

Enhancing Moral Literacy Through Structured Habitual Behavior Intervention: A Quasi-Experimental Study in Chinese Vocational Education School

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ABSTRACT

Background: Moral literacy is essential for vocational students to navigate ethical challenges in personal and professional contexts. Conventional moral education often yields modest improvements, highlighting the need for structured interventions that cultivate ethical habits and actionable moral reasoning.

Objective: This study examined the effects of habitual behavior cultivation on the moral literacy of vocational students, focusing on three dimensions: ethical sensitivity, ethical reasoning, and ethical motivation/action.

Methods: A quasi-experimental design was employed involving 120 students from two intact classes at a higher vocational college in Guangdong Province. One class served as the experimental group, receiving structured interventions integrating classroom behavior routines, community service, and reflective exercises, while the control group continued with standard moral education practices. Moral literacy was assessed using a validated 24-item Likert scale grounded in Tuana's Moral Literacy Framework. Pre-test and post-test data were collected over one semester. Multivariate Analysis of Covariance (MANCOVA) and univariate ANOVAs were performed to evaluate intervention effects.

Results: Pre-test scores indicated comparable low levels of moral literacy across both groups. Post-intervention, the experimental group demonstrated substantial improvements, achieving high scores in ethical sensitivity ($M = 4.05$), reasoning ($M = 4.01$), and motivation/action ($M = 3.91$), whereas the control group showed moderate gains. Multivariate analyses (Pillai's Trace) confirmed significant overall differences ($p < .001$), and univariate tests indicated large, statistically significant improvements for the experimental group across all dimensions.

Conclusions: Structured habitual behavior interventions significantly enhance moral literacy in vocational students, exceeding the effects of conventional curricula. The findings suggest that integrating habit-based ethical activities, reflection, and real-world moral practice can effectively develop students' ethical competence. Educational institutions are encouraged to adopt these strategies to promote sustained moral development, while future research should assess the long-term retention and cross-cultural applicability of such interventions.

Keywords

Moral literacy; Habitual behavior; Vocational education; Ethical sensitivity; Ethical reasoning; Moral motivation; Chinese traditional values

INTRODUCTION

Moral literacy, defined as the ability to recognize, reason about, and act on ethical issues, is a primary focus in the education of students in Chinese vocational schools. Cultivating habitual behavior, particularly those rooted in traditional Chinese values, is increasingly viewed as a key strategy for enhancing students' moral development and preparing them for their societal roles (Li, 2024). Incorporating traditional virtues such as kindness, filial piety, and loyalty into daily routines and educational practices helps students internalize moral principles and apply them in real-life contexts (Li, 2024). In vocational schools, moral education is often integrated within subject teaching, such as Chinese language courses, where instructors deliberately foster students' moral character alongside academic content (Yuan, 2021). Establishing a positive classroom culture is crucial, as it shapes students' personal qualities, social responsibility, and collective consciousness through a supportive and harmonious environment (Liu, 2024). Additionally, blended learning methods, supported by thorough evaluation systems, facilitate continuous monitoring and enhancement of moral development, ensuring students' progress morally in tandem with their academic and professional skills (Zhao et al., 2024). Moreover, partnerships between schools and businesses in vocational education offer opportunities to combine moral education with professional training, enhancing students' practical skills and ethical standards in the workplace (Zhang, 2020).

Recent policy frameworks in China emphasize the integration of moral education into all facets of schooling, promoting coordinated, value-based educational systems (Xue & Li, 2020). The development of new curriculum models that link moral and academic education has shown promise in boosting students' engagement, learning abilities, and classroom involvement, thereby supporting the growth of moral literacy through habitual behavior (Pan, 2022). Moral literacy is essential in education, encompassing ethical sensitivity, ethical reasoning, and ethical motivation and action. Cultivating habitual behavior, particularly through structured interventions, is increasingly recognized as an effective means of developing these facets of moral literacy (Nurizah & Amrullah, 2024). In educational settings, systematic habituation practices, such as daily routines and value-centered activities, significantly enhance students' moral behavior and engagement, helping them internalize ethical values (Nurizah & Amrullah, 2024). The school environment, including collaboration between teachers and families, plays a vital role in promoting these habits and ensuring long-lasting moral development (Widat & Wulandari, 2023). Neuroscientific research supports the notion that repeated moral actions can strengthen neural pathways associated with virtue, providing a biological basis for the effectiveness of habituation in moral education (Han, 2023).

