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A Novel Teaching Framework for Cultivating Moral Competencies in Guangzhou College Students

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Abstract

Moral education is crucial in shaping ethically responsible individuals, particularly in rapidly evolving societies such as Guangzhou. This research examines the effectiveness of a novel teaching framework designed to enhance moral judgment, moral emotion, and moral action among college students. Conducted at NanFang College Guangzhou, the research involved 35 students enrolled in the Morality and Rule of Law course during the autumn semester of 2024. A pre-test and post-test experimental design was implemented to evaluate the framework's impact. Three assessment tools were utilized: the Cultivate Moral Ability Questionnaire (a 22-item Likert scale), the Moral Education Test for College Students (a 40-question evaluation assessing ethical decision-making and moral reasoning), and the Moral Handwritten Report Project, which measured innovation, teamwork, and ethical analysis. Data were analyzed using statistical methods including Standard Deviation (SD), mean and t-tests, via IBM SPSS 30.0. The research uses statistical methods such as Descriptive Statistics, Paired Sample T-test, Wilcoxon Signed-Rank test and Chi-Square test. The results revealed a significant improvement in students' moral competencies following the implementation of the structured teaching framework. Post-test scores demonstrated enhanced ethical reasoning from 68.2 to 81.7 points, critical thinking from 66.1 to 80.2 points and teamwork skills from 64.7 to 77.9, with students exhibiting greater awareness of real-world moral dilemmas. The integration of experiential learning, case-based analysis, and interdisciplinary approaches proved effective in fostering moral development. This research highlights the importance of structured moral education frameworks in higher education. By incorporating interactive and interdisciplinary teaching methods, educators can more effectively cultivate ethical awareness and social responsibility among students. These findings provide valuable insights for the policymakers and educators aiming to enhance moral education in universities.

Keywords: Moral Education, Ethical Competencies, Teaching Framework, Experiential Learning, Higher Education, Guangzhou.

Introduction

The concept of competency has outperformed the education system and is a shared objective across general education, vocational education, training, primary, secondary, and post primary education, as well as second language acquisition (SLA). Competence has received special emphasis in the past few years, gaining greater prominence as an essential theme of global debates about learning, curriculum and assessment in general education [1]. The primary goal of the education is to foster the holistic development of the individual. A key challenge for the school community is improving the performance in basic skills with three priority skills, such as literacy, numeracy, social, emotional and Moral Competence (MC) [2].

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MC is defined as the ability to make Moral Judgments (MJ) and act on individuals based on internal beliefs. It has the capacity to use moral ethics in the action and at work to deal with difficulties and resolve conflicts based on individual moral beliefs rather than external societal expectations [3]. MC can be defined as the capacity to handle difficulties and disputes using one's moral convictions via deliberation and conversation rather than violence, deception, or submission to others. MC is not intrinsic and does not emerge spontaneously; it must be taught and encouraged [4].

Appreciative Moral Education (ME) has shown a significant infectiousness, affinity, and success in training for college students. Curriculum teaching is an essential component of the integrated system of appreciating ME [5]. Moral cultivation and soul building are at the core of human education. The basic driving principle of college student administration is cultivating morality and cultivating people. Moral cultivation in the talent cultivation and evaluation system means that the universities should consistently prioritize students, focusing on strengthening the student's thinking and ME. By adopting a strict and comprehensive approach, universities should emphasize both critical thinking and ME. The goal of moral cultivation is to cultivate students as well-rounded individuals with a strong foundation in moral principles [6].

ME is intended to equip students with moral direction and ideals, increase their social knowledge and potential for social mobility, and therefore assure their growth as responsible citizens [7]. ME is critical for developing morally responsible citizens, especially in quickly changing communities like Guangzhou. Hence, This research investigates the efficacy of a revolutionary teaching framework aimed at improving MJ, Moral Emotion (MoE), and Moral Action (MA) among college students.

Related Work

The research on ME's development tendencies and knowledge structure was examined [8]. The research of 497 articles from the Web of Science (WOB) was performed using bibliometric analysis using CiteSpace and VOSviewer. Research trends can be found using cluster and evolutionary analysis. Despite database limitations and changing research paradigms, the findings offered theoretical and practical insights. To provide a framework for encouraging ethical conduct, the research [9] investigated why organizational competence models did not include ethical competency. HR directors from South-East Asian and Indian companies provided data using qualitative methodologies. The findings point to three main obstacles: conception, ideation, and execution. An organized framework improved ethical conduct, as suggested by the research. A geographical emphasis and dependence on qualitative data were among the limitations.

