

Research Article**Research on Influencing Factors of Teachers' Teaching Performance from the Perspective of Creative Music Teaching**Siwen Wang^{1,*}, Vincent Wee Eng Kim¹¹Universiti Tun Abdul Razak (UNIRAZAK), Kuala Lumpur 50400, Malaysia***Correspondence:** Siwen Wang, siwen@my-igs.com

© The Author(s) 2026.

This article is published by Wisdom Academic Press Ltd. under a Creative Commons Attribution 4.0 International License. The license permits use, sharing, adaptation, distribution, and reproduction in any medium or format, provided that appropriate credit is given to the original author(s) and the source, a link to the license is supplied, and any modifications are indicated. Unless otherwise stated, all images and third-party materials included in this article are also covered by the same license. For any material not covered by this license, if the intended use is neither permitted by applicable law nor allowed under the license terms, direct permission must be obtained from the copyright holder. To view a copy of this license, please visit <http://creativecommons.org/licenses/by/4.0/>.

Abstract

Creative music pedagogy introduces instructional demands that are not fully captured by conventional measures of teaching effectiveness. This study examined the associations of four factors—creative music teaching competence, resources and environment, motivation and attitude, and professional development support—with teachers' self-reported teaching performance, as well as their indirect statistical associations through creative teaching self-efficacy. Data from 386 in-service primary- and secondary-school music teachers in China were analyzed using WLSMV structural equation modeling. The hypothesized model showed good fit to the data (robust CFI = .993, robust RMSEA = .023). All four antecedents were positively associated with self-reported performance. Competence had the largest numerical direct coefficient ($\beta = .217$), whereas professional development support had the smallest ($\beta = .139$); these coefficient differences were not formally tested. Creative teaching self-efficacy was positively associated with performance ($\beta = .280$), and all four indirect statistical associations through self-efficacy were significant. The findings identify teacher confidence as a shared statistical link among personal, contextual, and professional conditions and self-reported performance. Because the data were cross-sectional and self-reported, the results do not establish causal or temporal relationships.

Keywords

Creative music teaching, Teaching performance, Creative teaching self-efficacy, Influencing factors, Structural equation modeling

1. Introduction

There has been a shift from learning processes geared toward reproducing set pieces to those that involve improvising and creating new sounds, leading to the imposition of new requirements on teaching expertise. The teacher's function has thus evolved from merely teaching notation and technique to creating open musical assignments and accepting varied results from learners in addition to assessing work based on no single acceptable solution (Maor et al., 2025). The nature of teaching performance in this area is uniquely different from other subjects where there exist standard answers to questions.

First, a metanarrative synthesis of generalist teachers revealed that one's background, confidence, and context support play an important role in the delivery of music, although most of the research findings pertain to the delivery itself as opposed to the teacher's creative skills (Nguyen et al., 2025). Further, a study that analyzed the classroom activities of music educators observed that the use of creative lessons and diverse sound exploration contributed to deeper engagement of pupils in the learning process, although there is no analysis of the teacher-related factors that facilitate this process (Jiang et al., 2025). In terms of research on creative teaching in education in general, a set of behaviors associated with encouraging the production of students' creative products was identified and categorized according to affective, cognitive, and behavioral aspects (Brauer et al., 2025). These behaviors represent creative teaching activities, although they fail to define the motivation behind a teacher's efforts and lack consideration of musical conditions, such as the access to instruments and sound visibility.

The second gap is related to mechanism. Research in the area of general education suggests that creative ability does not directly affect outcomes but works through certain psychological intermediaries; for instance, a study on senior high school teachers has demonstrated that teacher creativity acts as a mediator between workplace communication and performance ratings (Dogbe et al., 2024). Whether such an indirect pattern applies to creative music teaching has not yet been examined. Prior research usually focuses on one predictor at a time and one subject at a time and fails to consider all together.

This research attempts to fill this gap by adopting creative music teaching as a situational variable that provides the context for examining variables associated with self-reported teaching performance. The model developed in this research includes creative music teaching competence, creative teaching resources and context, creative teaching motivation and attitudes, and professional development as potential associated variables, while creative teaching self-efficacy is specified as a statistical mediator (Burić et al., 2024).