Although moral literacy is recognized as a crucial component of student development in educational systems worldwide, there is a significant gap in the empirical research examining the impact of structured habitual behavior interventions on moral literacy, particularly in the context of vocational education. Most existing studies focus on moral education as part of general curriculum development but fail to address how habitual behavior interventions specifically those designed to cultivate ethical sensitivity, reasoning,

and moral action affect students' long-term moral development in vocational school settings. Moreover, while traditional Chinese values are often integrated into moral education, limited research has explored how these values, when incorporated into structured daily routines and behavioral activities, influence the moral literacy of students in vocational education. Vocational schools in China face unique challenges, as they not only need to develop technical and professional skills but also foster ethical competencies that prepare students for the demands of the workplace. The absence of focused interventions that merge moral education with professional training leaves a gap in understanding how these two domains can be integrated effectively. Despite growing interest in moral literacy, there is a lack of research applying quasi-experimental or experimental methods to assess the impact of structured, routine-based interventions on the moral development of vocational students. This study aims to fill this gap by exploring how structured habitual behavior interventions can enhance moral literacy, including ethical sensitivity, reasoning, and ethical motivation, within the context of a Chinese vocational education school. Specifically, it seeks to examine whether these interventions can make a measurable difference in the students' moral behavior and ethical decision-making abilities. The study's findings could offer valuable insights into how vocational schools can integrate moral education into their curricula and the potential benefits of embedding moral principles in everyday educational practices, ensuring that students not only acquire technical skills but also develop the moral competencies needed to thrive in their careers and society.

LITERATURE REVIEW

Theoretical Framework

The theoretical framework for this study is grounded in a combination of Moral Literacy Framework, Habit Formation Theory, and Cultural Socialization Theory. These theories provide the foundational understanding necessary to examine the impact of habitual behavior interventions on moral literacy in vocational education settings.

Moral Literacy Framework

The ability to identify, consider, and act upon ethical dilemmas is referred to as moral literacy (Tuana, 2007). Ethical sensitivity, ethical reasoning, and ethical motivation/action are the three main aspects of this theory. Acknowledging the existence of ethical dilemmas in many situations is a key component of ethical awareness. The capacity to critically assess these matters is known as ethical reasoning, and the propensity to act on moral judgments in practical situations is known as ethical motivation or action. The main lens used to evaluate moral literacy in vocational students is this framework. In the context of vocational education, moral literacy is essential for students' performance in professional situations where making moral decisions is vital, as well as for their personal growth. The framework will direct the investigation by looking at how structured interventions were created.

Habit Formation Theory

This study revolves around the idea of habitual behavior formation. According to the behavioral psychology-based Habit Formation Theory, a person's character and decision-making process can be shaped by the stable behavior patterns that result from repeated behaviors over time (Widat & Wulandari, 2023). This idea holds that repeated behaviors become habitual and become part of a person's behavior, impacting decisions and actions in the future. The process by which moral behaviors—like deeds of compassion, justice, or integrity—become embedded via regular practice is known as habitual behavior in the context of moral education. According to the notion, students' capacity to make moral decisions in difficult situations is improved and moral values are strengthened via regular engagement in ethical activities (Han, 2023). This study uses Habit Formation Theory to investigate how structured interventions

that promote consistent moral behavior, like community service or classroom behavior routines, help children internalize moral ideals and improve their moral literacy.

