Disaggregating Art Class Participation and Adolescent Mental Health in China: The Mediating Role of Self-Efficacy

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ABSTRACT:
Art education is increasingly recognized as a resource for adolescent mental health, yet most studies treat art class participation as a single construct and seldom test the psychological mechanisms that link it to well-being, particularly in high-pressure, collectivist East Asian contexts. This quantitative, cross-sectional study disaggregates art class participation into five dimensions—class frequency, creative practice, teacher encouragement, peer support, and art appreciation—and examines both their direct effects on the mental health of Chinese high school students and the mediating role of self-efficacy. Survey data from 400 students were analysed using reliability analysis, Pearson correlations, multiple regression, and tests of mediation (Sobel test and bias-corrected bootstrap). All five dimensions significantly predicted both mental health and self-efficacy, with creative practice showing the strongest direct effect on mental health. Self-efficacy partially mediated every pathway, accounting for roughly half to two-thirds of each total effect. The findings indicate that the well-being benefits of art education are multidimensional and operate partly through enhanced self-efficacy, supporting the integration of art classes into school-based mental health strategies.

Keywords: Art education; self-efficacy; adolescent mental health; psychological well-being; Chinese high school students.

1. Introduction

Increasingly, art education is being acknowledged as a potential source of support for adolescent mental health throughout the world (Hommel and Kaimal 2024). Internationally, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) has indicated that learning the arts is linked with emotional regulation, resilience, and inclusion in society (Fajrie et al. 2024; Marujo and Casais 2021). In some educational systems, schools have begun to recognize structured art classes as safe contexts where students can experiment with new skills, alleviate stress, and nurture self-confidence. In the Chinese context, this recognition is especially timely. In light of the high prevalence of depression and anxiety in Chinese adolescents (Yu et al. 2023; Chen et al. 2023)—approximately

one in five adolescents report moderate or severe depression or anxiety symptoms—and the alarming fact that roughly 21.9% of Chinese high school students perceive themselves as emotionally stressed (Ministry of Education 2020), well-being-focused structured, arts-based activities appear to be absent from most Chinese schools (Qu et al. 2024; Liang et al. 2025).

In large measure, this scarcity of well-being focused, art-based activities is likely due to systemic factors. The reality of high-stakes examinations in China is that most schools are not going to prioritize arts education as much as the main subjects on the college entrance exam, such as math and English. In fact, most schools actually reduce the time available for the arts in favor of exam preparation, often cutting art classes altogether (Ma 2022). While a number of studies show that the arts are protective factors in the mental health of adolescents (Wu et al. 2022), this prioritization creates a tension for Chinese educators. There is also considerable variation among schools with respect to the quality of art instruction. The availability of art classrooms, teaching tools, and materials as well as the qualifications of art instructors vary. Thus, it cannot be assumed that all students will receive an equal opportunity to benefit from the arts. Despite these constraints, a growing body of studies based in the Chinese setting has reached the same conclusions as the international literature regarding the protective effects of the arts on adolescent well-being:

(1) visual arts activities and participation are linked with lower levels of stress and greater emotional regulation (Binnge and Keat 2025)

(2) encouragement from art teachers contributes to students' confidence and coping (Song et al. 2025)

(3) peer support from group art activities enhances a sense of belonging, which is associated with psychological well-being (Yang et al. 2025)

A second area in which extant research appears insufficient is with respect to conceptualization. Existing studies generally operationalize art class participation as a single, unidimensional construct, although the subjective experience of an art class likely contains a variety of discrete elements—including participation rates, actual engagement in art-making practices, teacher encouragement, peer support, and art appreciation. These individual components may play different roles, to varying degrees, in shaping psychological well-being (Lauss and Helm 2024), but by treating participation as a single global measure it becomes unclear to school leaders which elements of art programming might be most amenable to targeted interventions. It is unclear whether they should expand the curriculum to include a broader range of art-based activities, add art-making practices to existing coursework, train art teachers to provide students with more encouragement, etc. Thus, disaggregating art class participation is a requirement, not an option, for school administrators if they want actionable guidance regarding what interventions might produce the greatest benefits.

