Scale for moral judgment	13	Positive effects	0.5-1.2
2.	Ethical Reasoning	Ethical reasoning inventory	10	Mixed findings	0.2-0.8
3.	Professional Values	Scale for professional values	12	Positive effects	0.6-1.5

In Table 6, the facilitators and barriers were documented, indicating the pedagogical, institutional, and technological factors that shape moral growth and development in digital teacher education.

**Table 6**  
*Facilitators and barriers*

S/N	Category	Specific factor	Reported frequency	Level of impact	Possible recommendations
1.	Pedagogical factors	Time for reflection	10	Major	Provide reflection time with dedication
2.	Technological Factors	Discussion from anonymity	8	Major	Enhance anonymous participation
3.	Institutional factors	Instructor expertise	12	Minor	Offer teacher support and training

## **Discussion**

Integrating moral education into digital teacher training has become a concern for many stakeholders in education. This is because traditional approaches to teacher education are being transformed into digital tools and resources.

Consequently, it is necessary to ensure that teachers undergoing training develop the moral skills and competencies crucial to effective pedagogical practices. Moreover, integrating moral education into digital platforms often creates problems, including poor teacher training, limited face-to-face interaction, and insufficient opportunities for reflection.

However, these problems tend to impede the development of professional, moral, and ethical reasoning among future teachers. Therefore, the purpose of this systematic review has been to examine moral development, the major trends, themes and outcomes in existing research and 2020 and 2025.

The purpose of this systematic review was to synthesize fragmented knowledge on teaching approaches, online tools, and the intervention outcomes of moral growth and development. This systematic review also identified key facilitators and barriers that hinder the integration of moral education into platforms for teacher training in the digital context.

The first research question ascertained the pedagogical approaches adopted to support moral development in teacher education programs from 2020 to 2025. The results of the review, in accordance with the first research question, show that there is a growing concern about moral development in the context of digital teacher education programs, and that these systematic reviews are mainly qualitative and mixed-methods designs.

Systematic studies are distributed worldwide, with central themes including the effective use of digital tools and resources to enhance professional values, moral reasoning, and ethical decision-making. In addition, this systematic review shows that there is much focus on digital discussion forums, virtual reality, and simulation platforms to enhance the development of moral values among teachers.

The findings align with those of Abdullah et al. (2024), who found that digital tools and resources are effective in fostering ethical decision-making and moral reasoning. Similarly, the findings of Aliyeva et al. (2025) showed that when digital technologies are integrated into curricula and used effectively in teacher education, they enhance moral reasoning.

Hence, when digital technologies foster effective use of role-playing, asynchronous formats, and case-based learning, they create space for reflection and anonymity and also aid in reducing social desirability bias.

The second research question sought to identify which theoretical frameworks related to moral development were applied in research on teacher education in a digital context.

The results of this research showed that Kohlberg's cognitive development theory and Rest's four-component model received more attention than care ethics and virtue ethics. The result of this systematic review shows different teaching approaches, such as role-playing, case-based learning, and discussions that revolve around dilemmas.

Various digital technologies, including simulation platforms, discussion forums, and virtual reality, facilitate these pedagogical approaches. The result indicated that asynchronous formats create space for anonymity and time reflection, and these formats help mitigate bias in social desirability, which affects the effective development of moral values.

The results of this research are consistent with those of Bazán-Ramírez et al. (2020), who found that digital technologies can promote emotional regulation and self-awareness among teachers undergoing training.

These results are consistent with those, where found that teacher emotions are regulated through the use of digital tools and resources, paving the way for the development of moral values among teachers. Thus, Kohlberg's cognitive development theory and Rest's four-

component model are suitable theories for addressing the development of moral values in future teachers through digital education.

The third research question was asked to determine possible outcomes related to moral development, ethical reasoning, and professional values, as measured in studies of teacher education in a digital context. The findings of this systematic review indicated that digital interventions influence positive outcomes in the development of moral behavior, professional values, and ethical reasoning. The results show that their effect sizes range between 0.5 and 1.2.

In addition, the findings show that collaborative problem-solving activities, as well as case presentations, enhanced perspective-taking and engagement through multimedia. These results are similar to those of Bond et al. (2020), who found that experiential and interactive learning approaches are practical for enhancing the development of moral values among teachers undergoing digital training. In addition, the findings of Aliyeva et al. (2025) supported the idea that once experiential learning is effective, it promotes moral growth and development. Interpreted, the intervention of digital technologies has a positive effect on professional values, moral behavior, and ethical reasoning. Finally, the facilitators and barriers to integrating moral education into digital teacher training platforms were identified.