Cultural Socialization Theory

Cultural Socialization Theory highlights how culture shapes people's morality, beliefs, and behaviors (Gjerde, 2020). Cultural values like loyalty, respect for authority, and filial piety are important for students' moral growth in vocational education, especially in the Chinese context. These principles have a significant impact on students' ethical attitudes and actions because they are ingrained in the curriculum and teaching methods. This idea holds that education is about teaching culturally meaningful values that direct moral reasoning and behavior in addition to imparting knowledge. In Chinese vocational schools, students' moral frameworks are shaped by regular behaviors associated with traditional virtues. According to the notion, moral literacy can be improved by incorporating cultural values into teaching methods, such as incorporating acts of respect or filial piety into everyday activities and moral decision-making situations. This study emphasizes the importance of cultural socialization in developing moral literacy in vocational students by looking at how habitual behavior treatments include cultural values.

Moral Literacy in Educational Settings

Moral literacy is a multifaceted concept that involves recognizing ethical issues, engaging in ethical reasoning, and taking ethical actions (Tuana, 2007). In educational settings, moral literacy is essential for fostering individuals who are capable of making ethical decisions in diverse life contexts. Scholars emphasize that moral literacy is not limited to ethical sensitivity (the awareness of ethical issues) but also includes ethical reasoning (the ability to critically evaluate moral issues) and ethical motivation and action (the ability to apply ethical decisions in practice) (Narvaez, 2010). In vocational education, moral literacy is crucial for preparing students to navigate ethical challenges in their professional careers. While technical skill development remains a core focus, integrating moral education into vocational curricula is essential to equip students with the necessary ethical competencies (Xue & Li, 2020). Despite its importance, moral education often remains secondary to the technical training in vocational schools, underscoring the need for a more structured approach to integrating moral education into vocational training. Based on the analyses above, we formulate the research Hypothesis as follows:

Hypothesis 1:

Students who undergo structured habitual behavior interventions shows significant improvement in their overall moral literacy compared to students who follow the standard moral education curriculum.

The Role of Habitual Behavior in Moral Development

The premise that repeated activities create persistent patterns that eventually mold a person's character and decision-making processes is the foundation of the cultivation of habitual behavior. Moral literacy can be effectively promoted by habitual behavior interventions, such as encouraging regular moral activities (such as compassion and responsibility). According to research, when moral habits are correctly cultivated, they result in beneficial ethical actions (Widat & Wulandari, 2023). Traditional values like loyalty and filial piety are frequently included into daily routines in Chinese education, which improves students' moral growth (Li, 2024). Research indicates that including community service or acts of kindness into a student's daily routine aids in the internalization of ethical concepts, increasing the automaticity and ingrainedness of moral behavior (Nurizah & Amrullah, 2024). The effectiveness of habit development is further supported by neuroscientific research, which shows that moral behavior strengthens brain pathways associated with virtue (Han, 2023).

Hypothesis 2:

The experimental group (receiving structured habitual behavior interventions) will show a greater increase in ethical sensitivity, ethical reasoning, and ethical motivation/action scores compared to the control group.

Integrating Moral Education with Vocational Training

Although technical skill development is frequently emphasized in vocational education, it is becoming more widely acknowledged that students also need to have ethical competencies for the workplace. It is believed that incorporating moral education into vocational training is crucial to developing well-rounded professionals who can make moral decisions in addition to being skilled at technical activities (Zhang, 2020). Partnerships between businesses and vocational institutions offer special chances to integrate professional training with moral education, enabling students to use ethical reasoning in real-world work environments. These collaborations strengthen the need for integrated curricula that promote both technical and moral development by bridging the gap between academic training and the ethical requirements of the working world.

Hypothesis 3:

Cultural values embedded in the habitual behavior interventions will have a significant impact on the improvement of moral literacy among students in the experimental group, particularly in dimensions related to ethical motivation and action.

