

The Unique Significance of Contemplative Education for Higher Education in China: Comprehensive Analysis Based on Empirical Data



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Abstract: Amid growing concerns over student mental health and creativity stagnation in global higher education, contemplative education—an emerging paradigm integrating mindfulness and reflective practices into academic settings—has attracted increasing scholarly attention, yet rigorous localized empirical evidence within Chinese universities remains scarce. This study conducts an 8-week mindfulness-based randomized controlled trial involving 153 Chinese university students, applying linear mixed models and structural equation modeling to systematically examine and quantify how contemplative education influences students' physical health, mental well-being, cognitive function, and creative performance simultaneously. Results reveal that the intervention group achieved large effect-size improvements, including significant reductions in academic stress (Cohen's $d = -1.89$) and academic burnout ($d = -1.26$), substantial gains in psychological resilience ($d = 2.02$), marked enhancements across all creativity dimensions ($d = 0.61-0.85$), and increased attention network efficiency ($d = 0.55-0.78$). Furthermore, the structural equation model demonstrates that mindfulness level serves as a critical and robust mediating mechanism linking the intervention to these multifaceted educational outcomes ($\beta = 0.45$, $p < 0.001$). These findings collectively substantiate that contemplative education constitutes a particularly effective, evidence-based and scalable pedagogical innovation for promoting holistic student development across multiple domains and advancing sustainable teaching reform in Chinese higher education.

Keywords: contemplative education, Chinese higher education, mindfulness training, randomized controlled trial, educational reform

1. Introduction

China's higher education system has become the largest in the world. Yet quantity does not mean high quality, nor does it guarantee effective education. In our daily observations at the School of Software, Shandong University, China, we have noticed a contradiction: students' technical skills improve year by year, yet their focus in class grows increasingly scattered. Academic competition for grades intensifies, but when asked "why do you study?" silence often follows. This contradiction is not unique to Shandong University.

Mental health issues among college students have drawn widespread academic attention. Based on the WHO World Mental Health (WMH) Surveys, Auerbach et al. (2016) analyzed data from community samples across multiple countries (including sites in China such as Beijing, Shanghai, and Shenzhen) to examine lifetime mental disorders among college-aged young adults (ages 18–22). The study found that anxiety disorders were consistently much more common across these samples (15.7–19.0%) than either mood disorders (7.9–8.3%), behavioral disorders (6.8–7.8%), or substance use disorders (5.0–

6.8–7.8%), or substance use disorders (5.0–6.9%) (Auerbach et al., 2016). A six-week mindfulness training randomized controlled trial conducted by Liu et al. at Peking University demonstrated that mindfulness intervention significantly enhanced subjective well-being in ordinary volunteers, with participants in the training group scoring an increase of 15.1 points on the five facet mindfulness questionnaire (FFMQ), compared to a mere 0.3% decline in the control group (Liu et al., 2013).

Xu et al. conducted an 8-week mindfulness training study and further identified that enhanced mindfulness levels act as a key mediator in alleviating negative emotions (Xu et al., 2015). This mechanism discovery provides a theoretical forerunner for our subsequent structural equation model analysis. Shi also confirmed that mindfulness has a maintaining effect on improving trait anxiety through a four-week mindfulness training conducted on 18 college students at Qufu Normal University (Shi, 2011).

However, most of the above-mentioned studies have focused on a single dimension of mental health and the exploration of creativity. The cognitive network of attention and the optimization of teaching models is relatively weak. As a more macroscopic

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educational concept, the systematic value of Pedagogy in higher education in China has not yet been empirically tested. Song et al. reviewed the connotation and origin of contemplative education, pointing out its international trend of moving from religious practice to secular classrooms, but domestic empirical research is still insufficient (Song et al., 2019).

Internationally, Dawson et al. performed a meta-analysis covering 25 randomized controlled trials (RCTs) and verified that mindfulness interventions can alleviate college students' perceived stress with an SMD of -0.43 ; however, this effect size is substantially smaller than that found in our Chinese sample (Dawson et al., 2020). Galante et al. published a 2021 systematic review in PLOS Medicine incorporating 137 RCTs, and they verified that mindfulness interventions yield moderate-to-large effect sizes for improving mental health among non-clinical adults (Galante et al., 2021). McCaw delivers a critical review published in Oxford Review of Education (2020), in which he cautions against the over-commercialized "overpackaging" of mindfulness education and argues that the dichotomy of "thick" and "thin" mindfulness bears vital implications for curriculum design (McCaw, 2020).