A third area in which extant research is limited is in the proposed psychological pathways through which the arts may affect well-being. There is broad consensus across the international literature that creative participation improves mental health. Yet few studies have examined the mechanism by which this relationship operates. Self-efficacy, or "beliefs in their own capacity to exercise control over their own functioning and events affecting their lives" (Bandura 1997, p. 2) or, as phrased more recently, "the individual's belief in their capacity to execute behaviors necessary to produce specific performance attainments" (Hussain et al. 2022, p. 1425), is a likely candidate as such a mechanism. By successfully completing art-based tasks, students can have repeated opportunities for mastery experiences and positive feedback—the two main sources of self-efficacy (Bandura 1997)—and a strong sense of self-efficacy can lead to better emotional and psychological well-being by reducing distress and increasing positive emotional states (Basri et al. 2022). It is possible, therefore, that engaging in arts classes enhances self-efficacy, which in turn has positive effects on mental health. Despite the plausibility of this

account, however, self-efficacy has rarely been modeled as a mediator between participation in arts classes and psychological outcomes, and thus school administrators cannot rely on any evidence base with which to design interventions. Thus, the lack of mediation models is also a limitation of the extant literature.

A fourth shortcoming is related to context. Most of the literature to date on the impact of art classes on well-being has come from Western nations that tend to be lower-pressure educational environments and that are generally characterized by a greater sense of individualism (Saxena and Kalia 2024). Yet high-stakes exams, the collectivist social environment that likely affects teacher authority and student relationships, and the substantial urban-rural disparity may impact how and to what extent art classes impact adolescents in China. Thus, the results from lower-pressure studies cannot necessarily be assumed to translate into other countries. It would be useful to have quantitative data on the impact of art classes on psychological well-being in China as well as on the mechanisms underlying this relationship.

In light of the above gaps, the purpose of this study is two-fold. First, we disaggregate the construct of art class participation into five discrete variables—art class frequency, actual art-making practices, teacher encouragement, peer support, and art appreciation. Second, we examine the effect of each of these components on mental health and investigate whether self-efficacy is a mediator. Specifically, we address the following research questions:

(1) Do frequency of art class, art-making practice, encouragement from art teachers, support of friends, and art appreciation have a significant direct effect on adolescents' mental health?

(2) To what extent do students' self-efficacy mediate the relationship between art class, art making, encouragement of art teachers, social support from peers, and art appreciation and adolescent mental health?

Answering these questions will be beneficial both theoretically and practically. Theoretically, such an analysis would help further refine our understanding of the mechanisms linking participation in the arts and psychological outcomes. In this regard, results may inform and extend social cognitive theory (SCT) and the broaden-and-build theory of positive emotions (Fredrickson 2001). Practically, results will be useful in guiding curriculum development, teacher training, and school mental health-related policies. The results of this study are intended to add rigor to the current, general consensus that art classes are beneficial and move the discourse towards specific, evidence-based guidelines on which elements of art class participation are most effective and how those components can be leveraged in the classroom.

2. Literature Review and Theoretical Framework

This section discusses the five dimensions of art participation and self-efficacy, and places the study within two complementary theories. The review does not attempt an exhaustive examination of the relationship between the arts and well-being, instead highlighting the constructs measured by the study, as well as the mechanism examined. We draw from international literature as well as Chinese scholarship.

2.1. Class Frequency and Student Outcomes

Frequency of participation describes the regularity of structured art instruction and is a simple yet critical dimension. Evidence from cross-country comparisons suggests that more regular arts engagement correlates to stronger psychological development (Schonert-Reichl et al. 2023) and the association between art and well-being is tighter when there are regular, timetabled art courses across different countries (Bone et al. 2023). Routine may be part of the reason for these outcomes; as Doyon (2025) suggests, a regular art class provides the comfort of routine and the emotional benefit of respite amidst a high-stress, exam-heavy schedule. These classes create predictability and stability that can lower anxiety and enhance social interaction and belongingness.

An additional advantage of class frequency is that other dimensions of art participation are less

likely to matter as much for these outcomes when classes are frequent because students have more time overall to learn and practice the skills that build their psychological health. One limitation of the literature to date is that the contribution of class frequency is generally analyzed in isolation; it is unclear whether the psychological benefits for regular attendees arise due to exposure to a greater number of art classes or due to higher quality of instruction and support within those classes. Our analysis accounts for class frequency in conjunction with the other four dimensions and therefore can isolate the effect of class frequency from all other factors while still accounting for variation between schools.