2.5. Quasi-Experimental and Experimental Studies on Moral Education

While much of the existing research on moral education is descriptive, there is a notable lack of quasi-experimental and experimental studies examining the direct effects of structured habitual behavior interventions on moral literacy in vocational education. Some studies, like those by Pan (2022), have explored integrating moral and academic education, demonstrating improved student engagement. However, few studies rigorously measure the impact of habitual behavior interventions on students' ethical sensitivity, reasoning, and motivation/action. This gap in the literature underscores the need for experimental research to examine how habitual behavior cultivation directly influences these aspects of moral literacy, particularly in vocational education settings.

Hypothesis 4:

The impact of structured habitual behavior interventions on moral literacy will be positively correlated with the length of time students have been exposed to these interventions.

Policy and Curriculum Frameworks in Moral Education

Recent policy frameworks in China emphasize the integration of moral education into all aspects of schooling, including vocational education. These policies advocate for the development of curriculum models that link moral education with academic and professional training (Xue & Li, 2020). However, despite the policy emphasis, many vocational schools continue to prioritize technical skills training, neglecting moral education in practice. This gap in the implementation of policy highlights the need for empirical research to explore how structured interventions that cultivate moral habits can be integrated into vocational curricula, addressing the moral development needs of students in these settings.

Hypothesis 5:

Students in vocational education who participate in structured moral habit interventions will show higher levels of engagement with moral education and improved ethical behavior in professional settings compared to those who only receive technical training.

RESEARCH METHODS

This study employed a quasi-experimental design to examine the effect of habitual behavior cultivation on the moral literacy of vocational students. The study involved two intact classes enrolled in the same moral education course at a higher vocational college in Guangdong Province. These classes were purposively selected to ensure consistency in curriculum, instructional environment, and demographic characteristics. The selection process aimed to minimize bias and ensure that the two groups were comparable in all aspects except for the intervention.

Control and Experimental Groups:

One class served as the control group, continuing with standard moral education practices as part of the regular curriculum. The other class acted as the experimental group, participating in structured interventions specifically designed to enhance the three key dimensions of moral literacy: ethical sensitivity, ethical reasoning, and moral motivation/action. These interventions were aimed at cultivating habitual behaviors that align with moral principles, integrating values such as kindness, responsibility, and social awareness into students' daily routines.

Sample Size

The total sample size for the study was 66 students, with 35 and 31 students in experimental and control, respectively. The sample size was determined using a power analysis to ensure sufficient statistical power to detect significant differences between the two groups. A minimum of 30 participants per group was required to achieve a power level of 0.80, considering an alpha level of 0.05. The students were assigned to the control or experimental group based on their class enrollment, ensuring that the groups were as similar as possible in terms of demographic characteristics, such as age, gender, and academic background. All participants were aged 18-20 years old.

Moral Literacy Assessment

Moral literacy was assessed using a 24-item Likert scale developed by the researchers, grounded in Tuana's (2007) Moral Literacy Framework. This framework encompasses three primary dimensions such as the ability to recognize ethical issues and the implications of ethical decision-making in various contexts, the capacity to critically evaluate moral dilemmas and think logically about ethical solutions, and the ability and willingness to act on ethical decisions in real-life situations. The scale was constructed based on a comprehensive literature review that examined moral education, habit formation, and adolescent development, ensuring a broad theoretical foundation. The items were translated into Simplified Chinese to ensure clarity and cultural relevance, as the study was conducted in China. Each of the three dimensions was assessed using eight items. Responses were rated on a 5-point scale (1 = Strongly Disagree to 5 = Strongly Agree), with predefined score ranges used to classify students' levels of moral literacy.

Content Validity:

Content validity was established by consulting three experts in moral education and educational management. They reviewed the items for clarity, relevance, and alignment with the theoretical framework. Additionally, reliability testing was conducted using a pilot group of students, yielding Cronbach's alpha values above 0.80 for all dimensions, demonstrating high internal consistency and reliability of the instrument.