The four antecedents also answer different parts of the same instructional problem. Competence concerns whether a teacher can design and guide improvisation, composition, and open-ended sound exploration. Resources and environment concern whether instruments, space, time, technology, and an

experimentation-supportive climate are available. Motivation and attitude concern willingness to persist when creative activities produce uncertain outcomes, while professional development support concerns opportunities for learning, observation, feedback, and collaboration. Keeping these domains separate avoids treating personal skill, contextual opportunity, willingness, and institutional support as one undifferentiated condition. Creative teaching self-efficacy is positioned as a possible statistical link because capability beliefs may influence effort and persistence when lessons require teachers to respond to unexpected musical ideas. The model therefore integrates personal and contextual conditions without assuming that efficacy is equivalent to performance or that the proposed ordering has been demonstrated longitudinally.

Teaching creatively refers to using imaginative instructional methods, whereas teaching for creativity refers to developing students' creative capacities; creative music teaching may include both. Social cognitive theory distinguishes task-specific self-efficacy from enacted performance (Bandura, 1997). Competence, resources/environment, motivation/attitude, and professional development represent complementary personal and contextual conditions, while efficacy may be statistically associated with whether those conditions are translated into reported practice. This rationale supports the proposed paths but does not establish temporal ordering.

2. Methods

2.1. Research Design and Hypotheses

This cross-sectional quantitative study examined associations between four antecedent variables and self-reported teaching performance in creative music teaching. The antecedents were creative music teaching competence, creative teaching resources and environment, creative teaching motivation and attitude, and professional development support. Creative teaching self-efficacy was specified as an intervening variable. Direct paths from all four antecedents to self-reported performance were retained when the indirect associations were estimated. Because all variables were measured at one time, the proposed ordering represents a theory-informed statistical model rather than demonstrated temporal or causal ordering.

H1a–H1d: Creative music teaching competence, resources and environment, motivation and attitude, and professional development support are each positively associated with self-reported teaching performance.

H2a–H2d: The four antecedent variables are each positively associated with creative teaching self-efficacy.

H3: Creative teaching self-efficacy is positively associated with self-reported teaching performance.

H4a–H4d: Each antecedent has a positive indirect statistical association with self-reported

teaching performance through creative teaching self-efficacy.

2.2. Participants and Sampling

The sample comprised 386 in-service primary- and secondary-school music teachers from China. The Chinese-language online questionnaire was administered in April 2026 through music-teaching research offices, teacher-development centers, provincial music-education networks, and professional teacher groups. Eligibility required respondents to confirm current employment as a primary- or secondary-school music teacher and at least one year of teaching experience; teaching subject, school level, and employment-status responses were checked for consistency.

Of 520 invitations, 412 submissions were received. Eleven ineligible cases were excluded. Five duplicate submissions shared the same anonymized invitation token and device/browser signature and had closely matching submission times; the later record was removed. Ten low-quality records were removed because completion time was below one third of the median, responses were invariant across all 27 items, or eligibility answers were logically inconsistent. The final 386 records represented 74.2% of the invitations. Recruitment used non-probability convenience and purposive sampling; therefore, the sample should not be treated as representative of all music teachers in China. The demographic characteristics of the participants are presented in Table 1.

Table 1

Demographic Characteristics of the Participants

Characteristic	Category	n	%
Gender	Female	234	60.6
	Male	152	39.4
Teaching experience	0–5 years	118	30.6
	6–15 years	169	43.8
	More than 15 years	99	25.6
School level	Primary	213	55.2
	Secondary	173	44.8
Professional title	Junior	142	36.8
	Intermediate	175	45.3
	Senior	69	17.9

2.3. Measurement Instrument

The questionnaire contained 27 items measuring six latent constructs. Creative music teaching

competence comprised five items; resources and environment, motivation and attitude, and professional development support comprised four items each; and creative teaching self-efficacy and self-reported teaching performance comprised five items each. Responses ranged from 1 (strongly disagree) to 5 (strongly agree). Performance items measured teachers' reports of their own classroom practice, not independently observed instructional quality.

Competence items were informed by creativity-fostering teacher-behavior research (Soh, 2000), and self-efficacy items were conceptually adapted from social-cognitive and creative self-efficacy formulations (Bandura, 1997; Tierney & Farmer, 2002). The resources and environment, motivation and attitude, professional development support, and self-reported teaching performance items were newly developed by the authors for the present study rather than adapted from a specific validated scale. Their content was informed by the music-teaching, professional-learning, and creativity literature and was reviewed for construct relevance and contextual appropriateness. Wording referred to improvisation, composition, arrangement, sound exploration, instruments, suitable space, and open-ended musical tasks. These measures were contextualized rather than treated as verbatim copies of established scales.