2.2. Creative Practice and Psychological Well-Being

Creative practice refers to students' participation in the actual production of art and is typically characterized as a process in which individuals can work through feelings and make explicit those that would be more difficult to convey otherwise. Reviews of the arts-well-being research (e.g., Richesin et al. 2021) and experimental studies have found that students who make art experience lower stress and higher well-being; Richesin and colleagues found significantly lower levels of cortisol (a primary indicator of stress) in healthy adults who spent just 45 minutes making art (Richesin et al. 2021). These processes are particularly salient to adolescents who are experiencing identity formation and intense school and social demands that result in emotional turmoil.

The opportunity to engage in hands-on creation, to turn thoughts and ideas into something visible, offers a mechanism through which young people can express, understand, and process their own emotions, and can lead to a sense of accomplishment and personal agency that supports psychological well-being (Denee et al. 2024). In prior studies, artmaking has been generally subsumed into broader categories of art activities and research has not distinguished between art classes that focus solely on artistic production, art classes that focus solely on art history, and art classes that feature some combination of these practices. This limitation makes it impossible to understand the effect of the actual production of art and we distinguish creative practice as a separate dimension of art participation in this study.

2.3. Teacher Encouragement and Motivation

The role of the art teacher extends beyond the teaching of artistic skills. A study of the effect of different types of instructor support on motivation found that praise, constructive feedback, and motivation communication lead to higher students' self-efficacy and resilience and lower levels of test anxiety (Rago and Gibson 2021). Additionally, encouragement is necessary to support students' creative work and to overcome the fear of failure and self-doubt that comes along with making art and expressing oneself personally (Kang et al. 2024). In the study by Guo and colleagues, positive teacher communication and feedback had a significant impact on the students' motivation to learn art. Encouraging teachers help students feel safe in taking risks, which helps students to overcome barriers to learning in the art classroom. The effect of teacher encouragement is likely especially salient to students in China, where teachers are respected as moral role models and have significant authority, meaning their feedback and the tone in which it is delivered have special significance for the emotional climate of the art class.

2.4. Peer Support and Belonging

Peer support refers to the emotional and collaborative encouragement students provide each other while learning and engaging in art activities. Peer-support in group-based art settings increases feelings of belongingness and decreases feelings of social isolation, which are important protective factors for adolescent mental health (Yang et al. 2025; Holt-Lunstad 2024). Compared to other competitive and more rigidly graded academic disciplines, the nature of art classes affords opportunities to more easily build positive, supportive peer relationships with a less critical and more open approach to one another's work. Group activities can facilitate

collaboration and a sense of peer belonging. Students who receive encouragement and affirmation from their peers feel validated on an interpersonal level, which in turn increases their well-being above and beyond whether or not they themselves produce artistic work.

2.5. Art Appreciation and Meaning

Art appreciation refers to the processes of viewing, experiencing, and interpreting works of art. In addition to increasing art knowledge and cultural literacy, this dimension offers a non-active route through which individuals can develop feelings of connection and meaning (Chiu et al. 2023; Pelowski et al. 2024). For some participants, this dimension facilitates reflection and perspective, and an appreciation of beauty and meaning, experiences that are not necessarily mediated through artistic production. While appreciation of art has been described as a 'less active' engagement than artmaking (Pelowski et al. 2024) and therefore secondary to it, the current study accounts for all five dimensions of art participation and thus allows for an analysis of the unique effects of art appreciation on the outcomes.

2.6. Self-Efficacy as a Psychological Bridge

A growing body of literature identifies self-efficacy as a pivotal asset in dealing with stress and attaining self-improvement (Hussain et al. 2022; Honicke, Broadbent, and Fuller-Tyszkiewicz 2023). Creative pursuits can provide mastery experiences and feedback – the building blocks of efficacy beliefs – time and again. Over time, such evidence of competency in the domain leads individuals to feel emotionally more resilient and better able to manage stressful encounters (Basri et al. 2022).

A number of educational research articles consider self-efficacy a mediator between supportive environments and desirable emotional consequences (Guo et al. 2025; Zhang, Zhao, and Shen 2024), yet only a few have tested self-efficacy per se as the link between disaggregated art participation and mental health of Chinese high school students – the void the present investigation seeks to fill.