By creating the Ethical Competency Development Framework (ECDF) to provide students with the tools they need to solve ethical conundrums, the research [10] improved ethics teaching. Improved ethical thinking was demonstrated by the results of longitudinal research involving 139 students. Limitations include a limited sample size and a particular situation. Three important facets of teaching ethics, such as storytelling, multicultural classrooms, and reflection, were examined in [11]. By using Experiential Learning (EL), it improved students' moral abilities. Case studies, narratives, and participatory conversations were some of the techniques. The findings show increased moral consciousness and participation.

Individual, interpersonal, and organizational aspects of professional ethics in welfare work were addressed [12]. Findings from qualitative approaches showed that ethical concerns were

frequently personal and do not have a systematic integration in professional rules and courses. The findings support cooperative ethical initiatives and ongoing workplace training. Context-specific results and challenges in broader generalization were among the key limitations. Through university-driven interactive information portals and digital tools, the research [13] improved the professional development of rural teachers. Through surveys and case studies, data was gathered using both qualitative and quantitative methodologies. Findings showed an improvement in the digital literacy and instructional effectiveness. Limitations include geographical restrictions and the use of self-reported data. The influence of Artificial Intelligence (AI) education on developing students' critical competencies at the foundational education level in China was investigated [14]. It evaluated how AI courses improved learning abilities, collaboration, and knowledge. Results from surveys and quantitative research indicate that six important sub-competencies were positively impacted by AI training. However, there were drawbacks as well, such as gaps in the curriculum and a lack of real-world applications, which point to areas where AI education has to be improved.

By using a Neural Network (NN)-based method, the investigation [15] improved the instruction of ME. It suggested a data-model-driven technique for building a 3D initial model to examine classroom features. A three-dimensional model was created using Euclidean distance and color point cloud data. An analysis and development of an Innovative ME (IME) framework were conducted. Results indicated that it worked well for teaching simulations. Model generalizability and practical validation limitations were among the drawbacks. Teacher's opinions of the ME curriculum were investigated in the research [16], which also offered a framework for its enhancement. Four themes, such as teacher roles, instructional tactics, ethical frameworks, and teacher perception models, were identified using thematic analysis of 32 Scopus and WoS papers. Regional differences and the extent of the chosen literature restrict the research's ability to provide a novel framework.

Methodology

This research examines the effectiveness of a novel teaching framework designed to enhance MJ, ME, and MA among college students. The research used a *pre – test* and *post – test* experimental approach to evaluate the effect of a unique teaching framework on student's MC. Participants at NanFang College in Guangzhou were examined before and after the intervention using standardized measures. Statistical research was performed to assess advances in ethical reasoning, critical thinking, and collaborative abilities. Table 1 and Figure 1 depict the participation's demographic features.

Features	Category	Frequency (n = 35)	Percentage (%)
Gender	Female	17	48.6%
	Male	18	51.4%
Age Group	18–20 years	12	34.3%
	21–23 years	20	57.1%
	24 and above years	3	8.6%
Prior Ethics Education	Yes	21	60.0%
	No	14	40.0%
Parental Education	High School or Below	9	25.7%
	Bachelor's Degree	18	51.4%

	Master's or Higher	8	22.9%
Academic Year	1 st Year	8	22.9%
	2 nd Year	12	34.3%
	3 rd Year	10	28.6%
	4 th Year	5	14.3%
Participation in Moral Activities	Yes	24	68.6%
	No	11	31.4%