Intervention Details

The intervention for the experimental group was designed to integrate habitual behavior activities into their educational experience. These included: classroom behavior routines (Daily structured activities aimed at fostering moral behavior, such as cooperative learning, conflict resolution, and respect for others.), community service activities (Volunteering and social responsibility tasks that allowed students to practice ethical decision-making in real-world contexts.), and integrative reflection (structured reflection sessions where students discussed their ethical challenges and personal experiences, promoting ethical reasoning and motivation for action.). The control group continued with the standard moral education curriculum, which consisted of theoretical discussions of moral values but did not include the habitual behavior interventions designed for the experimental group.

Data Collection and Ethical Considerations

Data were collected during the midyear term of the 2024-2025 school year using a pre-test/post- test design. Both groups completed the validated instrument at the beginning (pre-test) and again at the end of the intervention period (post-test). The intervention lasted for one semester, providing ample time for students to engage with the activities and internalize the moral behaviors. The administration of the instrument was facilitated by the course teacher, who ensured that both groups completed the surveys under similar conditions. To ensure ethical standards, ethical approval for the study was obtained from the Trinity University of Asia Institutional Ethics Review Committee (Protocol Code: 2025-2nd-CASE-Wang-v1). Additionally, informed consent was obtained from both the students and their parents or guardians. Participation in the study was voluntary, and all responses were anonymized to maintain confidentiality. Secure data storage protocols were followed to protect participants' privacy.

Data Analysis

Descriptive statistics (means and standard deviations) were calculated for the pre-test and post-test scores across the three dimensions of moral literacy (ethical sensitivity, ethical reasoning, and ethical motivation/action). To assess whether the intervention had a significant effect on the experimental group compared to the control group, a Multivariate Analysis of Variance (MANOVA) using Pillai's Trace was conducted. This analysis examined the overall differences between the two groups across all three dimensions of moral literacy. Following the MANOVA, univariate ANOVAs were performed where appropriate to investigate the specific effects on each dimension of moral literacy. This step allowed for a more detailed examination of how the intervention impacted ethical sensitivity, reasoning, and motivation/action individually.

RESULTS

Table 1 shows a clear increase in the moral literacy scores for both groups throughout the study. Before the intervention, both groups had similar and consistently low mean scores in ethical sensitivity, ethical reasoning, and ethical motivation/action, indicating that students started with a comparable baseline of moral literacy and that no pre-existing differences would skew the analysis. After the intervention period, however, a clear divergence was observed. The control group, which continued with standard moral education practices, showed noticeable but modest improvements, moving from low to moderate levels in all three dimensions. In contrast, the students in the experimental group, who took part in the structured habitual behavior program, made significantly stronger gains. Their posttest means scores increased from low to high in ethical sensitivity, ethical reasoning, and ethical motivation/action. This indicates not just a greater level of improvement but also a qualitative shift toward higher moral competencies. This pattern highlights the intervention's effectiveness in accelerating students' progress from recognizing ethical issues

to deeper reasoning and stronger motivation to act ethically, far exceeding the gradual growth seen in the control group.

Table 1

Pretest and Posttest Mean Scores of Moral Literacy Dimensions for Control and Experimental Groups

Dimension	Group	Pretest M (SD)	Interpretation	Posttest M (SD)	Interpretation
Ethical Sensitivity	Control	1.98 (0.31)	Low	3.04 (0.49)	Moderate
	Experimental	1.98 (0.30)	Low	4.05 (0.27)	High
Ethical Reasoning	Control	2.00 (0.24)	Low	3.04 (0.59)	Moderate
	Experimental	2.00 (0.29)	Low	4.01 (0.32)	High
Ethical Motivation & Action	Control	1.86 (0.14)	Low	2.94 (0.52)	Moderate
	Experimental	1.90 (0.16)	Low	3.91 (0.27)	High

Table 2 offers strong statistical support for the patterns seen in Table 1. Using multivariate analyses of covariance (MANCOVA) with Pillai's Trace as the main statistic, the results show that the habitual behavior cultivation intervention had a significant overall impact on students' moral literacy. Large Pillai's Trace values were recorded for ethical sensitivity (0.63), ethical reasoning (0.53), and ethical motivation and action (0.60). Each category had highly significant F ratios ($F = 62.52, 40.69, \text{ and } 53.36$ respectively, all $p < .001$). This indicates strong multivariate differences between the control and experimental groups after the intervention.

