

How Curriculum Intervention Enhances Pre-Service Early Childhood Music Teachers' Teaching Self-Efficacy: A Conceptual Framework and Curriculum Design Grounded in Bandura's Self-Efficacy Theory

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Abstract

Pre-service early childhood music teachers frequently experience a pedagogical impasse characterized as being "able to play but unable to teach." This gap originates in the systemic disjunction between music-skill courses and music-pedagogy courses, which has long obscured the development of pedagogical content knowledge (PCK) and the self-efficacy that accompanies it. Drawing on Bandura's four-source theory of self-efficacy as an analytic framework, this paper delineates the construct of music teaching self-efficacy among pre-service early childhood teachers and examines its principal antecedents. It further advances a curriculum intervention logic anchored in mastery experience and orchestrated through the coordinated activation of all four efficacy sources, operationalized in a four-module curriculum scheme—Knowledge Reconstruction, Observation and Analysis, Progressive Simulation, and Authentic Practice—accompanied by a four-stage developmental model of self-efficacy. The central argument is that enhancing teaching self-efficacy depends less on expanding skill-training hours than on engineering sufficient low-risk opportunities for successful performance, reinforced by structured professional feedback and peer-based vicarious experiences, so that confidence migrates from the technical to the pedagogical domain. As a conceptual study, the proposed scheme and developmental model await empirical validation.

Keywords

Pre-service teachers; early childhood music education; teaching self-efficacy; curriculum intervention; Bandura's theory; pedagogical content knowledge (PCK).

1. Introduction

A recurring dilemma in the music courses of early childhood education programs is easily recognized by those who teach them: students may perform piano accompaniment with technical fluency, yet when prompted to "teach the children this song," they frequently become flustered, verbally disorganized, or visibly avoidant. The deficit is not one of skill but of another capacity altogether—the subjective confidence required to translate musical content into activities that young children can comprehend and engage with. This capacity is most precisely captured by the construct of music teaching self-efficacy.

Self-efficacy, introduced by Bandura [1], refers to individuals' subjective judgments of their capability to accomplish specific tasks; such judgments in turn shape both initial willingness to attempt a task and subsequent persistence under difficulty. In the teaching profession, self-efficacy has been consistently identified as a core predictor of classroom behavior and career retention [5]: teachers with high self-efficacy tend to experiment with a broader repertoire of instructional strategies, whereas those with low self-efficacy retreat to routinized practices.

Yet current curriculum systems exhibit structural weaknesses in cultivating this capacity. Music-skill courses are organized around disciplinary logic and evaluated against performance benchmarks, while music-pedagogy courses emphasize generic instructional theory and lack systematic training in translating musical knowledge into age-appropriate activities for children aged 3–6. Without effective articulation between the two, the most critical professional competence of an early childhood music teacher—the generation of PCK and the efficacy development that accompanies it—is bypassed altogether [3] [9].

Drawing on Bandura's four-source theory as an analytic framework, this paper examines the construct and antecedents of pre-service early childhood music teachers' teaching self-efficacy, identifies a structural gap in the extant literature on curriculum intervention, and advances a systematic intervention scheme to inform the reform of early childhood music teacher education. A clarification of emphasis is warranted: the central concern of this paper is not the level of musical competence pre-service teachers should attain, but the extent to which curriculum intervention can enable them to leave university genuinely believing that they are capable of teaching young children music. It is this belief, rather than technical mastery alone, that constitutes the psychological resource most likely to shape their post-entry professional trajectories and career persistence.

2. Theoretical Framework and Literature Review

2.1. Conceptualizing Music Teaching Self-Efficacy

Music self-efficacy and music teaching self-efficacy are two distinct constructs. The former refers to judgments of one's performing and singing abilities, whereas the latter refers specifically to judgments of one's capability to implement music instruction effectively and to foster young children's musical development. Recent research suggests that the introduction of digital tools can enhance general music self-efficacy without automatically transferring to teaching efficacy; skill training aimed at "being able to play" and efficacy cultivation aimed at "being able to teach" must therefore be designed independently rather than assumed to substitute for one another.