2.7. Theoretical Framework

This research is informed by two theories. First, Bandura (1997) Social Cognitive Theory proposes that environmental influences, personal cognitive attributes, and behavioral and emotional results are reciprocally interdependent, and that self-efficacy is central to this reciprocal arrangement. In the proposed model, teacher encouragement and peer support constitute the environmental influences, self-efficacy stands for the personal cognitive attribute, and mental health is the result. Based on mastery experiences acquired through artistic endeavors and positive relations, self-efficacy is expected to improve, which can then lead to enhanced well-being. Consistent with this theory, it is expected that art participation will increase self-efficacy levels and that self-efficacy will be associated with mental health, forming the two halves of the causal chain through which art participation can be argued to improve mental health.

Second, Fredrickson (2001) Broaden-and-Build Theory provides support for the proposed hypothesis. Positive emotions – such as joy, interest, and pride – evoked by creating art and by experiencing beauty are supposed to broaden momentary thought–action repertoires, which in turn build long-term resources such as resilience and self-efficacy. Most importantly, the theory implies that art should influence mental health not only through self-efficacy as a cognitive pathway but also through other routes such as the positive feelings, emotional expression and immersion that creativity entails. This implication motivates the formulation of a hypothesis that art participation may have an indirect influence on mental health through self-efficacy that is partial rather than full mediation, as a cognitive mediation account would assume that art affects mental health solely through self-efficacy.

Drawing on this literature, the conceptual model for the study is proposed such that each of the five art participation dimensions would have a direct positive influence on mental health (path c), as well as an indirect effect through self-efficacy (a path, which is the product of a path from the respective dimensions to self-efficacy

and b path from self-efficacy to mental health). The operationalization of the seven measures is shown in the box below.

3. Methods

3.1. Research Design

In order to calculate the magnitude and direction of the associations amongst naturally occurring variables, a quantitative cross-sectional survey strategy was utilized for this research. In addition, this research methodology enables researchers to analyze the specified mediation model using a large sample at one time (Maier et al. 2023). A survey was chosen because the goal of the study was to determine direct and indirect connections between five dimensions of art participation and mental health rather than an experimental method. This survey design is the most effective for surveying a large number of students in various school settings (Huang et al. 2021).

3.2. Participants

A total of 400 high school students from China participated in this study, with 33.2 percent in senior year 1, 34.2 percent in senior year 2, and 32.5 percent in senior year 3. A total of 53.2 percent of the students were female and 46.8 percent were male. The students were from different areas: major metropolitan (16.0 percent), urban (24.8 percent), suburban (25.5 percent), county or small-city (18.5 percent), or rural (15.2 percent). The students reported their art-learning experience ranging from below 6 months to three years or more, the greatest number were those with three years or more (39.0 percent). Although all of this provides evidence for the applicability of this study to the population of Chinese high schools, the study does not reflect all types of areas or institutions in China.

3.3. Instrument

The research instrument was composed of a demographic survey and thirty-five substantive items representing seven constructs, with five items in each construct. The substantive items were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). To improve the quality of measurement, this study used established and validated scales rather than researcher-designed scales to reduce measurement error and allow for comparisons between the current study and previous research. Items representing class frequency and creative practice were from Deer et al. (2023), those representing teacher encouragement and peer support were from Malecki et al. (2000), items representing art appreciation were from Diessner et al. (2008), items representing self-efficacy were from the General Self-Efficacy Scale (Schwarzer and Jerusalem 2010), and items representing mental health were from WHO-5 Well-Being Index from the World Health Organization (World Health Organization 2024), which reflects students' positive feelings over the past 2 weeks. The complete instrument was provided as an appendix in a Chinese-English format; in this format, the English-language survey was the actual survey instrument, while the Chinese version was provided to allow students to read and respond in their mother tongue, thereby facilitating their understanding and improving the accuracy of responses.

3.4. Procedure and Ethical Considerations

All of the responses were voluntary and anonymous. The survey contained no questions that would allow researchers to identify an individual respondent's identity. Respondents were informed that their answers would not affect their grades or their teachers' grades to discourage responses influenced by the desire to appear socially acceptable. A pilot survey was conducted prior to the survey in order to identify any ambiguity in the questions. Results from the pilot survey indicated that the questions were well-written and understandable and that the survey was reliable and consistent with previous studies (Gao et al. 2018). The study was conducted in compliance with established guidelines for the protection of confidentiality and informed participation of respondents and the security of data.

