

NARRATIVE REVIEW: IMMERSIVE LEARNING TECHNOLOGIES AND THEIR ROLE IN MORAL AND VALUES-BASED EDUCATION

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Abstract: *This review looks at how immersive learning technologies, especially augmented reality and virtual reality, can help teach values and ethics. The goal is to bring together what researchers have found, spot areas that need more study, and suggest ways to use these tools better in schools. As the world faces difficult challenges, it's more important than ever to teach students how to think ethically, feel empathy, and take responsibility for their actions. AR and VR create realistic, interactive experiences that let students explore moral choices and value-based situations. But the research on this topic is scattered, with mixed results and not much agreement on the best ways to use these technologies, how effective they are, or how to teach with them. To find the research, we looked in several databases like Scopus, ERIC, ScienceDirect, and Google Scholar, using keywords like immersive learning, AR/VR, moral education, ethics, and digital teaching. We included studies from 2015 to 2025 that looked at these technologies in high school or university settings and focused on teaching values or ethics. We also checked references from other studies to make sure we covered all relevant work. The review found that features like feeling present, taking someone else's point of view, and physically experiencing a situation help students engage more deeply and reflect on ethics. AR helps connect learning to real life, while VR is good for simulating moral choices. Even though some studies show short-term improvements in empathy and ethical thinking, there are still issues with how we measure these effects, the number of people studied, and how long the results last. There are also worries about fairness, access, and how well the ethical situations in these technologies are designed. These tools can be useful for teaching values if they're used with clear ideas and thoughtful reflection. Future research should look into creating learning experiences with input from teachers and students, developing better ways to measure progress, and making sure these tools work well for everyone, so that values education can be meaningful and fair in the digital world.*

Keywords: *Immersive learning technologies, moral education, augmented reality, virtual reality, empathy, values education*

Introduction

In a world that's getting more complicated and connected, it's important to teach people how to think morally and build values-based education. Today, societies are dealing with big ethical problems like climate justice and online honesty. Teachers are being asked to help students understand right and wrong, feel empathy, and make smart choices. But traditional teaching methods aren't always working well for these goals. That's why new learning tools, especially Augmented Reality (AR) and Virtual Reality (VR), are becoming important (Crogman et al., 2025). These technologies let students experience moral situations in a realistic but safe way. They provide hands-on, engaging experiences that help students connect emotionally and think deeply. Some research shows that AR and VR can help students develop empathy, see things from others' viewpoints, and become more aware of ethical issues. However, the results are not always the same and depend on the situation and how the technology is used. For example, a study in South Korea used VR to teach morals to elementary students and found that it improved their ability to understand right and wrong, but didn't immediately make them better at making moral decisions (Shim, 2023). This suggests that different teaching methods using VR might affect the mind in different ways. Larger research shows that using immersive learning can be very motivating and help students remember things better, but there are still problems with getting access to these tools, using them in real classrooms, and making sure the effects last over time. This review looks at the ideas, teaching methods, and results of using AR and VR in education that focuses on morals and values (Jiang et al., 2025). It especially looks at how these technologies fit into Bloom's Taxonomy, which is a way of organizing learning goals. In this case, "immersive learning technologies" mean digital environments whether they're created or added on top of real life that make learning more interactive, emotionally engaging, and reflective. By looking at studies from high school and university settings between 2020 and 2025, this review shows both the exciting potential and the unanswered questions about how to design these tools, how well they match different levels of thinking, and how effective they are in the long run. The aim is to provide useful advice and new research ideas for using AR and VR in education in the context of Education 4.0 in a responsible and effective way (Jiang et al., 2025).

Methods

To carry out this narrative review on immersive learning technologies and their role in teaching morals and values, a thorough and organized search of the literature was done using several trusted electronic databases. The main databases used were Scopus, ERIC (Education Resources Information Center), Google Scholar, and ScienceDirect. In addition, a manual search was carried out by looking through the reference lists of important articles and review papers to find relevant studies that might not have been found in the first search.

The search approach used a mix of Boolean operators and keyword phrases to make sure a broad range of relevant materials was covered.