Two bilingual education researchers independently prepared the Chinese wording and reconciled differences; a third bilingual researcher completed a blind back-translation. Two music-education specialists reviewed construct relevance, clarity, contextual fit, conceptual overlap, double-barreled wording, and social-desirability risk. A cognitive pilot with 30 in-service music teachers identified six overly long or ambiguous items, which were shortened or clarified. The cognitive pilot was used to assess wording clarity and response comprehension; it was not treated as evidence that the six latent constructs had been fully validated. The complete 27-item questionnaire, construct mapping, and response format are presented in Appendix A.

2.4. Data Analysis

The data were screened for missing and out-of-range values, duplicated identifiers or response patterns, implausibly short completion times, invariant responding, and inconsistent eligibility fields. No item-level missing or out-of-range values remained in the final dataset. Item-response distributions were examined for sparse categories and extreme concentration. The structural relations were specified as linear latent-variable associations in accordance with the hypothesized model. Because the indicators were treated as ordered categorical variables and estimated using WLSMV, cases were not excluded solely on the basis of multivariate nonnormality. Potentially problematic response patterns were addressed through the prespecified screening criteria for completion time, invariant responding, duplication, and inconsistent eligibility information. Because the 27 five-category indicators were ordinal, confirmatory factor analysis and structural equation modeling were conducted using WLSMV

in R 4.4.3 with lavaan 0.7-2 (Rosseel, 2012) and semTools 0.5-9. WLSMV was selected because it is suitable for ordered indicators and does not require them to be treated as normally distributed continuous variables (Flora & Curran, 2004).

Internal consistency was assessed using Cronbach's alpha and composite reliability, convergent validity using standardized loadings and average variance extracted (AVE), and discriminant validity using Fornell–Larcker and HTMT. HTMT values below .85 were treated as conservative evidence of discriminant validity (Henseler et al., 2015), and VIF values below 5 as indicating no serious predictor multicollinearity. Common-method risk was examined using the first unrotated factor and comparison of one-factor and six-factor CFA models. An attempted equal-loading latent method-factor model did not converge and was not interpreted as evidence that same-source bias was absent (Podsakoff et al., 2003).

Indirect-association confidence intervals were calculated from WLSMV estimates using the delta method, with two-sided $p < .05$. No a priori power analysis was conducted, and a universal respondent-to-item ratio was not used as the sole justification. SEM sample requirements depend on loading strength, path magnitude, model complexity, missingness, and estimator (Wolf et al., 2013). For the six-factor, 27-indicator model, $N = 386$ yielded converged solutions, finite standard errors, and stable estimates; this post hoc evidence does not replace preregistered power planning.

2.5. Ethical Considerations

Before participation, all respondents were informed of the purpose of the study, the voluntary and anonymous nature of the questionnaire, and their right to discontinue participation at any time before submission. All respondents were adults and indicated their willingness to participate before completing the questionnaire. No directly identifiable personal information was collected, and the data were used solely for research purposes.

3. Results

3.1. Reliability and Validity Testing

The measurement model fit the data well: robust $\chi^2(309) = 266.046$, $p = .963$, CFI = .993, TLI = .992, RMSEA = .023, 90% CI [.000, .040], and SRMR = .027. Cronbach's alpha ranged from .825 to .912, and all AVE values exceeded .50. Discriminant validity was supported by the Fornell–Larcker criterion and HTMT. Reliability and convergent-validity results are presented in Table 2, and complete standardized item loadings, standard errors, significance levels, and residual variances are reported in Appendix B.

Table 2

Reliability and Validity Results

Construct	Items	Cronbach's alpha	CR	AVE
Competence	5	0.887	0.888	0.736
Resources/environment	4	0.825	0.827	0.621
Motivation/attitude	4	0.857	0.857	0.722
Professional development	4	0.842	0.846	0.646
Self-efficacy	5	0.903	0.908	0.768
Self-reported performance	5	0.912	0.914	0.816

3.2. Descriptive Statistics and Correlations

Scores remained toward the upper end of the five-point scale, with means ranging from 3.468 for professional development to 3.892 for motivation and attitude. All correlations were positive and moderate, with the highest correlation (.631) between creative teaching self-efficacy and self-reported teaching performance. The maximum HTMT was .695. The first unrotated factor accounted for 38.13% of item variance, and the one-factor WLSMV model fit markedly worse than the six-factor model (CFI=.580, RMSEA=.176, SRMR=.128); these preliminary diagnostics do not eliminate common-method concerns. The correlations and square roots of AVEs are displayed in Table 3. VIF values ranged from 1.194 to 1.261, indicating no serious multicollinearity among the four antecedent variables.