3.5. Data Analysis

The data analysis consisted of four stages. Cronbach's alpha values were calculated at the beginning of the data analysis to measure reliability of each construct and the entire survey,

as values greater than or equal to 0.70 were used as a measure of internal consistency (Taber 2018). Next, descriptive statistics were analyzed to determine the mean value and variability of each construct.

In the third step, Pearson correlations and two multiple regression models were used to assess the relationships between the variables under investigation; in one of the models, mental health was predicted by the five dimensions of art participation, while in the other model, self-efficacy was predicted by the same five dimensions. Multicollinearity was examined using variance inflation factors (VIF) and values of less than 10 are generally accepted as indicating no multicollinearity. In this research, the VIF was calculated as far below two, thus there was no collinearity problem between any variable.

In the fourth and final stage of data analysis, each of the five dimensions of art participation was tested separately in a mediation model. Indirect effects in these models were calculated as the product of two paths from the original predictors of each dimension to self-efficacy and from self-efficacy to mental health, controlling for the original predictors of each dimension. This indirect effect was tested for statistical significance using the Sobel test as well as using bias-corrected percentile bootstraps with 5,000 bootstrapped samples. The indirect effect is significant if the confidence interval does not include 0, with a 95 percent confidence interval (Hair et al. 2019). The present research adopts a best-practice approach for testing mediating effects that combines a formal product of coefficients test with the bias-corrected percentile bootstrap. The formal product of coefficients test provides a statistically rigorous test of the significance of an indirect effect; the bootstrap method improves on the classic causal-steps procedure, which merely establishes the conditions for mediation, by quantifying and testing the indirect effect. The inclusion of both the Sobel test and bias-corrected percentile bootstrap confidence intervals allows researchers to assess convergent validity by observing the extent to which results from these two tests with differing assumptions agree (Hayes 2017).

4. Results

4.1. Reliability and Descriptive Statistics

Reliability analyses confirmed that all seven scales had adequate internal consistency with coefficient alpha (Cronbach's alpha) in excess of the .70 cut-off, falling between .874 and .912 (mental health scale $\alpha = .912$; art appreciation and self-efficacy, $\alpha = .896$; creative practice, $\alpha = .894$; class frequency, $\alpha = .890$; teacher encouragement, $\alpha = .883$; peer support, $\alpha = .874$).

As expected, all seven scales yielded a similar distribution across the 5-point scales, with five participation dimensions falling between 3.07 and 3.18 (class frequency M = 3.18, SD = 1.02; art appreciation M = 3.15, SD = 1.02; creative practice M = 3.11, SD = 1.03; peer support M = 3.09, SD = 0.96; teacher encouragement M = 3.07, SD = 0.99), and the sixth dimension self-efficacy, yielding a score of M = 3.09 (SD = 1.04). Mental health had the lowest score of all the variables, M = 2.95, SD = 1.11. The fact that the central outcome of this study is the weakest-scoring of the measures suggests the reason for the study. That is, the mental health of these students was the most fragile component of the model and fell just below the scale midpoint.

4.2. Correlation Analysis

The correlations among the variables demonstrated that all variables are positively and significantly associated with mental health (all ps $< .001$). With respect to the five participation dimensions, only creative practice had stronger correlations with mental health, r = .561, than class frequency (r = .520), art appreciation (r = .506), teacher encouragement (r = .450), and peer support (r = .416).

The most notable result from this analysis was with respect to self-efficacy, the strongest correlate of mental health of all the variables (r = .680). Self-efficacy also correlates significantly, though somewhat less highly, with each of the five participation dimensions, the highest being creative practice (r = .530) and art appreciation (r = .524), followed by class frequency (r = .497), teacher encouragement (r = .440) and peer support (r = .426). With respect to self-efficacy

as a potential mediator of the relationship between participation and mental health, it is notable that self-efficacy is the only variable that has strong, statistically significant correlations with all other variables (all ps < .001). The correlation matrix suggests the potential for self-efficacy to emerge as a partial mediator of these relationships.