The main search terms included:

("immersive learning" OR "virtual reality" OR "augmented reality" OR "simulations") AND ("moral education" OR "ethics" OR "values education" OR "character education") AND ("technology" OR "digital tools" OR "educational technology" OR "e-learning") AND ("engagement" OR "participation" OR "interaction" OR "experience")

To be included, studies had to: (1) look specifically at how AR, VR, or other immersive tech is used in teaching morals or values; (2) focus on students in high school, college, or teacher training programs; and (3) offer ideas, research findings, or theories related to teaching methods or how lessons are designed. Studies were excluded if they weren't fully available, if they weren't about education, or if they only talked about the technology without linking it to learning. This way of choosing studies made sure the review brought together good, relevant research that gives a full picture of what's known, what's being done, and where more research is needed in this area.

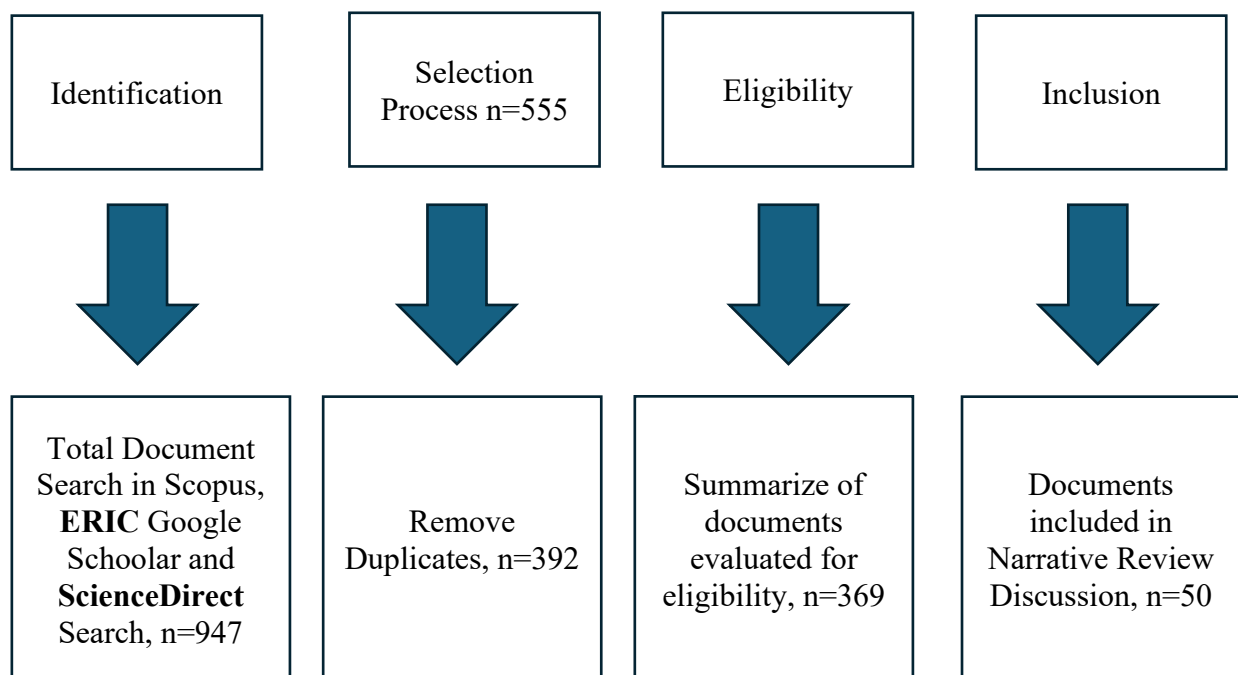


Figure 1. Prisma-based Flow Diagram of Document Selection Process for Narrative Review: Immersive Learning Technologies and Their Role in Moral and Values-Based Education

Nineteen unique searches were executed, systematically covering theoretical, empirical, and interdisciplinary perspectives on immersive learning and moral education.

Discussion

Synthesis Analysis

Definition and Scope

Immersive learning uses technologies like Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR), all part of Extended Reality (XR). These tools create digital environments that help learners feel more present and involved by using realistic settings or adding digital

elements to the real world (Lee & Hu-Au, 2021). In values-based education, these technologies are used to create experiences that help students understand morality, like scenarios that build empathy, simulations that teach civic responsibility, and situations that challenge students to think about different perspectives. These experiences are meant to connect with learners emotionally and encourage them to think about right and wrong, and their responsibilities in meaningful situations (Kissel & Ramirez, 2023). AR adds ethical stories or prompts to real places, like a classroom or a field site, where students can interact with moral choices. VR, on the other hand, creates fully simulated environments where students can experience moral dilemmas without many distractions. A study by (C. Y. Chang et al., 2023; Gabriels & Volkman, 2025) found that most educational XR research focuses on how easy these tools are to use, rather than how well they help students develop moral reasoning or internalize values. New frameworks like XR Ed and MetaLab are trying to make ILT design better for education by focusing on things like how students take control of their learning, how they interact with others, and how their learning is assessed, especially when it comes to moral thinking and ethical reflection. However, there is not much research on how effective these immersive learning tools are in teaching morality, especially in high school and college settings.