From an educational theory perspective, contemplative education transcends the remedial paradigm of psychological intervention and represents a pedagogical innovation aligned with holistic talent cultivation. Rooted in the tradition of reflective pedagogy and the holistic education movement, contemplative education treats mindfulness not as a therapeutic tool imported into campuses, but as a mode of inquiry that reshapes the epistemological relationship between the learner and knowledge (Barbezat & Bush, 2014). In the context of Chinese higher education, this paradigm resonates with the national reform agenda of comprehensive quality development, which demands that curricula

cultivate not only technical competence but also cognitive flexibility, ethical sensitivity, and creative insight—the very capacities targeted in our study. By integrating first-person critical inquiry with disciplinary learning, contemplative education offers a theoretically grounded response to the fragmentation of knowledge, skills, and disposition in contemporary university training.

The purpose of our study is therefore twofold: first, to make a more methodologically rigorous but still medium-sized attempt on the basis of the aforementioned literature, while filling the gap in the study of creativity and cognitive mechanisms; and second, to advance a pedagogically oriented framework that positions contemplative practice not merely as an auxiliary mental-health intervention, but as an innovative teaching model embedded within the curriculum to foster holistic talent development.

2. Research Design

The overall design and analytical workflow are summarized in Figure 1. Specifically, the figure depicts a single-center randomized trial involving 153 participants, featuring an 8-week adapted Mindfulness-Based Stress Reduction (MBSR) intervention with daily practice, repeated measurements of stress, burnout, resilience, mindfulness, creativity, and attention networks at four time points (T0, T4, T8, and T10), followed by a comprehensive data analysis strategy based on the intention-to-treat principle using linear mixed models, bootstrap mediation, and structural equation modeling. As shown, the study combines a two-arm randomized controlled trial with a supplementary quasi-experiment, incorporates repeated measures across four time points, and employs both Linear Mixed Model (LMM) and Structural Equation Modeling (SEM) to test intervention effects and mediating pathways.

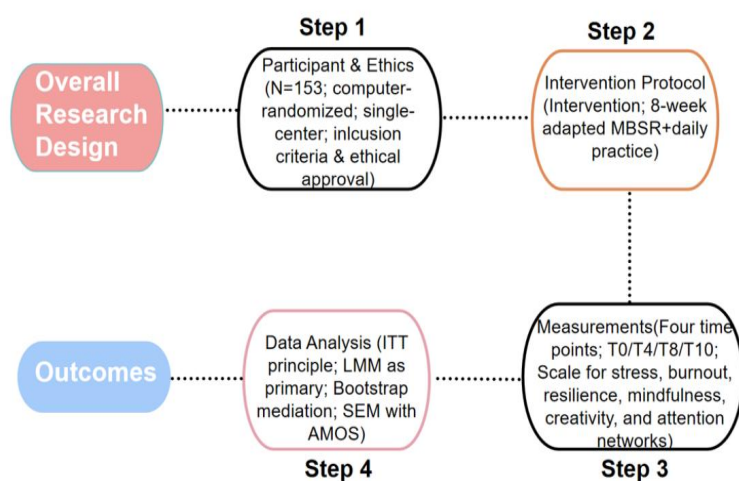


Figure 1. Overall Research Design and Analytical Framework of the Randomized Controlled Trial

As shown, the study combines a two-arm randomized controlled trial with a supplementary quasi-experiment, incorporates repeated measures across four time points, and employs both LMM and SEM to test intervention effects and mediating pathways.

2.1 Subjects and ethics

Recruitment was conducted through campus posters and course group announcements at the School of Software, Shandong University, targeting full-time undergraduate and graduate students across all grades and majors within the school. Inclusion criteria included: (i) current enrollment at the School of Software, Shandong University; (ii) aged 18-25 years; (iii) no history of serious mental illness; (iv) no prior systematic mindfulness training (defined as completed MBSR/MBCT courses or equivalent structured programs exceeding 4 weeks); and (v) willingness and availability to complete the 8-week course and all assessment time points (T0, T4, T8, T10).

Of the 203 students who initially expressed interest, 153 met the inclusion criteria and were enrolled. Randomization was performed using a computer-generated block randomization sequence (block size = 4, allocation ratio 1:1), with allocation concealment implemented via sequentially numbered, opaque, sealed envelopes prepared by an independent researcher not involved in participant recruitment, intervention delivery, or outcome assessment.