Table 1: Outcomes of the Participation's Demographic Features

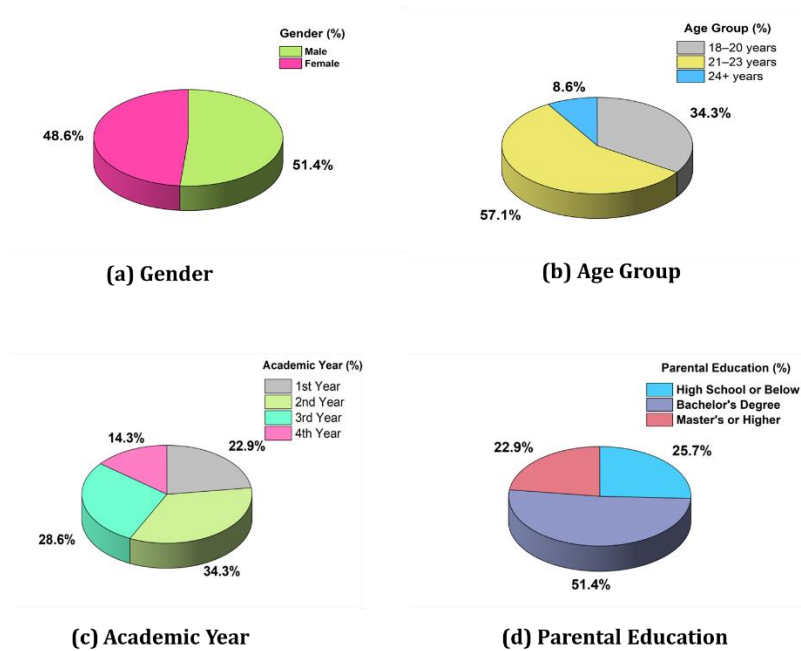


Figure 1: Graphical Representation of the Participation's Demographic Features

Table 1 and Figure 1 demonstrate that the demographic assessment of 35 students at NanFang College Guangzhou reveals a nearly equal gender distribution, with 51.4% male and 48.6% female participation. The majority (57.1%) were between the ages of 21 and 23, with a balanced distribution across academic years; 34.3% were in their second year. Most students (60.0%) had received prior ethics education, and 51.4% had parents with at least a bachelor's degree. Furthermore, 68.6% of students were involved in moral activities, indicating a great interest in ethical learning.

Research Design

The experimental design of the *pre – test* and *post – test* was implemented to investigate whether the unique teaching framework could improve ME competence. The experimental group consisted of student's registered in a Morality and the Rule of Law course and received systematic ME interventions. A pre-test assessment was provided at the beginning of the semester and after those scores, the teaching framework was conducted. A post-test assessment was conducted at the end of the semester to evaluate the intervention.

Participants and Data Collection

The research involved 35 undergraduate students at NanFang College Guangzhou participating in the *Morality and Rule of Law* course, and consent to participate was granted alongside an ethics approval, which guaranteed the confidentiality of data. To measure the moral capacity of NanFang College Guangzhou students, the researchers used a questionnaire survey approach. The questionnaire was distributed through an internet link on August 1, 2024, and was open for replies until September 15, 2024, providing ample chance for responses. To assess change in MC, pre- and post-test data were collected using established assessment tools. To ensure the integrity of the research, data was collected in a controlled environment and all replies were anonymized.

Overview of the Teaching Framework

To promote MCs, an innovative teaching framework combined EL, case-based analysis, and multidisciplinary methods. Real-life ethical problem simulations were used in EL, while case-based analysis focused on historical and contemporary moral dilemmas. The multidisciplinary method used concepts from philosophy, psychology, and sociology to improve moral reasoning. The organized framework sought to instill MJ, MoE, and MA in students.

Assessment Tools

Three assessment tools were utilized to examine students' moral abilities before and after the intervention. The Cultivate Moral Ability Questionnaire (22-item Likert scale) measured students' self-perceived moral progress. The Moral Education Test for College Students (a 40-question evaluation) assessed decision-making and reasoning abilities. The Moral Handwritten Report Project assessed cooperation, ethical analysis, and innovative moral problem solutions using real-world scenarios.

Data Analysis

Statistical approaches, such as descriptive statistics, paired sample t-tests, chi-square test and Wilcoxon signed-rank test, were used to examine the significance of changes in MC. To guarantee accuracy and dependability, quantitative analyses were conducted using IBM SPSS software 30.0. The research contrasted *pre – test* and *post – test* results to evaluate the efficacy of the instructional framework. Descriptive statistics (Mean \pm SD) were used to characterize *pre – test* and *post – test* scores. Then, paired sample t-tests were employed to analyze the statistical significance of changes in MC, with effect sizes (Cohen's d) representing the level of improvement. Next, the Wilcoxon Signed-Rank test was utilized to compare the paired samples with the non-normal distributions. Finally, the chi-square test is used to investigate the relationship between categorical factors like a student's academic year and changes in particular MC. The findings were evaluated in accordance with the research goals, emphasizing increases in students' ethical reasoning and moral awareness.