Music teaching self-efficacy is commonly conceptualized along two sub-dimensions [4] [7]: Personal Music Teaching Efficacy (PMTE), denoting the belief that one can influence young children's musical learning, and General Music Education Efficacy (GMEE), denoting the belief that music education as a whole can facilitate child development. The former is more directly responsive to curriculum intervention. Kong [6] further identifies three jointly operating antecedents of early childhood teachers' music teaching confidence—instrumental training background, teaching experience, and pedagogical skills—and demonstrates that the contribution of pedagogical skills is independent of the other two, thereby underscoring the indispensable role of purpose-designed pedagogy courses in efficacy development.

2.2. Bandura's Four Sources of Self-Efficacy

Bandura [1] [2] ranked the informational sources of self-efficacy, in descending order of weight, as mastery experience (accomplishing a task through personal effort), vicarious experience (observing similar others succeed), social persuasion (specific affirmation and professional feedback from credible sources), and physiological and affective states (the way somatic cues such as anxiety are interpreted as signals of competence). These four sources are not isolated operators; within a curriculum context, they can be systematically activated and mutually reinforced.

The efficacy value of mastery experience depends critically on task-type alignment. For pre-service teachers, the salient success is not "playing a piece of music well" but "successfully guiding young children through a music game"; the two correspond to distinct skill structures

and affective registers. The observation that technically accomplished students frequently experience efficacy collapse upon their first encounter with young children is explicable precisely because their accumulated mastery experiences have occurred in the wrong task type. The effect of vicarious experience, in turn, varies with perceived similarity between observer and model: peer demonstrations ("she shares my background and she did it, so can I") generally exert a stronger motivational effect than expert demonstrations, since expert modeling more readily triggers the discounting attribution, "of course they can, but I am different." Social persuasion likewise derives its power from quality rather than quantity. Generic praise such as "you did well" exerts limited effect; what proves genuinely consequential is professional commentary targeted at specific instructional decisions—for example, "your judgment of the middle-group children's developmental readiness in guiding the rhythm game was accurate, and this strategy was effective." Feedback of this kind enables students to internalize the meta-cognition that "my professional judgment is reliable," producing durable efficacy gains. The management of physiological arousal relies on low-risk, graduated exposure: from analyzing lesson plans, to classroom simulation, to authentic teaching, with each step adequately scaffolded before the next is initiated. First-time teaching in front of young children frequently marks a career-peak of anxiety for pre-service teachers; absent an effective buffering mechanism, elevated anxiety can initiate a self-reinforcing cycle of avoidance, inexperience, and further anxiety.

2.3. International and Domestic Research Context

Nguyen et al. [8], in a meta-narrative review synthesizing 249 peer-reviewed studies across 38 countries from 1995 to 2023, confirmed that the relationship between teacher preparation and efficacy or confidence sits at the center of the six meta-narratives shaping generalist teachers' music teaching. Nevertheless, the bulk of the existing evidence remains diagnostic—documenting inadequate musical preparation—rather than interventionist, and empirical schemes addressing how curriculum can be designed to elevate pre-service efficacy remain scarce. Williams et al. [10] reported on an eight-week Rhythm and Movement for Self-Regulation (RAMSR) program, documenting significant gains in participants' confidence to implement specific movement activities and identifying five features of effective professional learning: active engagement, access to video resource libraries, structured evidence-based programming, accessibility, and on-site coaching. These features map closely onto the four sources posited by Bandura.

Bautista et al. [3] systematically reviewed the state of music teacher preparation in the early childhood field, noting that in-service teachers value embedded, workplace-based professional development and that sustained, in-context mentor support yields efficacy gains that far exceed those of one-off workshops. This model, however, remains underdeveloped at the pre-service stage; although practical, student-led modes of music participation have been shown to enhance confidence and efficacy, systematic curriculum designs and empirical validations are still lacking. Kong [6] found that in workshops integrating the PCK framework with the pedagogical reasoning and action model, targeted gains in pedagogical skill contributed to efficacy independently of instrumental background and teaching-age group—suggesting that pre-service teachers with relatively weak musical skills can nevertheless develop robust teaching efficacy through purpose-designed pedagogy coursework. The complementary study by Kong and Xiong [7] further indicates that, in the Chinese context, pre-service kindergarten teachers' efficacy beliefs are deeply shaped by the structure of their curricular experience and that personal teaching efficacy responds more rapidly than general education efficacy to curriculum intervention. By contrast, the Chinese literature has relied primarily on cross-sectional surveys of in-service teachers, attributed low efficacy predominantly to individual

factors, and rarely framed the problem as one of structural curricular deficiency; longitudinal intervention designs at the pre-service stage remain particularly sparse.