4.3. Regression: Direct Effects on Mental Health

In the first multiple regression analysis, the five participation dimensions were regressed on mental health and, together, they were significant, $R^2 = .502$, $F(5, 394) = 79.51$, $p < .001$, explaining over half the variation in mental health. All five were significant independent contributors with creative practice, $\beta = .264$, $p < .001$, and, in order of effect size, teacher encouragement $\beta = .217$, $p < .001$, class frequency $\beta = .195$, $p < .001$, art appreciation $\beta = .179$, $p < .001$, and peer support $\beta = .156$, $p < .001$. Multicollinearity was not an issue with variance inflation factors ranging from 1.19 to 1.56.

The result from this regression is significant for at least two reasons. First, it suggests that creative practice may play a more salient role in the mental health of adolescents compared to other art-related activities. At the same time, the fact that all five participation dimensions have a statistically significant correlation and regression coefficient with the outcome variable indicates that all five contribute to mental health.

4.4. Regression: Predicting Self-Efficacy

In the second multiple regression, self-efficacy was again a significant outcome variable for all five participation dimensions, $R^2 = .485$, $F(5, 394) = 74.35$, $p < .001$, explaining nearly half the variation in self-efficacy. Interestingly, the order of contribution was different from the regression with mental health: art appreciation, $\beta = .225$, $p < .001$, was followed by creative practice, $\beta = .222$, $p < .001$, teacher encouragement $\beta = .207$, $p < .001$, peer support $\beta = .176$, $p < .001$, and class frequency $\beta = .170$, $p < .001$.

Thus art participation is not only positively related to mental health but also significantly related to an important personal resource in adolescents self-efficacy with art appreciation and creative practice making the most distinctive contribution to students' perception of their abilities. The order of the contribution of these participation dimensions differs by the outcome variable which is not surprising since they each are uniquely associated with the mental health of the participants.

4.5. Mediation Analysis

The mediation analysis assessed whether self-efficacy partially accounted for the effects of all of the dimensions of participation on mental health. As Table 1 shows, all of the indirect effects were positive and significant (Sobel z statistics ranging from 8.02 to 9.13, $p < .001$), and all of the bias-corrected bootstrap 95 percent confidence intervals excluded zero. The magnitudes of the indirect effects were also comparable—art appreciation (ab = .327, 95% CI [.263, .397]), creative practice (ab = .305, [.243, .373]), class frequency (ab = .303, [.241, .370]), peer support (ab = .303, [.234, .374]), and teacher encouragement (ab = .294, [.227, .364]).

Table 1. Indirect effects of art participation dimensions on mental health through self-efficacy

Art participation dimension	Indirect effect (ab)	95% bootstrap CI	Mediation (% of total effect)
Art appreciation	.327	[.263, .397]	59.3%
Creative practice	.305	[.243, .373]	50.3%
Class frequency	.303	[.241, .370]	53.4%
Peer support	.303	[.234, .374]	63.1%

Art participation dimension	Indirect effect (ab)	95% bootstrap CI	Mediation (% of total effect)
Teacher encouragement	.294	[.227, .364]	58.5%

Note. N = 400. All indirect effects are significant at $p < .001$ (Sobel $z = 8.02–9.13$). Confidence intervals are bias-corrected and based on 5,000 bootstrap resamples.

Moreover, in each case the direct effect of the predictor on mental health was significant when self-efficacy was added to the model; thus, mediation was partial and not full. These partial effects ranged from 50 to 63 percent of the total effects (class frequency = 53.4 percent, creative practice = 50.3 percent, teacher encouragement = 58.5 percent, peer support = 63.1 percent, art appreciation = 59.3 percent), supporting two conclusions. First, self-efficacy is a meaningful mechanism of art's benefit: somewhere between half and nearly two-thirds of the effect of art participation on mental health is explained by its association with enhanced self-efficacy. Second, since the partial mediation was the case for each of the five types of art participation, there must be other mechanisms by which art participation promotes mental health that were not measured—perhaps mechanisms related to emotion, creative process, or social support, which the Broaden-and-Build perspective highlights as likely sources of positive emotion and well-being.

In support of the interpretation that the mediated effects are real (not dependent on a particular set of methodological or analytic assumptions), the bias-corrected bootstrap results were highly consistent with the Sobel results for each of the five art participation variables. All four stages of the mediation analysis (valid and reliable measures; strong bivariate correlations; two well-fitting multiple regression models; significant partial mediation) provide converging evidence.