Table 3

Descriptive Statistics, Correlations, and Discriminant Validity

Variable	M	SD	CC	RE	MA	PD	SE	TP
CC	3.819	0.590	0.858	—	—	—	—	—
RE	3.543	0.673	0.319	0.788	—	—	—	—
MA	3.892	0.588	0.380	0.291	0.849	—	—	—
PD	3.468	0.733	0.271	0.350	0.251	0.804	—	—
SE	3.756	0.635	0.517	0.467	0.519	0.428	0.876	—
TP	3.827	0.595	0.523	0.483	0.502	0.427	0.631	0.903

Note. Bold diagonal values are the square roots of AVE. N = 386 in-service teachers.

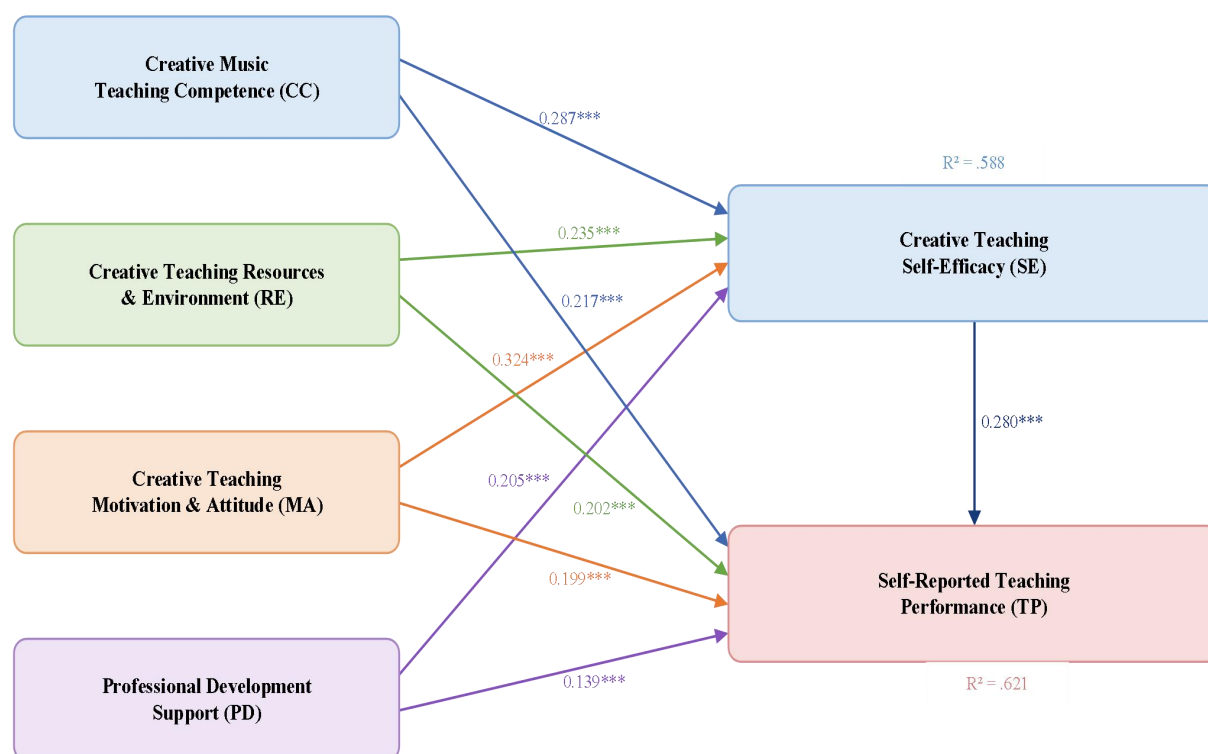
3.3. Structural Model Testing

The structural model fit the data well: robust $\chi^2(309) = 266.046$, CFI = .993, TLI = .992, RMSEA = .023, and SRMR = .027. The measurement and structural models produced identical global fit indices because the structural portion was saturated at the latent-variable level. Exogenous covariances and the required paths among the endogenous constructs were freely estimated; consequently, the structural regressions re-expressed rather than further restricted the fitted latent covariance matrix.