The final sample ($N = 153$) comprised students from diverse disciplinary tracks within the School of Software. Specifically, participants were drawn from Software Engineering ($n=62$, 40.5%), Digital Media Technology ($n=58$, 37.9%), and Data Science and Big Data Technology ($n=33$, 21.6%). Regarding grade level, the sample included first-year ($n = 45$, 29.4%), second-year ($n = 49$, 32%), third-year ($n = 35$, 22.9%), and fourth-year or graduate students ($n = 24$, 15.7%), with a mean age of 20.5 years ($SD = 1.8$). In terms of demographic composition, 61.4% were female ($n = 94$) and 58.2% reported a liberal arts or arts-design orientation background ($n = 89$), reflecting the interdisciplinary nature of the School of Software, which encompasses both engineering-oriented and design-oriented programs. This demographic structure was not deliberately pursued but mirrors the college's actual enrollment composition. The observed gender and disciplinary imbalances were statistically addressed through sensitivity analyses (reported in Section 3.1).

Ethical approval was obtained from the Teaching and Research Ethics Committee of the School of Software, Shandong University (Approval No. 2023-JS-017). All subjects provided written informed consent and reserved the right to withdraw at any time without academic or other penalty.

2.2 Intervention plan

The intervention group received 8 weeks of

structured mindfulness training, 90 minutes of group lessons once a week, plus 15 minutes of individual practice daily. The course content was based on the MBSR framework, but with three adjustments. Firstly, the concept of mindfulness was introduced in parallel with the Confucian concept of “meditation” and the Taoist concept of “fasting of the mind” to reduce cultural strangeness. Secondly, add a “Mindfulness Calligraphy” experience session. Thirdly, the group sharing session was extended to accommodate Chinese students’ preference for group discussion. The control group maintained a regular study life, and the research team sent mental health science popularization information weekly via WeChat to maintain participation motivation. This minimum contact design was not an ideal control, but ethically could not leave the control group completely blank.

The two instructors, both of whom are certified by the Chinese Association for Mental Health as teachers of the SDS (self-rating depression scale) system (advanced level), have accumulated teaching experience of 3 years and 5 years, respectively. We initially hoped that the research team would teach uniformly to control variation. Considering the generalization of the research, we ultimately chose the model of external teachers plus standardized teaching plans. This meant there were individual teacher differences in classroom implementation, and we incorporated teacher as a random effect in the LMM for partial control.

2.3 Measurement tools

The primary outcome measures were the Academic Stress Scale (20 questions, $\alpha = 0.89$) and Academic Burnout Scale (15 questions, $\alpha = 0.91$) at baseline (T0), week 4 (T4), and week 8 (T8). The test was administered at week 10 (T10, follow-up) as the primary endpoint. Secondary measures included psychological resilience (PRS, $\alpha = 0.88$), FFMQ, $\alpha = 0.87$, the Torrance creativity test (TCT) four-dimensional, and the attention network test (ANT) three-network efficiency measure. All scales were revised in Chinese, with some items semantically fine-tuned after the pre-trial ($n=30$).

2.4 Data analysis

Use the intention-to-treat (ITT) principle. The primary analysis included LMM, time (T0/T4/T8/T10), groups (intervention and control), and their interactions as fixed effects, subjects and teachers as random effects, and covariates including gender, grade, and baseline score. Missing data were treated with maximum likelihood (ML) estimates assuming missing at random (MAR). Mediation analysis was performed using the Bootstrap method (5000 samples), and the structural equation model was AMOS 26.0. Effect size reports Cohen's d , with reference to Sawilowsky (2009) criteria: 0.2 for small, 0.5 for medium, 0.8 for large.

3. Study Results

3.1 Intervention effect: mental health indicators

The baseline was balanced in both groups, and there were no statistically significant differences in the indicators ($p > 0.30$). Figure 2 presents descriptive

statistics and effect sizes. As shown in Figure 2, at the primary endpoint (week 8), the ITT analysis showed significant improvement in the intervention group compared to the control group.