Result

This research examined the effectiveness of a novel teaching framework designed to enhance MJ, MoE, and MA among college students. Data were analyzed using statistical methods, including mean, SD, t-tests, Wilcoxon signed-rank test and chi-square test using the IBM SPSS 30.0. In this section, the mean and SD were evaluated using the descriptive statistics analysis, t-test was executed using the paired sample t-test and the Wilcoxon signed-rank test was utilized to compare the paired samples with the non-normal distributions. The chi-square test is used to

investigate the relationship between categorical factors like a student's academic year and changes in particular MC.

Descriptive Statistics

Descriptive statistics summarize and assess data patterns, revealing significant properties of a dataset. The *mean* is the average number, which helps to analyze overall trends in MC levels. *SD* Represents variability, indicating how widely distributed student's moral assessment outcomes are around the mean. The *maximum* and *minimum* values constitute the range, indicating the lowest and highest recorded scores in MJs. In this research, these indicators assist quantify changes in ethical reasoning, critical thinking, and collaborative abilities, providing statistical proof to back up the framework's efficacy. Table 2 and Figure 2 provide descriptive data for the research's primary demographic features.

Variables	Mean	SD	Minimum	Maximum
Age (years)	21.2	1.7	18	25
Academic Year	2.4	1.1	1	4
Prior Ethics Education	0.60	0.49	0	1
Parental Education	1.97	0.70	1	3
Participation in Moral Activities	0.69	0.47	0	1

Table 2: Outcomes of the Descriptive Statistics

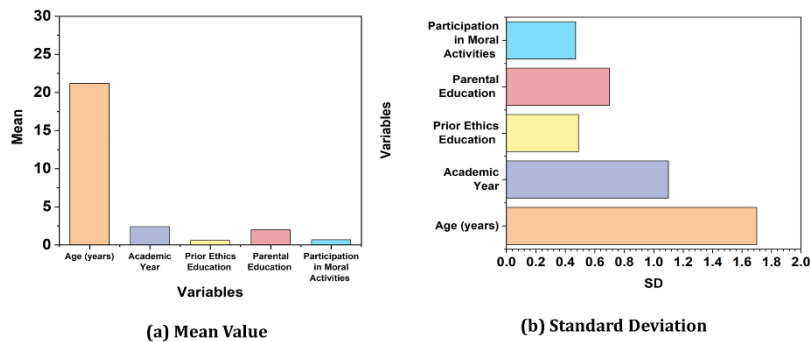


Figure 2: Graphical Representation of the Descriptive Statistics

Table 2 and Figure 2 reveal that the participants' average age is 21.2 years ($SD = 1.7$), with ages ranging from 18 to 25. The average academic year ($mean = 2.4, SD = 1.1$) shows a mix of students from various levels. Prior ethics education ($mean = 0.60, SD = 0.49$) and involvement in moral activities ($mean = 0.69, SD = 0.47$) indicate moderate engagement in ethical learning, although parental education levels vary, with an average of ($mean = 1.97, SD = 0.70$) on a three-point scale.

Paired Sample T-Test

A paired sample t-test examined two groups to check whether there is a substantial difference before and after an intervention. The *Pre – Test Mean (SD)* reflects the average performance and variability of results before implementing the teaching framework, while the *Post –*

Test Mean (SD) represents the average performance and variability of results after its implementation. The *t – value* assesses the degree of the difference, while the *p – value* shows statistical significance ($p < 0.001$ indicates significant improvement). *Effect Size (Cohen's d)* measured the extent of change, demonstrating the framework's effectiveness in improving students' ethical reasoning, collaboration, critical thinking, and creativity. Table 3 and Figure 3 display the paired sample t-test findings, which reveal substantial gains in students' skills following the teaching framework intervention.