All four influencing factors had positive and statistically significant direct associations with self-reported teaching performance: competence ($\beta = .217$), resources and environment ($\beta = .202$), motivation and attitude ($\beta = .199$), and professional development support ($\beta = .139$). All four factors were also positively associated with creative teaching self-efficacy ($\beta = .205-.324$), which was positively associated with self-reported teaching performance ($\beta = .280$). These coefficient differences were not formally tested and should not be interpreted as evidence that one influencing factor was substantively more important than another. Standardized estimates are presented in Figure 1, and complete structural and indirect estimates are reported in Table 4.

Figure 1

Standardized WLSMV Structural Model



3.4. Indirect Statistical Associations

All four indirect statistical associations through creative teaching self-efficacy were significant: competence ($B = .131$, $SE = .041$, $p = .001$, 95% CI [.050, .212]), resources and environment ($B = .107$, $SE = .037$, $p = .004$, 95% CI [.035, .179]), motivation and attitude ($B = .147$, $SE = .042$, $p < .001$, 95% CI [.066, .229]), and professional development support ($B = .093$, $SE = .031$, $p = .003$,

95% CI [.032, .155]). All corresponding direct paths remained significant. This pattern is consistent with partial statistical mediation under the specified model, but the cross-sectional data do not establish a causal mechanism or temporal ordering.

The total associations with self-reported teaching performance were .484 for competence (SE = .079, $p < .001$, 95% CI [.329, .638]), .436 for resources and environment (SE = .085, $p < .001$, 95% CI [.269, .604]), .472 for motivation and attitude (SE = .081, $p < .001$, 95% CI [.313, .630]), and .319 for professional development support (SE = .070, $p < .001$, 95% CI [.181, .456]). The model explained 58.8% of the variance in creative teaching self-efficacy and 62.1% of the variance in self-reported teaching performance.