The univariate analyses further clarify these effects. Before the intervention, no significant differences were found between the two groups in any of the three moral literacy dimensions (p values ranging from .261 to .993). This confirms that both groups were statistically equal at the start, meaning any changes could be linked to the intervention rather than initial differences. In contrast, the posttest univariate tests revealed large and highly significant differences between the control and experimental groups ($F = 125.23$ for ethical sensitivity, $F = 81.84$ for ethical reasoning, and $F = 108.15$ for ethical motivation/action; all $p < .001$).

This mix of non-significant pretest differences and highly significant posttest differences provides strong evidence that the structured habitual behavior program, not just normal development or standard moral education, led to the greater improvements in moral literacy seen in the experimental group. These findings support the descriptive results in Table 1 while also confirming the intervention's effectiveness through detailed statistical analysis.

Table 2

Multivariate and Univariate Tests Comparing Control and Experimental Groups on Moral Literacy Dimensions

Dimension (Test)	Pillai's Trace	F	df1	df2	p	Significance
Ethical Sensitivity (Multivariate)	0.63	62.52	2	72	< .001	Significant

Pretest – Ethical Sensitivity (Univariate)	–	0.01	1	–	.925	Not Significant
Posttest – Ethical Sensitivity (Univariate)	–	125.23	1	–	< .001	Significant
Ethical Reasoning (Multivariate)	0.53	40.69	2	72	< .001	Significant
Pretest – Ethical Reasoning (Univariate)	–	0.00	1	–	.993	Not Significant
Posttest – Ethical Reasoning (Univariate)	–	81.84	1	–	< .001	Significant
Ethical Motivation & Action (Multivariate)	0.60	53.36	2	72	< .001	Significant
Pretest – Ethical Motivation & Action (Univariate)	–	1.28	1	–	.261	Not Significant
Posttest – Ethical Motivation & Action (Univariate)	–	108.15	1	–	< .001	Significant

Note. All multivariate tests based on MANCOVA. Pillai's Trace reported as the primary statistic.

DISCUSSION

The findings of this study corroborate broader evidence on the baseline ethical competence of students and underscore the critical role of targeted, structured instruction in promoting moral literacy. Studies in both healthcare and educational settings consistently demonstrate that, even after exposure to general curricula, professionals and students often exhibit suboptimal levels of moral sensitivity, ethical judgment, and related competencies (Ha & Oh, 2025; Soltani et al., 2023; Andersson et al., 2022). For instance, research in nursing reveals persistent gaps between the current and desired levels of ethical sensitivity and reasoning, emphasizing that mere exposure to ethics content does not automatically translate into improved moral competence (Ha & Oh, 2025). Similarly, systematic reviews indicate that standard educational programs may produce only modest or negligible improvements in moral sensitivity, or even result in declines in moral competence, suggesting that conventional approaches are insufficient in fostering robust ethical development (Andersson et al., 2022; Soltani et al., 2023).

In this context, the low pretest scores across all moral literacy dimensions for both the control and experimental groups strengthen the internal validity of this study by confirming that the baseline levels of moral competence were comparable. The uniformity of these scores reinforces the necessity for structured pedagogical strategies to elevate learners from this low starting point. Evidence from randomized and quasi-experimental studies suggests that moral education interventions employing interactive, discussion-based formats—such as moral dilemma discussions, case analyses, and group workshops—can lead to meaningful improvements in moral sensitivity and ethical reasoning when compared to traditional lecture-based instruction (Soltani et al., 2023; Khaghanizadeh et al., 2023; Jalali et al., 2024). However, it is also noted that some interventions may produce improvements only in specific areas (e.g., responsibility or ethical decision-making), while others fail to enhance overall moral sensitivity. These variations highlight the importance of content, method, and dosage in effectively translating initial moral competence into more robust moral literacy (Ertuğrul et al., 2022; Soltani et al., 2023; Khaghanizadeh et al., 2023).