5. Discussion and Conclusion

5.1. Interpretation of Findings

The aim of this research was to break down art class engagement and to empirically examine self-efficacy as the psychological pathway connecting that participation to adolescent mental health. The study findings provide clear answers to both research questions. Each of the five factors – the frequency of classes, creative practice, teacher encouragement, peer support and art appreciation – were found to be significant predictors of mental health. In addition, self-efficacy was confirmed as a partial mediator of each of these relationships.

Beyond this overarching trend, the specific results from the disaggregated five factors are also informative on their own. Frequency of art classes proved to be a significant predictor of mental health, demonstrating the importance of regularity. Art class can benefit students in more ways than one-off significant and positive experiences; it is also about the continuity and routine the class provides. As such, the availability of an art class in a high-pressure academic environment may provide regular access to regular periods of emotional rest or recovery. Frequency of art class was not however the greatest contributor to mental health. This finding highlights that more than simply increasing the number of times an art class is scheduled will automatically benefit students if this is not accompanied by high-quality provision.

Conversely, it was evident that engagement in creative practice (making work in the classroom) emerged as the most potent direct predictor of mental health. The benefits from engagement in an active process of 'doing', which might entail experimentation, expression and/or creation, may be particularly strong in terms of mental health, possibly because it allows students to externalize their feelings, witness tangible results and gain a sense of ownership. In practical terms, this suggests the need to ensure that art lessons include the opportunity to produce art and does not lose sight of the creative activity that the subject is centred around by instead becoming

too focused on theory or other passive elements.

Teacher encouragement was also a significant predictor of mental health over and above the other four predictors, underlining that the relational environment of the class has a unique influence. In the context of teachers having a considerable degree of emotional control and authority, a teacher showing support and providing feedback may be not only important from a motivational perspective, but an essential element of the classroom becoming a psychosocial space.

Peer support was, at first glance, a surprising result, being the weakest of the five significant predictors. That notwithstanding, it was a significant contributor across every statistical analysis, indicating that peer interactions form part of the psychological environment of art lessons. Being part of an art class and benefiting from mutual support are elements of art students' social experience, too.

Art appreciation continued to be a significant predictor of mental health, even if only the 5th strongest of the five predictors. This finding underlines that the mental health benefits of participation in art class extend beyond only the act of creating art. Appreciation, reflection and understanding have their own merit from a mental health perspective.

Two specific findings from the pattern of results provide particularly noteworthy insights. The first of these relates to the difference in predictive strength between creative practice and art appreciation. The direct effect was highest for creative practice, while the strongest predictor for self-efficacy was the sum of both creative practice and art appreciation. It could be that the immediate benefit of well-being that creative practice offers students, for example in the form of positive feelings and feeling of ownership, is only partially mediated by the self-confidence that engagement in creative practice provides. However, it appears to be the case that reflective activities, such as appreciation of other students' art, do not directly provide a positive feeling, but that the indirect path through increasing self-efficacy contributes meaningfully to the students' well-being.

The second point is the fact that self-efficacy emerged as a partial, rather than a full, mediator in all five instances. Had self-efficacy been a full mediator, the value of participation in art class would arguably have reduced to self-efficacy building. Given the persistence of the direct effects, this provides support for a theory that participation in art class has multiple pathways for benefit, including a cognitive element through self-efficacy and psychological elements such as positive affect, a sense of relief and a sense of belonging. The magnitude of the association between self-efficacy and mental health ($r = .680$) supports the idea that the study measured something internal and genuinely psychological rather than simply listing a set of external conditions in the classroom.

5.2. Theoretical Implications

Our data demonstrate how Social Cognitive Theory is applied in the area of art education. Classroom environmental variables (teacher encouragement, peer support) and activity-based variables (creative practice, appreciation) both correlated with an internal cognitive variable (self-efficacy), which in turn correlated with an emotional outcome (mental health). Thus the full triadic model of the theory is reflected in our results. The findings also support the Broaden-and-Build Theory because the partial mediation implies there must be additional pathways to sustained well-being, perhaps including episodic positive affect or catharsis.