Figure 2

Indirect Statistical Associations Through Creative Teaching Self-Efficacy

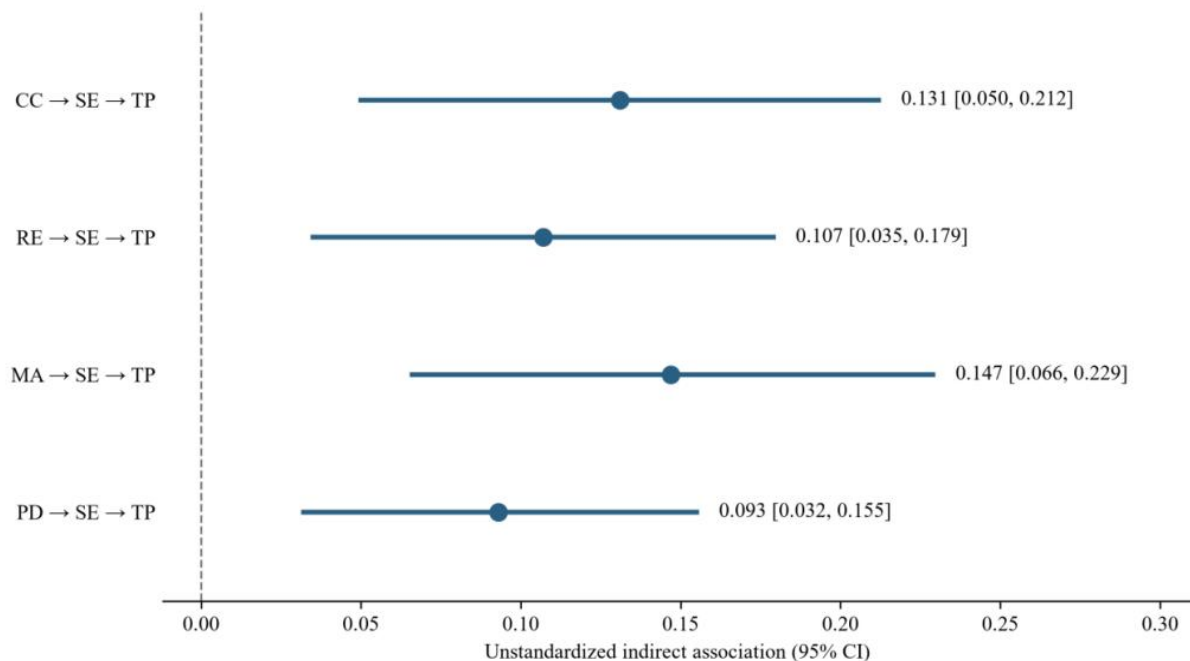


Table 4

Structural and Indirect Associations

Path	B	SE	β	p	95% CI
CC → SE	.448	.077	.287	< .001	[.297, .599]
RE → SE	.367	.088	.235	< .001	[.194, .539]
MA → SE	.504	.079	.324	< .001	[.349, .659]
PD → SE	.320	.072	.205	< .001	[.178, .462]
CC → TP	.353	.084	.217	< .001	[.188, .518]

RE → TP	.329	.085	.202	< .001	[.163, .495]
MA → TP	.324	.085	.199	< .001	[.157, .491]
PD → TP	.225	.072	.139	.002	[.084, .367]
SE → TP	.292	.076	.280	< .001	[.143, .442]
CC → SE → TP	.131	.041	—	.001	[.050, .212]
RE → SE → TP	.107	.037	—	.004	[.035, .179]
MA → SE → TP	.147	.042	—	< .001	[.066, .229]
PD → SE → TP	.093	.031	—	.003	[.032, .155]

Note. CC = competence; RE = resources and environment; MA = motivation and attitude; PD = professional development support; SE = creative teaching self-efficacy; TP = self-reported teaching performance. *B* = unstandardized estimate; β = standardized estimate.

4. Discussion

All four influencing factors were positively associated with self-reported teaching performance, and each had a significant indirect statistical association with performance through creative teaching self-efficacy. Competence had the largest numerical direct coefficient, whereas professional development support had the smallest direct coefficient and indirect estimate in the present sample. However, the coefficient differences were not formally tested and therefore do not establish substantive differences in importance among the factors. The association between professional development support and self-reported performance through efficacy beliefs is broadly consistent with evidence that creative self-efficacy may be related to teachers' engagement in creativity-fostering practices (Cayirdag, 2017). Structured professional-development activities may also be associated with changes in teachers' confidence before measurable changes in practice become evident (Yeh et al., 2025). Previous research has identified professional development as relevant to music teachers' readiness and professional outcomes (Zhou & Guan, 2025).

The context of creative music teaching helps clarify why self-efficacy may be relevant. Creative lessons often depend on access to instruments and suitable spaces and require teachers to respond to unexpected musical ideas. These conditions may make confidence particularly relevant to sustaining creative teaching practice, although the present cross-sectional design cannot establish self-efficacy as a causal mechanism (Brauer et al., 2025).

The pattern can be compared cautiously with prior literature. Competence, confidence, and contextual support have been identified as recurring concerns in music-teaching research, although much of the available evidence concerns generalist teachers and does not directly validate the present model (Nguyen et al., 2025). Previous research has also examined the relationship between music educators and student involvement, but that outcome differs from the self-reported teacher performance assessed in the present study (Jiang et al., 2025). Research on creativity-fostering behavior has described teaching practices that support student creativity but has not established why teachers sustain these practices over time (Brauer et al., 2025). The present results therefore provide a coherent empirical picture of how these domains may be modeled together. Future research would need to test whether the same construct distinctions, path ordering, and coefficient pattern are observed across school levels, education systems, languages, and independently rated classroom performance. It should also distinguish changes in teachers' confidence from changes in lesson quality, student participation, and creative musical outcomes, because these indicators need not develop at the same rate or respond to the same forms of support.

If replicated with longitudinal or experimental data, the pattern could motivate tests of sustained professional development, supervised improvisation and composition, mentoring, and access to instruments and suitable spaces. These are tentative implications rather than demonstrated intervention effects.

Several limitations should be considered when interpreting these findings. The cross-sectional design supports associations rather than causal or temporal conclusions, and teaching performance may also influence self-efficacy over time. Because all constructs were measured through teacher self-reports, the reported performance does not represent independently observed instructional effectiveness, and common-method bias remains possible. The non-probability convenience and purposive sampling strategy also limits the generalizability of the findings to the wider population of music teachers in China. Although the adapted and newly contextualized items demonstrated acceptable internal consistency and factorial validity, no external criterion-validity evidence was available; therefore, the measures require further validation in an independent sample. Future research should employ longitudinal or multi-source designs and incorporate independently rated performance measures and more objective assessments of teaching quality.