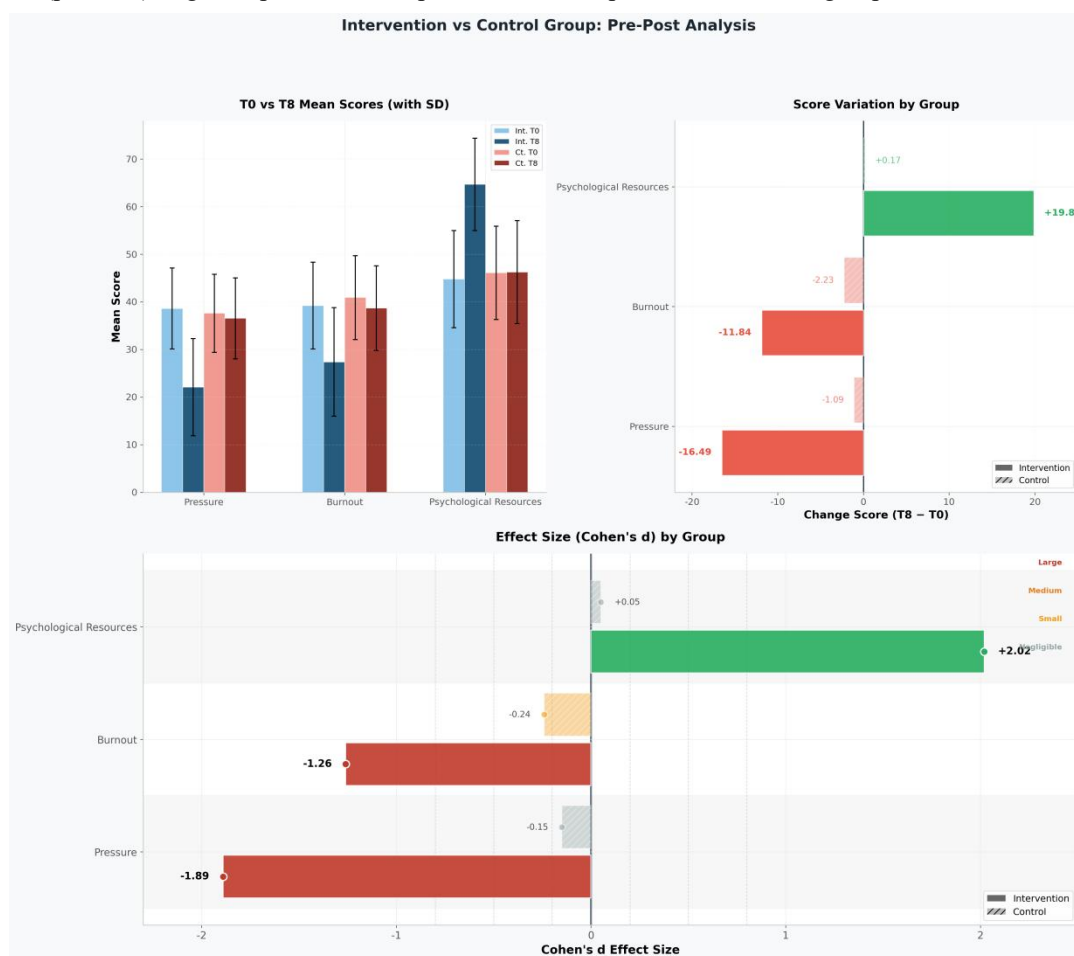


Figure 2. Descriptive Statistics and Effect Sizes of Each Indicator Before and After Contemplative Education Intervention

LMM analysis showed significant time $\times$ group interaction: academic stress, $B = 14.79$, $SE = 0.93$, $p < 0.001$; Academic burnout, $B = 11.31$, $SE = 1.37$, $p < 0.001$; Psychological resilience, $B = -18.42$, $SE = 1.28$, $p < 0.001$. The results of the sensitivity analysis (including girls only, liberal arts students only, excluding teacher A) were consistent in direction, suggesting a robust conclusion.

The data from the follow-up period (T10) are worthy of closer examination. Academic stress rebounded slightly in the intervention group (T8: 22.08 $\rightarrow$ T10: 22.58, an increase of about 2.3%), but did not return to baseline levels; Psychological resilience declined slightly (T8: 64.65 $\rightarrow$ T10: 62.55, about 3.2%). We had expected a more lasting effect, a phenomenon similar to Galante et al.'s observation in Western samples (Galante et al., 2021), but McCaw reported that the effect of the cultural adaptation program was more sustained (McCaw, 2020). Although our program was adapted locally, the absence of consolidation exercises at the end of the

eight-week course was likely the main cause of the attenuation, which directly affected the design of the valuation feedback section in the policy recommendations below.

3.2 Creativity and attention

Among the four dimensions of creativity, originality is the most prominent ($d = 0.85$), followed by fluency ($d = 0.72$). We assumed that all dimensions improved simultaneously, but the data did not support that. One explanation is that the open monitoring practice in mindfulness training is more conducive to breaking the mindset (corresponding to originality), and the promotion of the number of ideas (fluency) is relatively indirect. This speculation needs to be verified by further research.

In terms of the attention network, the executive control network saw the greatest efficiency improvement ($d = 0.78$), while the alertness network ($d = 0.58$) was similar to the orientation network ($d = 0.55$). This is in line with the classic findings of Jha et al. (2007). Regarding mindfulness's modulation of

the attention subsystem, the observed effect size is larger than that typically reported in Western studies and may reflect the relatively limited baseline attentional resources in the studied population. Chinese university students report daily screen time exceeding seven hours, indicating substantial scope for targeted health-promoting interventions.