<i>Variables</i>	<i>Pre – Test Mean (SD)</i>	<i>Post – Test Mean (SD)</i>	<i>p – value</i>	<i>t – value</i>	<i>Effect Size</i>
Moral Judgment	65.8 (8.2)	78.5 (7.6)	< 0.001	6.92	1.52
Moral Emotion	62.3 (7.9)	75.1 (7.2)	< 0.001	7.10	1.56
Moral Action	60.5 (8.4)	74.3 (7.8)	< 0.001	6.85	1.50
Ethical Reasoning	68.2 (8.0)	81.7 (7.5)	< 0.001	7.45	1.64
Teamwork Skills	64.7 (7.5)	77.9 (7.1)	< 0.001	7.02	1.54
Critical Thinking	66.1 (7.8)	80.2 (7.3)	< 0.001	7.35	1.60

Table 3: Outcomes of the Paired Sample T-Test

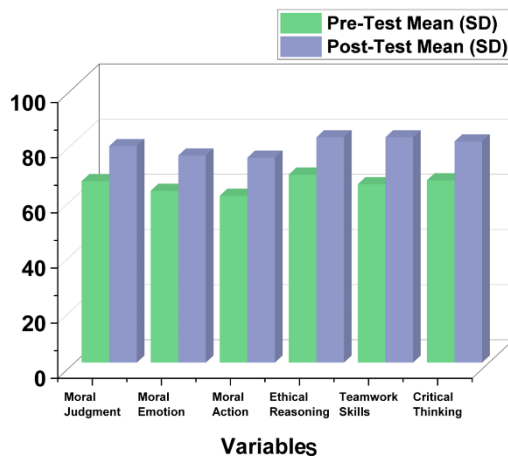


Figure 3: Graphical Representation of the Paired Sample T-Test

Table 3 and Figure 3 show that moral judgment grew from 65.8 (SD = 8.2) to 78.5 (SD = 7.6), while moral emotion improved from 62.3 (SD = 7.9) to 75.1 (SD = 7.2). Moral actions rose from 60.5 (SD = 8.4) to 74.3 (SD = 7.8), whereas ethical reasoning went from 68.2 (SD = 8.0) to 81.7 (SD = 7.5). Teamwork skills improved from 64.7 (SD = 7.5) to 77.9 (SD = 7.1), and critical

thinking grew from 66.1 (SD = 7.8) to 80.2 (SD = 7.3). All results were statistically significant ($p < 0.001$) and had considerable impact sizes, indicating the framework's effectiveness.

Wilcoxon Signed-Rank Test

The Wilcoxon signed-rank test is a non-parametric test utilized to compare the paired samples (*pre – test* and *post – test*) with the non-normal distributions. The *Pre – Test Median (IQR)* indicates the median value and Interquartile Range (IQR) of scores prior to the intervention, whereas the *Post – Test Median (IQR)* displays the same after the intervention. The *Z – Statistic* compares *pre – test* and *post – test* rankings, and the *p – value* shows statistical significance ($p < 0.05$). Effect Size (*r*) indicates the strength of the difference, with $r > 0.5$ indicating a substantial influence. Table 4 and Figure 4 depict the outcomes of the Wilcoxon signed-rank test.

Variable s	<i>Pre – Test Median (IQR)</i>	<i>Post – Test Median (IQR)</i>	<i>Z – Statistic</i>	<i>p – value</i>	Effect Size (<i>r</i>)
Moral Judgment	65 (10)	78 (9)	-3.45	0.001	0.55
Moral Emotion	70 (8)	82 (7)	-3.62	0.001	0.60
Moral Action	63 (11)	76 (10)	-3.80	0.001	0.58
Ethical Reasoning	68 (9)	80 (8)	-3.90	0.001	0.62
Teamwork Skills	72 (6)	85 (5)	-4.20	< 0.001	0.65
Critical Thinking	67 (7)	79 (6)	-3.55	0.001	0.57