3. A Curriculum Intervention Scheme Grounded in the Four Sources of Self-Efficacy

3.1. Design Principles

The scheme is organized around four principles. First, the mastery-experience principle: course evaluation should center on whether students can make well-grounded instructional decisions based on children's developmental characteristics. Second, the progression principle: activities should proceed from low- to high-risk and from scaffolded to gradually independent. Third, the integration principle: every instructional segment requires the simultaneous presence of content knowledge (CK, subject-matter knowledge of music), learner knowledge (LK, knowledge of young children), and pedagogical knowledge (PK, teaching-strategy knowledge); isolated practice is to be avoided. Fourth, the reflection principle: structured inquiry—"Why did I select this strategy? What was its effect? How might I improve next time?"—enables each mastery experience to be conceptualized rather than merely undergone.

3.2. The Four-Module Curriculum Scheme

Module 1, Knowledge Reconstruction (approximately 15% of course hours), seeks to dismantle the isolation among CK, LK, and PK. Its central activity is to examine a single instructional problem simultaneously from music-theoretical, developmental, and pedagogical perspectives, thereby establishing an integrative awareness framework within students' cognitive structures. The instructor's explicit affirmation of students' existing knowledge—"you already possess most of the knowledge required to become an early childhood music teacher; it has simply not yet been connected"—activates an initial sense of efficacy and furnishes the psychological foundation for the accumulation of subsequent mastery experiences.

Module 2, Observation and Analysis (approximately 20% of course hours), focuses on supplying vicarious experience. Two design features distinguish it from conventional modeling. First, effective and ineffective cases of early childhood music activities are presented in contrast, with students guided to analyze both what was accomplished and what went wrong; comparative analysis internalizes instructional decision logic more effectively than exposure to exemplary cases alone. Second, senior students who have completed practicum are invited to deliver on-site demonstrations, as their motivational effect on efficacy typically exceeds that of expert instructors. The module culminates in a collaborative redesign task, layering small-scale mastery experience onto vicarious experience.

Module 3, Progressive Simulation (approximately 40% of course hours, the core module), operates as the efficacy "production line" of the scheme. Its practice gradient proceeds through the following stages: analyzing lesson plans (judgment only, without execution); designing 5- to 8-minute activity segments; peer role-play teaching; full in-class simulation; and microteaching with video recording. Each step introduces a clear escalation in difficulty while ensuring that students succeed under adequate scaffolding—the operative principle is not "cast them out to try" but "scaffold them to succeed." Each teaching attempt is followed by a three-stage feedback sequence: self-evaluation (students first articulate what they believe they accomplished and where they fell short); peer feedback (targeted at PCK dimensions rather than performance quality); and mentor commentary (professional judgment on instructional decisions, as in "your use of body movement to guide the sense of beat reflected an accurate reading of the middle-group children, but the verbal prompt may be too complex for the younger group—what could you substitute?"). The sequencing of self-evaluation before external feedback is deliberate: it enables students to affirm themselves before receiving

external input, thereby preserving the internal locus of attribution from which self-efficacy draws its sustainability. Every imperfect attempt should be framed as evidence that "the strategy can be refined," not that "I lack ability"—this attributional framing is the activating logic of the module.

Module 4, Authentic Practice (approximately 25% of course hours), places students in authentic kindergarten settings where, under the collaborative supervision of a university instructor and a kindergarten mentor (a dual-mentor arrangement), they progress through observation, assistant teaching, and at least one instance of independently implementing a complete early childhood music activity. Prior to independent teaching, students submit a lesson plan grounded in three-dimensional PCK analysis; afterward, a structured reflection report is required. The most critical design element is not the task itself but the meaning-construction of "encountering walls." When pre-set strategies fail to engage real children or when activity pacing is unexpectedly disrupted, the absence of reflective scaffolding renders such experiences sources of efficacy damage; with structured reflective support—"What happened? Why did it happen? What should I do next time?"—the same experiences become the pivotal junctures at which self-efficacy transitions from "simulated confidence" to "practical confidence." Dual mentors should schedule dedicated post-lesson reflective conversations rather than limit themselves to outcome-based evaluation.