5. Conclusion

This study examined influencing factors related to music teachers' self-reported instructional performance from the perspective of creative music teaching. Based on survey data from 386 in-service teachers, creative teaching competence, resources and environment, motivation and attitude, and professional development support were all positively associated with self-reported performance.

Competence had the largest numerical direct coefficient and professional development support had the smallest, although these coefficient differences were not formally tested. Creative teaching self-efficacy was positively associated with performance and formed significant indirect statistical associations between each factor and the outcome. The study contributes a structural illustration of how personal and contextual factors are related to self-reported creative music teaching practice. For schools and training institutions, the findings suggest that developing teachers' confidence may be considered alongside providing skills, resources, and professional support. Replication using longitudinal, multi-source, and independently rated performance data is required before causal or intervention conclusions can be drawn.

Acknowledgments

The authors declare that no specific acknowledgments are required.

Author contributions

Not applicable.

Funding

This research received no external funding.

Data availability

No data availability statement is required.

Declarations

Conflict of interest

The authors declare that there is no conflict of interest.

Ethics approval

Not applicable.

Consent to participate

Not applicable.

Consent for publication

Not applicable.

Additional information

Received: 20 July 2026

Accepted: 10 September 2026

Published online: 8 October 2026

Publisher's Note

Wisdom Academic Press Ltd. remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

References

- [1] Bandura, A. (1997). Self-efficacy: The exercise of control. W. H. Freeman.
- [2] Brauer, R., Ormiston, J., & Beausaert, S. (2025). Creativity-fostering teacher behaviors in higher education: A transdisciplinary systematic literature review. *Review of Educational Research*, 95(5), 899–928. <https://doi.org/10.3102/00346543241258226>
- [3] Burić, I., Jakšić, K., & Balaž, B. (2024). Teacher self-efficacy and teaching quality: A three-wave longitudinal investigation. *International Journal of Psychology*, 59(6), 1317–1325. <https://doi.org/10.1002/ijop.13255>
- [4] Cayirdag, N. (2017). Creativity fostering teaching: Impact of creative self-efficacy and teacher efficacy. *Educational Sciences: Theory & Practice*, 17(6), 1959–1975. <https://doi.org/10.12738/estp.2017.6.0437>
- [5] Dogbe, C. S. K., Tweneboah, I., Basoah, P., Arkrofi, A. A., & Appiah, N. (2024). Mediating role of teacher creativity in the relationships between internal strategic communication, feedback seeking behavior and teacher performance. *Cogent Education*, 11(1), Article 2351260. <https://doi.org/10.1080/2331186X.2024.2351260>
- [6] Jiang, W., Han, B., & Cui, Y. (2025). Influence of music educators on students' involvement in learning the theory of musical art. *Acta Psychologica*, 253, Article 104722. <https://doi.org/10.1016/j.actpsy.2025.104722>
- [7] Maor, R., Paz-Baruch, N., Mevarech, Z., Grinshpan, N., Levi, R., Milman, A., Shlomo, S., & Zion, M. (2025). Teaching creatively and teaching for creativity – theory, teachers' attitudes, and creativity-based practices. *Educational Studies*, 51(5), 958–972. <https://doi.org/10.1080/03055698.2024.2371091>
- [8] Nguyen, T., Knigge, J., Sæther, M., & Oravec, L. (2025). Factors influencing music teaching among primary and early childhood education and care generalist teachers: A meta-narrative review. *Frontiers in Education*, 10, Article 1648016. <https://doi.org/10.3389/feduc.2025.1648016>
- [9] Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1–36. <https://doi.org/10.18637/jss.v048.i02>