Table 4: Outcomes of the Wilcoxon Signed-Rank Test

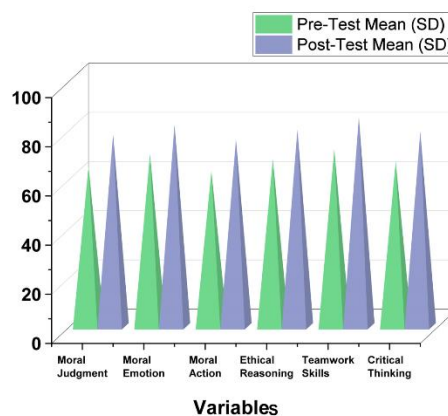


Figure 4: Graphical Representation of the Wilcoxon Signed-Rank Test

Figure 4 and Table 4 show substantial improvements in all variables between the *pre – test* and *post – test* with *p – values* < 0.05, indicating statistical significance. For example, Moral Judgment increased from a pre-test median of 65 (IQR = 10) to 78 (IQR = 9), with a Z-statistic of -3.45 and an effect size (*r*) of 0.55, suggesting a strong effect. Similarly, moral emotion improved significantly, with pre-test and post-test medians of 70 (IQR = 8) and 82 (IQR = 7), respectively, with an effect size of 0.60. All measures, including moral action, ethical reasoning, teamwork skills, and critical thinking, showed large and statistically significant gains after the intervention.

Chi-Square Test

The chi-square (χ^2) test is a non-parametric statistical approach used to identify significant associations between categorical variables. The *df* (degrees of freedom) reflects the number of categories minus one and is required for understanding test findings. The p-value reflects the likelihood that the reported findings occurred by chance, and a value less than 0.05 is typically regarded as statistically significant. The significance of a connection or difference indicates whether it has significance rather than being caused by random variation. Table 5 depicts the outcome of the chi-square test.

Variable	χ^2	<i>df</i>	<i>p – value</i>	Significance
Moral Judgment	7.84	1	0.005	Significant
Moral Emotion	6.21	2	0.045	Significant
Moral Action	4.95	1	0.026	Significant
Ethical Reasoning	9.12	1	0.003	Significant
Teamwork Skills	3.28	2	0.194	Not Significant
Critical Thinking	10.56	2	0.005	Significant
Moral Sensitivity	2.47	1	0.116	Not Significant
Moral Motivation	8.67	2	0.013	Significant
Responsibility Awareness	5.33	1	0.021	Significant
Social Responsibility	3.78	2	0.151	Not Significant

Table 5: Outcome of the Chi-Square Test

Table 5 demonstrates that moral judgment ($\chi^2 = 7.84, p = 0.005$), ethical reasoning ($\chi^2 = 9.12, p = 0.003$), and critical thinking ($\chi^2 = 10.56, p = 0.005$) have substantial statistical significance. Moral emotion ($\chi^2 = 6.21, p = 0.045$) and moral motivation ($\chi^2 = 8.67, p = 0.013$) both show significant improvements. However, teamwork skills ($\chi^2 = 3.28, p = 0.194$) and social responsibility ($\chi^2 = 3.78, p = 0.151$) were not statistically significant. These findings lend evidence to the innovative teaching framework's efficacy in improving the majority of moral competence aspects.

Discussion

The existing techniques drawbacks include small sample numbers, regional and contextual limits, reliance on qualitative or self-reported data, limited generalizability, and gaps in practical application and curricular integration. To overcome these challenges, this research examined the effectiveness of a novel teaching framework designed to enhance MJ, MoE, and MA among college students. The outcomes of this research showed that the organized teaching framework improves students' moral abilities, such as ethical reasoning, collaboration, and critical thinking. The large changes observed indicate that including EL, case-based discussions, and multidisciplinary methodologies is an effective approach to moral teaching. This research presented a systematic technique that not only raises students' awareness of ethical quandaries but also encourages active participation in real-world moral decision making. The framework's benefit is its capacity to foster holistic MCs, equipping students for ethically responsible leadership roles. These outcomes have a substantial implication for the policymakers and educators, emphasizing the necessity of interactive and multidisciplinary methods in higher education for the effective development of moral consciousness and social responsibility.

Conclusion

The research examined the effectiveness of a novel model of teaching in improving MJ, emotion, and action among NanFang College Guangzhou students. Post-test scores showed significant improvement in ethical reasoning from 68.2 to 81.7 points, critical thinking from 66.1 to 80.2 points and teamwork skills from 64.7 to 77.9 points. The structured integration of case-based analysis, EL and multidisciplinary approaches was effective in fostering MCs. However, the limited sample size of the research and the short duration of intervention could constrain the generalizability of the findings. More analyses can explore long-term consequences and scale up the paradigm to diverse educational settings. These results point to the importance of formal ME, providing valuable information for policymakers and educators interested in enhancing ethical awareness and social responsibility in higher education.