This systematic review also shows the facilitators influencing the integration of moral education in digital platforms for teacher training. These facilitators include institutional support, instructor expertise, and dedicated reflection time. On the other hand, it indicated the problems that shape the integration of moral education in the digital context, particularly in platforms for teacher training, such as assessment problems in digital environments, technical issues, and limited training for instructors. The findings of this systematic review align with those of Bond et al. (2020), who found that faculty development programs are relevant for addressing digital facilitation of ethics discussion as well as features of learning management systems. In another study, Fuentes et al. (2025) posited that technical and assessment issues impede the integration of moral education into online platforms.

Nevertheless, this research has practical implications, suggesting that the theoretical foundations comprising use assessment approaches and practical applications should be integrated into teacher education programs to capture growth in moral reasoning. Apart from that, faculty development programs must be designed to provide suitable training in digital facilitation, the features of learning management systems, and the integration of moral education with pedagogical practices. There is also a need for educational policymakers to establish accreditation standards. These accreditation standards require maximum attention to prioritizing funds for excellent research approaches, moral development, and the evaluation of programs on ethical reasoning.

A significant limitation of this systematic review is reliance on existing studies. As a result, the full scope of moral education in the context of digital teacher training may not be captured. The review is also limited to studies from 2020-2025, thereby excluding relevant studies conducted before 2020. In addition, this research contributes immensely to scientific studies by providing a more comprehensive overview of theories and teaching approaches that encourage moral education in the context of digital teacher education.

These results show the capacity of digital tools and resources to promote moral education and also provide insights for teachers, researchers, and educational stakeholders seeking to develop moral education programs. The novelty of this systematic review, therefore, lies in teacher education in a digital context, which has received little attention in existing studies.

*Limitations.* No systematic review is exempt from limitations, and this review is no exception. The limitations of this systematic review are variation in study quality, language restrictions, and database coverage, all of which affect the generalizability of the results.

Moreover, the heterogeneity in the measurement of outcomes hindered quantitative synthesis. Another issue is a coherent understanding of fragmented knowledge.

This systematic review addresses gaps in the literature regarding the understanding of moral education in the context of online teacher education. This goes a long way to synthesize knowledge that is already fragmented into a coherent understanding. The fact that the results of this systematic review inform policy-making, teacher education programs, and the design of educational technology highlights actionable insights for enhancing moral development in the context of digital environments.

### **Conclusion**

This review achieved its aim of investigating moral development in digital teacher education to a great extent. It also identified the major trends, themes and possible outcomes in existing studies from 2020 to 2025.

In this systematic review, fragmented knowledge on digital tools, teaching approaches, and possible outcomes of interventions on moral development was synthesized; however, this provides a clearer understanding of this field. The findings of this systematic review show that virtual simulations, structured digital discussions, and case-based learning via learning management systems support moral development.

The second finding indicated that Kohlberg's cognitive development theory and Rest's four-component model received the most attention, whereas virtue ethics and care ethics received less attention.

Thirdly, the findings of this review show that research measures professional values, moral judgment, and quality ethical reflection. Still, these studies hardly assess long-term retention or the outcomes of teacher behaviors.

The fourth finding indicated that facilitators of moral development include reflection time and diverse opinions, whereas assessment problems and technical challenges are the key constraints. Based on the above conclusions, future studies should conduct longitudinal research to track the development of morals, particularly from teacher training through their early years. They should also conduct experimental research comparing digital teaching methods, as well as comparative studies exploring traditional teaching instruction and digital approaches to teaching and learning.

Science studies should be implemented, focusing on the essential factors influencing the fidelity and adoption of digital moral education practices. Warranted attention should also be given to under-researched populations. It is essential to integrate moral psychology and digital ethics to address the moral problems in digital environments. As teacher education programs continue to digitalize, it is essential to attend to moral development in online environments.

However, the generalizability of the findings in this systematic review was limited by the review's focus on studies from 2020-2025. Hence, studies with relevant information regarding the topic were not reviewed and analyzed. On this basis, it is recommended that researchers conducting similar studies expand their scope to obtain more reliable results.

### **Conflict of Interest Statement**

The authors declare no potential conflicts of interests regarding the research, authorship, or publication of this article.

### **Author Contributions**

Galymzhan Tantakov: Conceptualization, Methodology, Supervision, Proofreading. Perizat Seiitkazy: Data Collection and Curation, Resources, Validation, Writing – Review and Editing. Sharban Maigeldiyeva: Literature Review, Data Analysis, Visualization, Writing – Original Draft, Final Editing.

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