After the intervention, the experimental group exhibited substantial improvements, reaching high posttest scores across all three moral literacy dimensions, which is consistent with research indicating that structured moral education programs, especially those incorporating active engagement, reflection, and scenario-based learning, can significantly enhance sociomoral reasoning and moral competence (Bulut et al., 2024; Scuotto et al., 2024; Aljabery et al., 2025). Programs focusing on moral dilemmas, perspective-taking, and ethical decision-making have demonstrated sustained improvements in moral reasoning and related ethical skills (Bulut et al., 2024; Heynen et al., 2023). Additionally, digital and arts-based interventions, when integrated thoughtfully into the curriculum, have proven effective in developing virtue literacy and fostering critical moral reflection, particularly when aligned with the educational context (Waage, 2023; Scuotto et al., 2024). Systematic reviews confirm that interventions tailored to the specific needs of learners, and delivered through interactive, reflective, or model-based methods, are most effective in promoting moral literacy (Morley et al., 2021; Bronikowska et al., 2024). Overall, these findings align with existing literature and affirm that intentional, well-designed interventions lead to substantial gains in moral literacy in educational settings (Scuotto et al., 2024; Bulut et al., 2024; Bronikowska et al., 2024). The statistical analyses presented in Table 2 further validate the significant impact of the intervention. No significant differences were observed between the control and experimental groups in any dimension of moral literacy prior to the intervention, consistent with research that suggests baseline moral sensitivity and reasoning are often similar across groups before targeted educational efforts (Bulut et al., 2024). However, post-intervention, the experimental group demonstrated significantly higher scores in ethical sensitivity, reasoning, and motivation/action, as confirmed by both multivariate and univariate analyses (Bulut et al., 2024). These results underscore the effectiveness of the structured habitual behavior interventions in enhancing students' moral literacy compared to the control group, which showed only moderate improvements.

The literature supports the view that structured moral education programs, particularly those that extend beyond traditional didactic content, are the most effective. Active, participatory learning formats—such as group discussions, Socratic questioning, and case-based learning—have been shown to produce larger improvements in moral reasoning and moral sensitivity than conventional lecture formats (Khaghanizadeh et al., 2023; Andersson et al., 2022). Furthermore, integrative reviews of ethics education in healthcare highlight the variability in course design and outcomes: while some programs lead to significant gains in moral sensitivity and ethical confidence, others show stagnation or even small declines, indicating that the effectiveness of ethics curricula depends heavily on the quality and alignment of the program with real-world contexts (Andersson et al., 2022; Khaghanizadeh et al., 2023).

In addition, digital and simulation-based interventions offer an innovative dimension to moral education. A scoping review of digital morality interventions reports generally positive effects across educational, professional, and sports contexts, especially when immersive, interactive simulations allow learners to "exercise" their moral reasoning in complex, real-life scenarios (Scuotto et al., 2024). AI and VR-enhanced ethics training have also been shown to outperform traditional role-playing exercises in promoting ethical reasoning, including consequence analysis and ethical principle application (Tobias et al., 2025). In healthcare, digital simulations support the transfer of ethical and legal content to clinical settings, enhancing moral decision-making in real-world situations (Wu et al., 2022; Andersson et al., 2022).