Theoretical Foundations for Moral and Values-Based Learning

Current research on immersive moral education usually bases the design of interactive learning tools on classic and newer theories about how people develop morally, like Kohlberg's stages of moral growth, Rest's Four Component Model, Turiel's social domain theory, and Haidt's social intuitionist view. These ideas are also supported by learning approaches that focus on real-world, body-based, and hands-on experiences. New studies back up this mix of theories. For example, Dunivan and others did experiments using virtual reality and tested moral psychology tools like the DIT 2 and Moral Foundations Questionnaire (Dunivan et al., 2024). They found that people's moral thinking changed from focusing on their own interests to thinking about broader social rules, especially in terms of caring for others, but there was no clear change in how much they felt empathy or compassion. This suggests that thoughtful, structured thinking rather than just feeling emotions might be what leads to lasting moral growth, which matches Rest's idea that moral development is about careful thinking and judgment (Tienne et al., 2021). On the other hand, some studies, like one by Bae and others, show that using VR to train empathy can help university students take others' perspectives and develop a more growth-minded attitude toward empathy. Also, reviews of studies show that using AR or VR can improve empathy, but these studies often don't properly test deeper moral thinking skills (C. Y. Chang et al., 2023).

Across these studies, a clear pattern shows that most agree immersive experiences and real-life context help people engage more deeply (Melendez et al., 2025). However, there is still debate about what really leads to long-term moral growth. Some believe that feeling strong emotions during an experience helps people become more aware of moral issues. Others think that structured discussions and reflection are needed to turn those feelings into clear moral decisions. The most common finding is that talking about the experience, reflecting on it, and discussing it with others are key to turning immersive moments into real moral learning. Without this support, the increased empathy people feel often doesn't last or connect well with deeper moral thinking. Few studies look at both emotional and cognitive changes over time. Many only look at empathy or emotions without checking if people's moral thinking improves according to models like Kohlberg's or Rest's. Also, research rarely compares different approaches based on various theories, like intuitive versus cognitive models, to see which works better (Bajovic & Rizzo, 2021; Yalçın & DiPaola, 2020).

Mechanisms of Action: Presence, Perspective-Taking, and Embodiment

Recent studies on moral and values-based education using immersive methods have found three connected ways that Immersive Learning Technologies (ILTs), like Virtual Reality (VR) and Augmented Reality (AR), help develop moral thinking: presence, perspective-taking, and embodiment. The first is presence, which means feeling like you're there in a simulated environment. This feeling makes learners more focused, emotionally involved, and aware of the moral choices they face (Silaiyappan & Palaniyandi, 2025). A study by (Rueda & Lara, 2020) showed that when students experience strong presence in VR situations that involve ethics, they become more emotionally engaged, which leads them to think more deeply about the right thing to do and the effects of their actions. But this strong emotional reaction often doesn't last long and doesn't always result in real, lasting changes in behavior. The second way to help learners is called perspective-taking, which means letting them see things from someone else's point of view, especially people who face unfair treatment or are left out. (Nakamura, 2020) found that when people took on the role of someone who was treated unfairly in a virtual reality setup, they acted kinder and were fairer in later tasks. Using immersive media to take someone else's perspective helps people feel more empathy and understand social rules better by letting them see how others feel and what is right. (Van Dijk & De Dreu, 2021) also found that when people physically experience a situation in a social conflict simulation, they communicate better with others, have less bias, and make more inclusive moral decisions. These results show that taking someone else's perspective in virtual or augmented reality can improve both thinking about others and feeling for them, which are important for making fair and ethical choices.

The third way VR helps people learn ethics is through embodiment. This means learners get to experience situations from the perspective of a character facing a moral choice. In a study by (Rueda & Lara, 2020), university students who lived through moral dilemmas as if they were the characters showed more empathy and were more willing to grow in their understanding of ethics. Embodiment helps people not only feel what others feel but also think through the right choices, which helps them really understand moral issues.