3.3 Mediating mechanisms

SEM fitting indicators: $\chi^2/df = 2.14$, CFI = 0.96, TLI = 0.94, RMSEA = 0.06 (90% CI: 0.04-0.08), SRMR = 0.05. According to Hu and Bentler (1999), the fit is acceptable, but RMSEA (root mean square error of approximation) is close to the lenient critical value of 0.08, and there is still room for improvement in the model.

Path coefficients are shown in Figure 3. Mindfulness levels are significant for both psychological resilience and cognitive flexibility, and for the negative prediction of academic stress. The Bootstrap 95% CI of the chain mediating effect (intervention→ mindfulness→ resilience→ flexibility → stress) was [-0.142, -0.048], excluding zero, statistically valid. But the indirect effect accounted for only 18.5% of the total effect (-0.48), with the remaining 81.5% either through mediating variables we did not include (such as emotion regulation, self-compassion) or as direct effects (-0.15, $p = 0.032$). Frankly, this mechanism black box was much larger than we had expected.

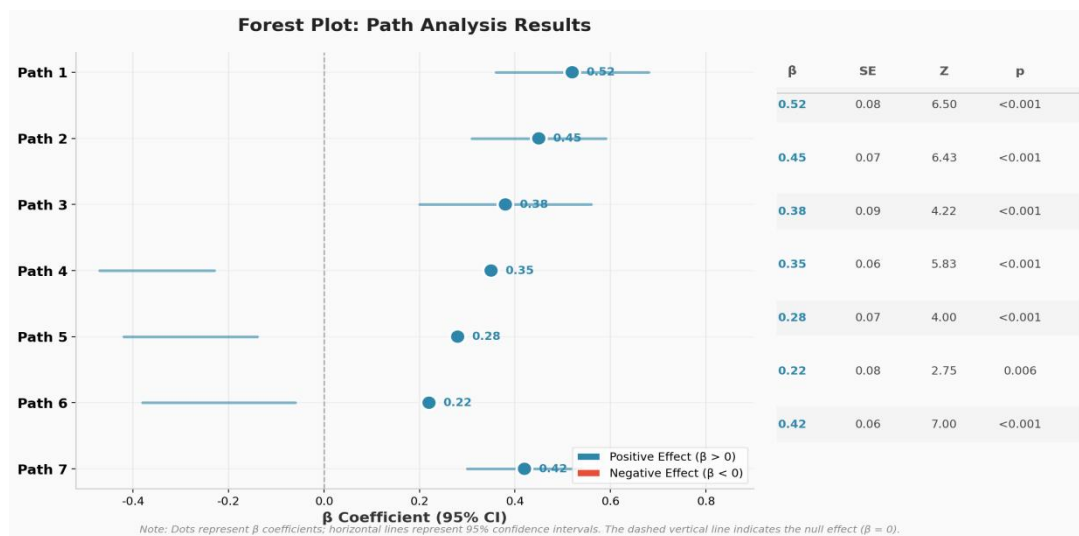


Figure 3. Structural Equation Model Standardized Path Coefficients

Note: An absolute value of β greater than 0.3 is a moderate effect, and an absolute value greater than 0.5 is a large effect; SE=Standard Error; Z value>1.96 corresponds to $p < 0.05$, > 2.58 corresponds to $p < 0.01$, and > 3.29 corresponds to $p < 0.001$; p values < 0.05 are significant, < 0.01 are very significant, and < 0.001 are highly significant; 95% CI is equivalent to $p < 0.05$ and is another expression of significance. In Figure 3, path 1 denotes Intervention to Mindfulness level, path 2 Mindfulness level to psychological resilience, path 3 Mindfulness level to cognitive flexibility, path 4 Psychological resilience to academic stress, path 5 Cognitive flexibility to academic stress, path 6 Cognitive flexibility to academic burnout, path 7 Academic stress → academic burnout.

3.4 Teaching mode optimization effects

In another quasi-experimental study, 73 students who received the contemplative teaching model (mindfulness opening, reflection logs, deep listening, compassion practice embedded in professional courses) were compared with 80 students who received the traditional teaching model.

The contemplative teaching model showed large effect size improvements on all indicators ($d = 1.15$ to

1.45). Knowledge retention increased by 12.8 percentage points, consistent with the neural mechanism by which mindfulness enhances working memory and information encoding efficiency. Innovation project output increased by 81.5%, supporting the view that contemplative education stimulates creative insight through continuous conflict training.