Linking these insights to the findings from this study, the significant posttest differences between the experimental and control groups in moral literacy (as shown in Tables 1 and 2) highlight the direct impact of the structured habitual behavior intervention. This aligns with broader literature that emphasizes the importance of well-planned moral education programs in driving meaningful improvements in ethical competencies (Bulut et al., 2024; Scuotto et al., 2024). In conclusion, the study's findings suggest that structured interventions that engage students in active, reflective, and culturally relevant activities can

significantly enhance their moral literacy, providing a model for future moral education initiatives in vocational schools and other educational contexts. The study's strengths lie in its robust quasi-experimental design, which provides valuable insights into the effects of structured habitual behavior interventions on moral literacy. The use of both multivariate and univariate statistical analyses, including MANOVA and MANCOVA, strengthens the findings, offering strong evidence for the intervention's impact. The sample size of 65 students ensures sufficient statistical power and enhances the reliability of the results. Additionally, the study is underpinned by a clear conceptual framework, drawing on established theories such as Tuana's Moral Literacy Framework, Habit Formation Theory, and Cultural Socialization Theory, providing a solid foundation for understanding the intervention's effects. The intervention itself is holistic, incorporating classroom behavior routines, community service, and integrative reflection, which are more likely to produce lasting impacts on moral development. Moreover, the cultural relevance of the intervention, aligning with traditional Chinese values, enhances its effectiveness in the Chinese vocational education context. The use of a valid and reliable 24-item Likert scale to assess moral literacy adds further credibility to the findings.

However, the study has notable weaknesses. The lack of random assignment to the experimental and control groups introduces the potential for selection bias, as the groups were purposively chosen based on their class enrollment. This limits the generalizability of the findings. Additionally, the short duration of the intervention (one semester) raises concerns about the long-term sustainability of the observed effects on moral literacy. The potential for teacher influence in administering the assessments could also bias the results. Moreover, the study's cultural context may limit the applicability of the findings to other educational settings, and the reliance on self-reported data introduces the possibility of social desirability bias. The absence of follow-up assessments further limits the study's ability to assess the lasting impact of the intervention, while the study does not consider external factors such as family, peer influences, or extracurricular activities, which could have contributed to the observed changes in moral literacy. Addressing these weaknesses in future research would provide a more comprehensive understanding of the intervention's effectiveness and its potential long-term benefits.

CONCLUSION AND RECOMMENDATIONS

The results of this study highlight the significant impact of the habitual behavior cultivation intervention on enhancing moral literacy among participants in the experimental group. Compared to the control group, which showed only moderate improvements, the experimental group exhibited substantial advancements in all three dimensions of moral literacy—ethical sensitivity, ethical reasoning, and ethical motivation and action. Prior to the intervention, both groups exhibited similar low levels, indicating a shared baseline. Post-intervention, however, the experimental group reached high levels across all moral literacy dimensions, while the control group demonstrated only moderate progress. The multivariate analysis using Pillai's Trace confirmed a strong group effect, and univariate analyses revealed no significant differences before the intervention, but highly significant posttest differences, supporting the conclusion that the observed improvements were a direct result of the intervention. These findings emphasize the effectiveness of structured interventions in fostering deeper moral understanding and stronger ethical actions in learners, surpassing the outcomes of traditional moral education methods. Based on these findings, several recommendations can be made for educational practice and future research. First, educational institutions should consider integrating structured habit-building activities into their curricula alongside traditional moral education. This approach would help nurture both moral knowledge and consistent ethical behaviors. Second, teacher training programs should incorporate modules on designing and implementing habit-based interventions, enabling educators to support students in developing moral habits over time. Third, school administrators and policymakers should implement regular assessments of students' moral literacy to monitor progress and refine intervention strategies. Fourth, future research

should explore the long-term sustainability of these gains, investigating whether the improvements in moral literacy observed after the intervention endure and influence real-world ethical decision-making. Lastly, adapting the intervention to suit diverse cultural and educational contexts would maximize its applicability and effectiveness across different settings. By adopting these strategies, schools can move beyond simply imparting moral concepts to fostering lasting moral character, ethical reasoning, and responsible actions in students.

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