Even though VR can boost empathy and concern for others in the short term, there's still debate about whether these changes last in real life and if they really change people's behavior long-term (Sora-Domenjó, 2022). Some people say VR is like an "empathy machine" because it can make people feel deeply connected to others through stories. But others warn that just feeling a powerful emotion doesn't mean someone will act ethically. They say that newness, wanting to look good, and just having a strong emotional reaction might not lead to real moral growth. If VR experiences are not carefully planned, they might just feel exciting but not help people think deeply about right and wrong (Lavoie et al., 2021). So, more and more people are realizing that just feeling strong emotions isn't enough when it comes to learning ethics. To really change how people think about right and wrong, these experiences need to be carefully planned with reflection, discussion after the experience, and support that helps people think about their own thinking. (Brunetti et al., 2024) said that talking through what happened after an immersive experience helps learners better explain their values and make strong arguments for their choices. This makes emotional experiences lead to clearer, more thoughtful ethical decisions. But there's still a lot we don't know, especially about how these methods work over time, how they all fit together, and how they work in different cultures and schools. Future studies need to use thorough research methods that look at both immediate and long-term effects of these kinds of learning experiences (Zhang, 2020).

Design Patterns and Pedagogies

Recent studies from 2020 to 2025 show that the success of immersive learning technologies in teaching morals and values depends a lot on how they are designed and used in the classroom. These methods often include activities like solving moral dilemmas, acting out different roles, making choices in a story that changes based on decisions, and then discussing those choices with guidance (Qiu, 2025). These approaches are based on well-known theories about how people develop morals, such as Rest's Four-Component Model and social domain theory. These teaching methods help students think through complex moral situations in a thoughtful way, which builds both empathy and the ability to reason about right and wrong (Rodiya et al., 2023).

New research shows that using augmented reality (AR) for teaching morals works well when it helps students notice things in their surroundings. With AR, students can explore real places with digital images added on top, which makes them think about important issues like taking care of the environment, being responsible members of society, and making right choices (Chen, 2022). For example, when AR is used in lessons about being citizens, students get better at seeing the values involved in their own communities, which makes them more aware of moral situations and more thoughtful about them (Tijmsa et al., 2020). On the other hand, virtual reality (VR) is better for putting students in situations where they have to make tough decisions, like acting in emergencies or standing up for others, because VR can make them feel fully present and emotionally involved (Madden et al., 2020). This matches what (Mayer et al., 2001) found that VR helps people feel more connected to the experience when it includes personal feedback and strong emotions.

However, even though there is more research on this topic, a big issue remains: the lack of clear explanations about why certain teaching methods are used. Many studies don't explain how learning tasks were planned, what ideas about right and wrong influenced the material, or how they checked if students learned (Chang et al., 2020; Perry et al., 2023; Schmidt et al., 2011). Also, how well these teaching methods are actually carried out whether they are done exactly as planned is rarely recorded. This makes it hard to repeat the same approach or compare different ones. Furthermore, many programs that use immersive learning tools don't include teachers in the process, which is a problem (Kuhail et al., 2022; Serrano-Ausejo & Mårell-Olsson, 2024). Teachers are important because they help students think about what they've learned, guide discussions, and connect the learning to what students already know in school (Mollick, 2023). Without teacher support, these technologies might just create exciting moments but not really help students build strong ethical thinking skills (Mejia & Sargent, 2023).

To solve these problems, recent studies suggest working together with teachers and students to make lessons more consistent and relevant to real-life situations (Matlala, 2021; Nieminen et al., 2022). Also, using the ideas from universal design for learning (UDL) in AR/VR moral education can help meet different learning needs, make content easier to access, and allow for more personalized teaching (Fortes et al., 2024; Thangavel et al., 2025). Moving forward, there is a strong need for better teaching methods that explain how to design, assess, and include immersive experiences in school settings so that they can fully support moral education (Al Shawabkeh & Arar, 2024; Beck et al., 2024; Brunetti et al., 2024).

Advantages and Affordances

A lot of recent studies from 2020 to 2025 show that immersive learning technologies, especially AR and VR, have unique benefits for teaching morals and values. First, these technologies put moral topics in real-life situations, helping learners think about real ethical problems, like VR experiences that show community challenges or AR features that make people think about civic issues (Sviridova et al., 2023). Second, they create a safe environment for making moral decisions, allowing learners to explore choices without facing real-world dangers, which helps them apply what they learn to bigger discussions about morals (Qiu, 2025). Third, these technologies help people feel more emotionally connected, which increases empathy and emotional understanding; research shows VR leads to better cognitive involvement and emotional connection than traditional methods (Aukland et al., 2024). Finally, these tools can collect detailed information about how people learn, such as their decisions and interactions, which can help with reflection and tracking moral thinking over time (Sviridova et al., 2023). When these features are used along with organized thinking and supervised discussion, learners can move from simple moral feelings to deeper ethical thinking and explaining their reasoning. Other research shows that using immersive learning tools helps teach complex ideas like compassion, sense of duty to the community, and emotional responses related to morality, which are hard to teach with traditional teaching methods (Calvert & Hume, 2022). In general, these features make immersive learning tools strong tools for teaching morals provided their design includes thoughtful reflection and assessments based on solid theory (Hamilton et al., 2021; Marougkas et al., 2023).