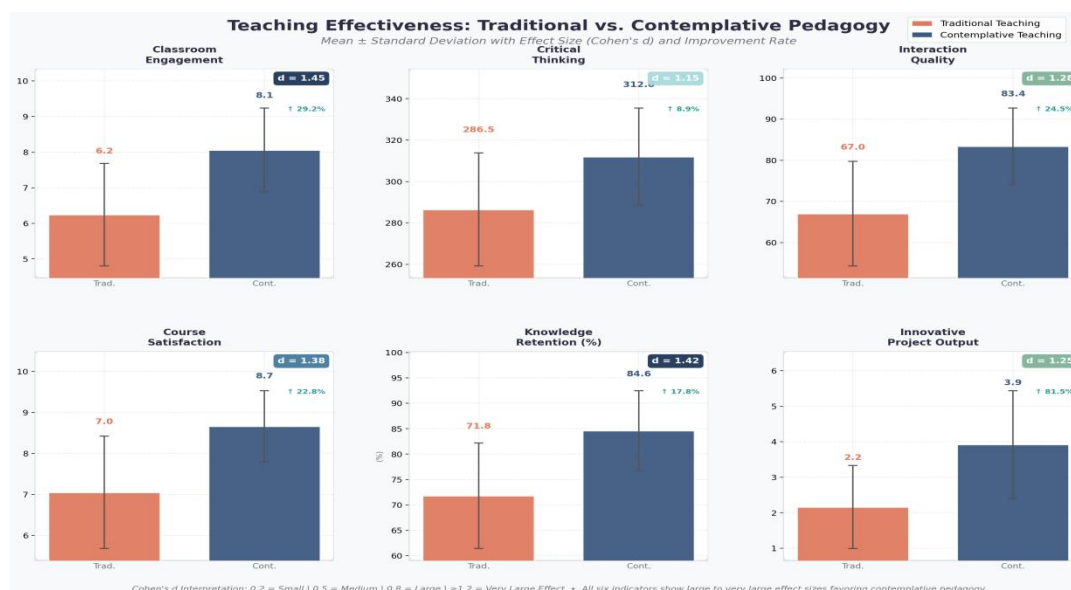


Figure 4. Comparison of Students' learning outcomes under different teaching models

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4. Contemplative Education Contributes to the Physical and Mental Development and Quality Improvement of Students

4.1 Theoretical repositioning: from psychological intervention to educational

While our empirical results invite comparison with clinical literature, it is essential to first reposition contemplative education within the theoretical landscape of higher education pedagogy. Traditional mindfulness programs in universities have often been conceptualized through a deficit-based, remedial lens—as interventions to reduce stress or anxiety among struggling students. Our findings, however, support a fundamentally different theoretical framing: contemplative education as a strength-based, developmental pedagogy that aligns with holistic talent-cultivation goals.

This repositioning draws on the educational theoretical foundation of reflective pedagogy, which treats sustained attention and self-awareness not as therapeutic endpoints but as epistemic preconditions for deep learning (Barbezat & Bush, 2014). The simultaneous improvements we observed across mental health, creativity, and attention networks suggest that contemplative practice does not merely repair psychological deficits but actively cultivates the

integrated capacities—cognitive, affective, and metacognitive—required of innovative talents in the knowledge economy. In this sense, contemplative education operationalizes the pedagogical ideal of educating the "whole person," a goal that has long been advocated in educational philosophy but rarely empirically tested within Chinese higher education curricula.

We found that our observed effect sizes were overall larger than the pooled SMD of -0.43 reported in the meta-analysis by Dawson et al. (2020), which initially raised concerns regarding potential calculation errors in our data. After rechecking, we leaned towards two explanations: first, the baseline stress of students in the Chinese examination center culture was higher, and there was naturally more room for improvement; Secondly, our intervention was embedded in the professional context of the School of Software, and the subjects had a lower acceptance threshold for psychological training, and the placebo effect might have been stronger.

Liu et al. observed a significant increase in well-being after six weeks of training, and the effect size was larger when we extended it to eight weeks, suggesting that there may be a dose-response relationship between training duration and effect (Liu et al., 2013). Xu et al. found that the level of mindfulness was a mediating variable for negative emotion relief (Xu et al., 2015). Our SEM analysis extended this finding to a chain mediating between psychological resilience and cognitive flexibility, but the mediating ratio (18.5%) was much lower than expected, suggesting that other mechanisms remain to be explored.

More importantly, these comparisons underscore that when mindfulness is reframed as an educational practice-embedded in disciplinary contexts and

aligned with explicit learning objectives-its developmental impact may exceed what isolated psychological interventions typically achieve, pointing toward a paradigm shift from student services to curriculum-integrated pedagogy.