- [10] Yeh, Y. C., Wang, C. M., Ting, Y. S., & Chiang, J. L. (2025). A visible thinking approach for preservice teacher training: Effects and mechanisms for professional development in creativity instruction. *Teaching Education*, 36(3), 241–258. <https://doi.org/10.1080/10476210.2025.2485230>
- [11] Zhou, G., & Guan, T. (2025). Patterns of engagement with professional development among in-service primary music teachers in China and their associations with teaching readiness, school identification, and job satisfaction: A latent profile analysis. *International Journal of Music Education*. Advance online publication. <https://doi.org/10.1177/02557614251338588>
- [12] Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods*, 9(4), 466–491. <https://doi.org/10.1037/1082-989X.9.4.466>
- [13] Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- [14] Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- [15] Soh, K. C. (2000). Indexing creativity fostering teacher behavior: A preliminary validation study. *Journal of Creative Behavior*, 34(2), 118–134. <https://doi.org/10.1002/j.2162-6057.2000.tb01205.x>
- [16] Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management Journal*, 45(6), 1137–1148. <https://doi.org/10.5465/3069429>
- [17] Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement*, 73(6), 913–934. <https://doi.org/10.1177/0013164413495237>

Appendix A

Complete 27-Item Questionnaire

Response options: 1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree.

Creative Music Teaching Competence

- CC1. I can design open-ended musical tasks that invite student improvisation.
- CC2. I can guide students in exploring music through varied sound materials.
- CC3. I can integrate composition, arrangement, or improvisation into regular music lessons.
- CC4. I can adapt creative music activities to students' ages and musical backgrounds.
- CC5. I can assess creative musical work without relying on a single predetermined answer.

Creative Teaching Resources and Environment

- RE1. My teaching setting provides sufficient instruments for creative music activities.
- RE2. Suitable space is available for improvisation, composition, and group sound exploration.
- RE3. I have access to appropriate technological or audio resources for creative music teaching.
- RE4. The school environment allows teachers and students to experiment with different musical ideas.

Creative Teaching Motivation and Attitude

- MA1. I am interested in trying new approaches to creative music teaching.
- MA2. I am willing to invest additional effort in preparing open-ended musical activities.
- MA3. I remain positive when creative music lessons produce unexpected outcomes.
- MA4. I consider students' diverse musical ideas valuable for learning.

Professional Development Support

- PD1. I have access to professional learning related to creative music teaching.
- PD2. I receive useful feedback on my attempts to teach music creatively.
- PD3. I have opportunities to observe or discuss creative music lessons with colleagues.
- PD4. My school or professional network supports continued development in creative music teaching.

Creative Teaching Self-Efficacy

SE1. I am confident that I can guide students through open-ended creative music activities.

SE2. I can manage uncertainty when students produce unexpected musical responses.

SE3. I can encourage students who are hesitant to improvise or compose.

SE4. I can solve instructional difficulties that arise during creative music lessons.

SE5. I can maintain effective creative music teaching even when resources are limited.

Self-Reported Teaching Performance

TP1. I regularly implement creative music activities as intended.

TP2. I effectively engage students in improvisation, composition, or sound exploration.

TP3. I adapt creative music activities successfully to different learners.

TP4. I provide constructive feedback on students' creative musical work.

TP5. Overall, I perform creative music teaching consistently and effectively.

Appendix B

Standardized Item Loadings

Item	Loading	SE	p	Residual variance
CC1	.883	.024	< .001	.221
CC2	.854	.026	< .001	.271
CC3	.881	.024	< .001	.224
CC4	.831	.030	< .001	.309
CC5	.839	.027	< .001	.296
RE1	.817	.034	< .001	.332
RE2	.769	.037	< .001	.409
RE3	.766	.039	< .001	.414
RE4	.799	.035	< .001	.361
MA1	.854	.030	< .001	.271
MA2	.812	.033	< .001	.341
MA3	.874	.028	< .001	.235
MA4	.857	.031	< .001	.266
PD1	.802	.035	< .001	.357

PD2	.750	.038	< .001	.437
PD3	.814	.034	< .001	.337
PD4	.845	.033	< .001	.286
SE1	.866	.025	< .001	.249
SE2	.895	.018	< .001	.199
SE3	.868	.023	< .001	.246
SE4	.878	.020	< .001	.228
SE5	.873	.022	< .001	.238
TP1	.899	.018	< .001	.192
TP2	.925	.017	< .001	.145
TP3	.902	.018	< .001	.187
TP4	.898	.019	< .001	.194
TP5	.892	.021	< .001	.204

Note. Loading = completely standardized factor loading. Residual variance represents the standardized residual variance of each indicator. CC = competence; RE = resources and environment; MA = motivation and attitude; PD = professional development support; SE = creative teaching self-efficacy; TP = self-reported teaching performance.