Limitations, Risks, and Controversies

Key Synthesis Analysis: Limitations, Risks, and Controversies Recent studies from 2020 to 2025 highlight several important issues and debates about using immersive learning technologies (ILTs) in teaching morals and values. One big problem is that these technologies can be overwhelming for learners. The Cognitive Affective Model (CAMIL) by Makransky and Petersen shows that too much immersion and interaction can confuse students and make it harder for them to understand or do tasks, especially if there isn't enough help or guidance (Petersen et al., 2022). Another issue is simulator sickness, which causes problems like nausea, headaches, and feeling dizzy (Madden et al., 2020). This can make VR learning sessions uncomfortable and less engaging, which might make people less likely to use these technologies again (Holly et al., 2021; Petersen et al., 2022). Equity and access are also major concerns. (Matome & Jantjies, 2019) point out that the high cost of equipment, uneven internet access, and limited availability in poorer areas make it hard for everyone to use these tools. Without fair access, moral education through immersive tech could make learning opportunities even less equal. Also, there are ethical problems when simulations deal with sensitive topics, like reenacting traumatic events or having people take on different identities (Siddiqi, 2024). If these simulations are not designed carefully or if there's no proper support after the experience, they might spread harmful stereotypes or cause people to feel hurt again (Kaddoura & Al Hussein, 2023).

Studies comparing virtual reality with other methods show that VR isn't always better. When people get the same amount of guidance and spend the same time learning, desktop simulations can work just as well (Radianti et al., 2020). This makes us question whether VR is truly better for teaching moral values. Another issue is that research often focuses on positive results, while studies showing no effect or negative results are not reported as much (Shim, 2023). These problems highlight the importance of careful planning in teaching, making sure everyone has

equal access, creating ethical learning situations, and being honest about the results. This helps ensure that these teaching tools really help with learning good values without causing any harm. Evidence of Effectiveness and Outcome Patterns

Recent studies from 2020 to 2025 show that immersive learning technologies (ILTs) help improve short-term emotional outcomes like empathy, emotional connection, and concern. A big review by Trevena and others in 2024 found that using virtual reality (VR) often increases empathy, especially when people take on different perspectives, which helps improve emotions in educational settings. But when looking at things like moral reasoning, the results are mixed (Wang et al., 2023). In two studies by Dunivan and others in 2024, there was no big change in empathy or compassion, but people did show better moral reasoning, like moving toward higher stages of moral thinking, and they also had more focus on caring and avoiding harm. This suggests that ILTs alone can boost emotional empathy, but to really grow in moral thinking, it's better to combine them with teaching and testing that focuses on reasoning (Fortes et al., 2024).

Behavioral results, like helping others or making good choices in real-life situations, are the least often studied and have the smallest and most changeable effects (Fortes et al., 2024). A review by (Kleinlogel et al., 2023; Nikolaou et al., 2022) shows that taking another person's viewpoint is the most common way VR experiences lead to more caring attitudes, but real changes in behavior are not well documented. Across many studies, there's a common pattern how well the experience is designed like having clear goals, step-by-step support, guided discussions, and a solid theory base makes a bigger difference than whether it's AR or VR (Hilty et al., 2020). Studies that don't have a clear teaching plan tend to have weaker or mixed results. There are still big gaps in the research, such as a lack of long-term follow-up, large studies in real classrooms, and direct comparisons between AR and VR when they're trying to teach the same moral ideas.