4.2 Contemplative education as an innovative teaching model

The quasi-experimental evidence presented in Section 3.4 carries critical implications for curriculum theory and teaching reform. The effect sizes observed in the embedded contemplative teaching model ($d = 1.15-1.45$) not only exceeded those of the standalone mindfulness workshop but also challenge the conventional institutional boundary between “psychological support” and “classroom instruction”. These results suggest that contemplative education is not merely an extracurricular mental-health intervention appended to the existing curriculum; rather, it functions as an innovative teaching model that restructures the epistemic and relational conditions of learning itself.

This distinction aligns with McCaw's (McCaw, 2020) critical differentiation between “thick” and “thin” mindfulness. A “thin” approach reduces contemplative practice to pre-class breathing exercises or stress-management techniques-essentially a psychological add-on detached from disciplinary content. By contrast, our embedded model exemplifies “thick” contemplative pedagogy: mindful breathing served as an attentional anchor for subsequent disciplinary inquiry; reflective logs functioned as metacognitive scaffolds for knowledge consolidation; and deep-listening discussions reconfigured the social architecture of the classroom toward dialogic, student-centered learning (Barbezat & Bush, 2014). In this sense, contemplative education operates at the level of instructional design and curriculum delivery, not merely at the level of student welfare services.

From the perspective of teaching reform, this finding implies that the most efficient route to holistic student development may not be through standalone mental-health courses, but through the systematic infusion of contemplative principles into existing disciplinary curricula. Such integration avoids the marginalization of socio-emotional competencies as “non-academic” skills and instead treats attentional training, emotional regulation, and creative insight as legitimate educational outcomes coequal with technical knowledge-a reconceptualization that resonates with outcome-based education frameworks increasingly adopted in Chinese higher education reform.

In another quasi-experiment (non-random), we embedded contemplative elements into the professional classes of 73 students (mindful breathing 3 minutes before class, reflective logs, deep listening discussions) compared with 80 students who were

taught in a traditional way. The results were consistent in direction, but the effect size ($d=1.15-1.45$) even exceeded the main RCT, reminding us that contemplative education does not necessarily require a separate mindfulness course, and embedding professional teaching may be more efficient. However, the design was not randomized, and the teacher effect and selection bias could not be ruled out and could only serve as exploratory evidence.

4.3 Limitations and unfinished business

The limitations of this study need to be disclosed candidly. First, the sample was drawn exclusively from the School of Software, Shandong University - a single institution characterized by an interdisciplinary curriculum integrating software engineering with digital media and design-oriented tracks. While this profile enhanced receptivity to contemplative practices that blend cognitive and creative training, it simultaneously limits generalizability. External validity is questionable when findings are extended to: (i) pure science and engineering colleges lacking arts-design components, where student baseline stress profiles and creativity metrics may differ; (ii) humanities-dominated colleges (e.g., schools of education, psychology, or fine arts) where mindfulness receptivity may be higher but academic stressors qualitatively distinct; (iii) “Double First-Class” research-intensive universities with divergent academic cultures; and (iv) institutions outside China's examination-centered educational context, where baseline stress levels and room for improvement may differ from those observed in our sample. Second, the subjectivity of the self-rating scale is hard to avoid, and physiological indicators such as cortisol and heart rate variability should be added in the future. Third, the eight-week intervention is only a brief interlude for the four-year undergraduate education, and the long-term effect is unknown. Fourth, we did not set up an “active control group” (such as physical exercise, cognitive training), and thus could not rule out the alternative explanation that “any group activity works”. Fifth, the individual style differences between the two instructors were not adequately controlled, and although the LMM included random effects, the sample size was not large enough to precisely estimate the teacher effect. Additionally, the recruitment method (campus posters and course group announcements) relied on voluntary participation, which may have attracted students with pre-existing interest in mental health or mindfulness. This self-selection bias limits the representativeness of the sample for the entire student body of the School of Software. Consequently, the observed effect sizes may represent an upper-bound estimate, and effectiveness may be more modest among students mandated to participate or those with lower baseline receptivity to contemplative practices.

5. Localized Implementation Framework

Translating empirical evidence into sustainable institutional practice requires an implementation framework grounded in curriculum development logic rather than ad hoc program expansion. Based on the findings and limitations mentioned above, we propose a hierarchical framework rather than an ambitious “full coverage” approach. This framework treats contemplative education as a systematic curriculum innovation rather than an auxiliary psychological service, comprising three interconnected layers: curriculum embedding, teacher development, and evaluation feedback.