References

- Vitello, S., Greator, J. and Shaw, S., 2021. What is competence? A shared interpretation of competence to support teaching, learning and assessment. <https://doi.org/10.17863/CAM.110829>
- Caballero, María, and Vicente J. Llorent. "The effects of a teacher training program on neuroeducation in improving reading, mathematical, social, emotional and moral competencies of secondary school students. A two-year quasi-experimental study." *Revista de Psicodidáctica (English Ed.)* 27, no. 2 (2022): 158-167. <https://doi.org/10.1016/j.psicoe.2022.04.002>
- Haghighat, S., Borhani, F. and Ranjbar, H., 2020. Is there a relationship between moral competencies and the formation of professional identity among nursing students?. *BMC nursing*, 19, pp.1-7. <https://doi.org/10.1186/s12912-020-00440-y>
- Martins, V.S.M., Santos, C.M.N.C., Bataglia, P.U.R. and Duarte, I.M.R.F., 2021. The teaching of ethics

- 1926 *A Novel Teaching Framework for Cultivating Moral Competencies* and the moral competence of medical and nursing students. *Health Care Analysis*, 29, pp.113-126. <https://doi.org/10.1007/s10728-020-00401-1>
- Zhang, Y., Zhao, X. and Zhu, P., 2024. An examination of the effectiveness of in an integrated appreciative curriculum moral education for college students from Hong Kong, Macao, Taiwan and mainland China--Taking ethics and life as an example. In *MATEC Web of Conferences* (Vol. 395, p. 01059). EDP Sciences. <https://doi.org/10.1051/mateconf/202439501059>
- Liu, S., Wang, X. and Chu, J., 2020. On the Management of College Students under the Concept of "Cultivating Morality and Cultivating People". *Open Journal of Social Sciences*, 8(06), p.438. <https://doi.org/10.4236/jss.2020.86033>
- Tang, H. and Wang, Y., 2021. Moral education curriculum reform for china's elementary and middle schools in the twenty-first century: Past progress and future prospects. *ECNU Review of Education*, 4(4), pp.727-742. <https://doi.org/10.1177/2096531120923416>
- Chen, J., Liu, Y., Dai, J. and Wang, C., 2023. Development and status of moral education research: Visual analysis based on knowledge graph. *Frontiers in psychology*, 13, p.1079955. <https://doi.org/10.3389/fpsyg.2022.1079955>
- Dutta, D., Mishra, S.K. and Budhwar, P., 2022. Ethics in competency models: A framework towards developing ethical behaviour in organisations. *IIMB Management Review*, 34(3), pp.208-227. <https://doi.org/10.1016/j.iimb.2022.10.002>
- Rodríguez-Galván, L.C., Juárez, E.D. and Velázquez, J.M., 2022, March. The ethical competency development framework. In *2022 IEEE Global Engineering Education Conference (EDUCON)* (pp. 157-163). IEEE. <https://doi.org/10.1109/EDUCON52537.2022.9766596>
- Harris, H., 2020. Teaching ethical theory and developing moral competence. In *Educating for Ethical Survival* (Vol. 24, pp. 133-138). Emerald Publishing Limited. <https://doi.org/10.1108/S1529-209620200000024009>
- Ribers, B., 2022. Ethical transformations: developing ethical competencies for the social professions through action research. *European journal of social work*, 25(1), pp.65-77. <https://doi.org/10.1080/13691457.2020.1857704>
- Zhao, Y., Zhao, M. and Shi, F., 2024. Integrating moral education and educational information technology: A strategic approach to enhance rural teacher training in universities. *Journal of the Knowledge Economy*, 15(3), pp.15053-15093. <https://doi.org/10.1007/s13132-023-01693-z>
- Huang, X., 2021. Aims for cultivating students' key competencies based on artificial intelligence education in China. *Education and Information Technologies*, 26(5), pp.5127-5147. <https://doi.org/10.1007/s10639-021-10530-2>
- Shi, X., 2023. Exploring an Innovative Moral Education Cultivation Model in Higher Education through Neural Network Perspective: A Preliminary Study. *Applied Artificial Intelligence*, 37(1), p.2214767. <https://doi.org/10.1080/08839514.2023.2214767>
- Zhang, Q., Saharuddin, N.B. and Aziz, N.A.B.A., 2022. The analysis of teachers' perceptions of moral education curriculum. *Frontiers in psychology*, 13, p.967927. <https://doi.org/10.3389/fpsyg.2022.967927>