Assessment, Implementation, and Future Directions

Recent studies show that to properly evaluate immersive learning technologies in teaching morals, it's important to use different ways of assessment. This includes using tools that have been tested and proven reliable, like scales that measure how much someone feels immersed, the Interpersonal Reactivity Index for understanding others' feelings, and the DIT 2 for thinking about right and wrong (Nikolaou et al., 2022). These are combined with data from how people perform and what they write or reflect on. For example, Dunivan and others in 2024 used these tools to see changes in how people think about moral issues, even when their feelings of empathy and compassion didn't change, showing how important it is to use thorough evaluation methods (Frentzel-Beyme & Krämer, 2022). Similarly, Aguirre Calan and others in 2024 used the IRI in a study that looked like an experiment and found that students showed better empathy and academic results after using VR (Hoter et al., 2024). However, the field still has problems because there are many different tools used, not enough studies are planned ahead of time, and the number of people studied is often small. This makes it hard to compare results and apply them more widely. While more studies using multiple methods are starting to appear, there isn't enough research yet to fully support using combined assessment models.

When putting these ideas into action, important factors include teachers being prepared, the curriculum being well-integrated, and policies that focus on ethics, especially regarding data privacy and how scenarios are designed (Ergüzen et al., 2021). emphasize the importance of having easy-to-use infrastructure, shared virtual reality labs, and designs that work with any device to help reduce access problems in places with fewer resources. Looking to the future,

the research strongly suggests several areas for further study: (1) creating interventions that are designed together with teachers and students; (2) conducting properly planned and well-powered classroom experiments with follow-ups over time; (3) studies that consider different cultures and focus on fairness; and (4) evaluations that connect immersive learning tools to outcomes related to civic engagement and well-being. Making sure that the design of these immersive tools is based on clear theories will improve the reliability of the results and make the tools more useful in real-world settings, helping to spread the use of immersive moral education across various learning environments (Alnagrat et al., 2023; Doroudian, 2023).

Limitations

This review gives an overall picture of how immersive learning technologies can help teach morals and values, but there are some things to be aware of. First, since this is a narrative review, it doesn't have the same strong structure or ability to be repeated as a systematic review or a meta-analysis. The studies chosen were based on certain rules, but the choice might have been influenced by personal opinions, which could mean some studies were picked more because they were well-known or had positive results than because they were the best fit.

Another thing is that the studies looked at are very different in how they were set up, what they measured, and the kinds of technologies used. Some used AR, others used VR, and they had different ways of looking at the outcomes, like empathy, moral thinking, or helping behavior. They also involved different groups of people and used different ways to measure these things. This variety is good because it shows a wide range of ideas, but it makes it hard to compare the results or come to broad conclusions. For example, some studies focused on helping others, while others looked at how people think about right and wrong. Also, the tools used to measure these things, like the Defining Issues Test or Moral Judgment Interview, weren't always used in a consistent way, which makes it hard to bring all the evidence together.

Moreover, the small number of long-term studies and the limited size of samples in many experiments make it harder to support strong cause-and-effect conclusions. Also, most research depends on short-term reports from people about their moral involvement, without checking if their actions change or if their values become truly accepted this is a major missing part. Additionally, there's a chance that studies showing only positive results are more likely to be published, which could hide or miss results that show no effect or even negative outcomes this is especially important in a field where excitement about technology might be greater than careful research.

Finally, the focus on English-language, peer-reviewed articles from 2015 to 2025 may have missed important studies, especially from areas outside the West where the way moral education is taught might be quite different. Future reviews should use organized or wide-ranging methods, include sources that aren't usually published, and use special analysis techniques when needed. It's also important to compare results across different cultures, plan studies ahead of time, and follow clear rules for reporting findings. Fixing these issues will make the evidence clearer and more useful for understanding how immersive technologies can help teach important values and morals.

Conclusion

This review looked at how immersive learning tools, especially augmented reality (AR) and virtual reality (VR), can help teach morals and values. The study found that these technologies can create realistic situations that help students face moral choices, build empathy by seeing

things from others' points of view, and make learning about ethics more hands-on, especially when connected to well-known theories about how people develop morals and supported by teaching methods that encourage reflection. However, even though these tools show promise in affecting emotions and thinking, the research has big differences in how studies were done, uses unreliable tools to measure results, and lacks long-term or real-world evidence, which makes it hard to apply the findings in real classrooms. Other issues include fairness concerns, ethical problems in designing these tools, and not enough research on how they work in actual classrooms. These results directly answer the review's main questions by showing how these tools fit into teaching morals and pointing out both their strengths and weaknesses. To move this field forward, future studies should focus on creating learning experiences based on strong theories and made with input from teachers and students; compare AR and VR approaches; and build clear, culturally aware ways to assess what works. These efforts would make the research more reliable and help create fair policies and practices for using these advanced technologies to teach ethics, empathy, and critical thinking in the new Education 4.0 era.

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