5.1 Curriculum embedding layer

Guided by the principle of constructive alignment in curriculum design, we adopt a dual track of core electives plus professional infiltration. The core elective course is open to the entire school. It is an 8-week MBSR or MBCT adapted course with 1-2 general education credits. 2-3 classes are offered each semester, with no more than 25 students in each class—this is the limit to which we can guarantee the quality of the teaching staff. Professional infiltration is piloted first in humanities disciplines such as psychology, education, medicine, and arts, with science and engineering postponed: not discrimination, but teachers in these disciplines have less resistance to the issue of “mind-body relationship”, and the pilot resistance is lower. This dual-track design reflects a curriculum-development logic: core electives establish the conceptual and experiential foundation (the “input” layer), while professional infiltration ensures disciplinary transfer and contextualized application (the “process” layer), ultimately generating measurable holistic outcomes consistent with student-centered educational reform. McCaw notes that mindfulness has gained broad traction in educational settings worldwide (McCaw, 2020). However, the diffusion of such practices should not be mistaken for evidence of their effectiveness; poorly planned or rushed implementation may compromise both program integrity and stakeholder confidence.

5.2 Teacher development layer

Curriculum reform is contingent upon teacher capacity. We therefore establish a three-level certification system, but the certification standards need to be localized. The foundation level (16-hour training) is aimed at counselors and head teachers, not to have them teach mindfulness classes, but to identify students who need referrals. The advanced level (40 hours of training plus supervision) is for professional teachers who are interested in offering elective courses. The expert level (supervisory qualification) requires 1 to 2 trainees per school. Our contact with the Chinese Association for Mental Health shows that its Mindfulness SDS system teacher certification has a framework, but the training duration and supervision depth are still less than the MBSR certification in the

United States (which usually requires more than 100 hours). In the short term, “just enough” might be a practical choice; in the long term, standards must be raised.

5.3 Evaluation and feedback layer

Consistent with evidence-based curriculum evaluation principles, process assessment tracks attendance, practice duration, and class engagement—these “engagement metrics” are easier to collect than “outcome metrics” and can also warn of dropout risks early. Result-oriented assessment uses standardized tools such as FFMQ and resilience scales, is administered at the end of each semester, and the data are stored in a school-level database for longitudinal analysis 3 to 5 years later.

We emphasize that the assessment is not about screening out favorable data to “prove the effectiveness of the project”, but about making timely adjustments to “know when it is ineffective”, thereby fulfilling the formative function of curriculum evaluation in continuous teaching improvement. This design is directly informed by the T10 follow-up data reported in Section 3.1: the slight rebound in academic stress and decline in psychological resilience after the intervention ended suggest that without structured consolidation exercises, intervention effects attenuate. Embedding evaluation feedback into the institutional cycle thus serves as the critical mechanism through which contemplative education transitions from a time-limited pilot to a sustainable pedagogical reform.

6. Conclusions

Contemplative education is not a panacea. Our data show that it has substantial benefits for Chinese college students in terms of psychological stress, creativity and attention, but the mechanism is far from clear, the sustainability of the effect depends on consolidation practice, and cultural adaptation adjustments are still being explored. Grafting this insight into the soil of higher education in China requires patience as well as the courage to admit failure. Our small RCT is just the beginning - more rigorous in methodology, still limited in scale, and with room for conclusion. It would be of the greatest value if it could prompt more researchers to explore larger samples, longer follow-ups, and more refined mechanisms.

From an educational practice perspective, the present findings suggest that the future of university teaching reform may depend not on adding more content to an already crowded curriculum, but on cultivating the contemplative capacities—attentional stability, psychological resilience, and creative insight—that enable students to navigate complexity with wisdom. By bridging mindfulness research with curriculum theory and teaching reform practice, this study invites educators and policy-makers to reimagine higher education as a transformative,

whole-person endeavor. The path forward is incremental and interdisciplinary; we hope this modest first step invites others to join us.

Looking ahead, several priorities stand out. First, mechanistic research should integrate ecological momentary assessment and neuroimaging to clarify how contemplative training reshapes attention and stress regulation in real time. Second, optimal consolidation protocols-booster frequency, self-practice duration, and hybrid delivery formats-must be systematically compared to ensure sustainable effects. Third, cultural adaptation should move beyond translation toward deep integration with indigenous Chinese philosophical and pedagogical traditions. Fourth, multi-site trials across diverse institutional tiers are needed to test generalisability. Finally, embedding programmes into formal curricula and teacher training will require cost-effectiveness evidence and policy engagement. The path forward is incremental and interdisciplinary; we hope this modest first step invites others to join us.

Conflict of Interest

The authors declare that they have no conflicts of interest in this work.

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