In addition, we have enriched a literature that is otherwise largely Western. Given that the model works in the competitive, examination-obsessed, and collectivistic context of Chinese high schools, our study increases the generalizability of theories about the benefits of arts education for well-being, and suggests that art classes can function in a meaningful way as psychological interventions for high school students in stressful contexts. Finally, the difference in effect sizes across the five dimensions suggests a need to move beyond a broad-brush understanding of art education; subsequent theoretical and practical work should pay attention to structure, activity,

teacher influence, peer influence, and appreciation.

5.3. Practical Implications

Given that all five dimensions predict mental health, art class participation should be viewed by educational policymakers as an integral part of school-based mental health infrastructure, not as peripheral or replaceable. Regular participation is thus not merely a curricular matter but also a decision related to mental health; reducing the frequency and duration of art class has potential, unappreciated side effects.

Because creative practice showed a strong relationship with mental health, educational administrators should protect the active, experiential, and productive nature of art lessons, resisting the impulse to replace active, expressive work in art classes with rigid, knowledge-based instruction.

Since teacher encouragement and peer support significantly predicted mental health, school leaders should recognize that the social and relational context of art classes matters. Professional development for art teachers should include emotional-supportive pedagogies and teaching styles that emphasize positive comments, respectful correction, and recognition of effort and improvement, and instructional designs in art classes should create opportunities for students to interact collaboratively, learn from one another in small group projects, and exchange critique without the threat of social judgment.

Since self-efficacy is both a powerful predictor and a reliable mediator, educational practitioners could consider including confidence-building interventions in lesson planning; students might, for example, be offered achievable challenges, given opportunities to view tangible, demonstrative improvement over time, and provided constructive, constructive, and corrective feedback in the classroom; in this way art classes are able to function not only as places for the development of skills, but also as means for developing students' psychological resources in addition to artistic skills. These implications also align with the Healthy China 2030 initiative and the Double Reduction policy, and suggest a feasible, cost-effective, school-based alternative to clinical mental health care for China, with the possibility for scaling up the model in both rural and urban settings that utilizes existing infrastructure (teachers and facilities).

5.4. Limitations and directions for future research

These conclusions come with several limitations that suggest avenues for future investigation. The cross-sectional design provides strong evidence for association and mediation, yet does not support a determination of directionality, such as whether art participation or improved art appraisals are supported by better mental health. Future longitudinal studies following students over time can help determine the causal ordering and examine the association between changes in art participation and subsequent changes in self-efficacy and mental health.

Second, the use of entirely self-reported data makes the findings vulnerable to social-desirability and common-method biases, especially for the mental-health measures. Future studies could include triangulated measures from self-report, interviews, teacher observation, and other assessments.

Third, while the sample of 400 included participants from different schools in different geographical locations and with varied art experience and background, it could not account for all differences in the educational environment of China, including province differences, school resources, local policies, and socioeconomic status. Future studies should include more fine-grained comparisons between groups, such as those in urban versus rural schools or those in schools with different resource levels.

Fourth, the product-of-coefficients approach, in addition to Sobel and bootstrap methods, was used to assess mediation. Future studies should incorporate structural equation modeling to model both latent constructs and errors together and should apply these methods in longitudinal studies. Because self-efficacy only partially mediated the observed relationships, future studies should examine how other factors, such as emotional regulation, social inclusion,

resilience, enjoyment, and/or identity development, serve as potential mediators. Future work should also examine how gender, school location, experience prior to art class, and academic stress may moderate the strength of the model.

5.5. Conclusion

The results of this study contribute strong empirical evidence in the field to suggest that participation in art class is positively correlated with the mental health of Chinese high school students and that self-efficacy plays an important mediating role in this relationship. All five dimensions of participation were significantly associated with both mental health and self-efficacy in the sample, and self-efficacy acted as a partial mediator in each pathway. Thus, art class may promote well-being among Chinese high school students both directly and indirectly through an increase in their confidence in their abilities.

In particular, creative practice was the most important dimension of participation, though teacher encouragement, peer support, class frequency, and class appreciation were also meaningfully related to mental health and self-efficacy. For psychological science and educational psychology more broadly, this study highlights that the value of participation in the arts is multidimensional and psychologically real. Students may benefit mentally from art class not just because art is fun to do, but because it enables them to believe more strongly in their own ability to cope, create, and grow. In an educational context where the academic pressure may be extreme, this result is theoretically interesting and practically important, calling on schools, teachers, and policy makers to recognize art as an important component of adolescent mental health development rather than a mere extracurricular activity.

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