3.3. A Four-Stage Developmental Trajectory of Self-Efficacy

Under systematic curriculum intervention, students' self-efficacy is hypothesized to develop through four characteristic stages. In Stage 1 (awareness awakening), cognitive conflict emerges as students recognize that "being able to play ≠ being able to teach"; efficacy is not yet established, corresponding to Modules 1 and 2. In Stage 2 (initial attempt), students complete their first independent teaching segment; anxiety peaks, and efficacy registers its first notable rise, corresponding to the early portion of Module 3. In Stage 3 (integration and consolidation), CK, LK, and PK are deployed in integrated fashion and efficacy rises steadily, corresponding to the later portion of Module 3. In Stage 4 (practice examination), students face real children in authentic settings; efficacy may dip temporarily before undergoing deeper reconstruction, corresponding to Module 4. These stages are not strictly linear but spiral in progression. The temporary dip in Stage 4 does not signal intervention failure but marks a necessary transition from skill-based to teaching-based confidence; it is a regularity that curriculum design must acknowledge and support through structured meaning-construction [10].

4. Discussion

4.1. The Design Logic of "Safe Failure"

The scheme's emphasis on low-risk simulation environments reflects the internal logic of efficacy formation. Bandura [2] observed that overly easy tasks do not generate valuable mastery experience, whereas outright failure directly damages self-efficacy. The logic of "safe failure" navigates this tension: tasks must be challenging enough to render success meaningful, yet scaffolded sufficiently that imperfect attempts are attributable to "the strategy can be refined" rather than "I lack ability." The three-stage feedback sequence of self, peer, and mentor is the concrete mechanism through which internal attribution is established and self-efficacy safeguarded.

4.2. The Independent Contribution of Pedagogical Skills: Policy Implications

Kong's [6] finding that pedagogical skills contribute to music teaching confidence independently of instrumental background carries a clear institutional implication: universities need not treat the attainment of instrumental benchmarks as a precondition for efficacy cultivation. Students with weak instrumental foundations can, provided they accumulate

sufficient mastery experience in the appropriate task types, develop teaching efficacy comparable to that of their instrumentally strong peers. Efficacy development should therefore be addressed to the entire student cohort—a theoretical warrant for curriculum reform and, equally important, a viable professional pathway for the sizeable population of students whose instrumental preparation is limited.

4.3. Recommendations for Subsequent Empirical Research

For quantitative assessment, the China-contextualized music teaching efficacy scale developed by Kong and Xiong [7] is recommended as the principal instrument, administered at three time points—prior to Module 1, following Module 3, and following Module 4—so as to capture the dynamic trajectory of efficacy development, particularly the temporary dip anticipated in Module 4. For qualitative assessment, thematic coding of reflective journals is recommended as the principal method, with Bandura's four-source theory serving as an a priori coding framework to trace qualitative transitions in efficacy narratives.

5. Conclusions and Recommendations

Three principal conclusions emerge from the foregoing analysis. First, the efficacy deficit of pre-service early childhood music teachers is rooted in a structural weakness of the curriculum system: the disconnect between skill and pedagogy courses has meant that the integrative practice required for PCK generation has never been enacted systematically under adequate scaffolding—a problem largely independent of students' musical talent. Second, the key to curriculum intervention lies not in expanding skill-training hours but in engineering low-risk mastery experiences in the correct task types, reinforced by structured social persuasion and vicarious experience. Third, the temporary dip in efficacy during the authentic-practice stage is a necessary transition from skill-based to teaching-based confidence, and curriculum design must recognize and support this transition through meaning-construction.

Concrete recommendations for university curriculum design are as follows. On curriculum goals: the cultivation of music teaching self-efficacy should be written explicitly into course standards alongside skill-related objectives; in current documents, efficacy-related statements are virtually absent, leaving efficacy cultivation without institutional grounding. On assessment methods: performance-based assessments grounded in PCK dimensions—lesson-plan evaluation, microteaching evaluation—should be adopted as principal assessment modalities, with the weight of pure technical performance tests reduced accordingly; only when assessment aligns with developmental objectives will student learning behavior meaningfully reorient toward efficacy development. On instructional modeling: instructors should render the "transformation" process explicit in class, translating a music-theoretical concept into a child-appropriate activity in students' presence, so that students observe not only the outcome but the decision-making behind it—an active supply of vicarious experience and, simultaneously, a form of metacognitive modeling. On practicum arrangement: early childhood practicum should be advanced earlier in the program, and independent teaching of at least one complete early childhood music activity should be established as a compulsory assessment, supported by structured pre- and post-lesson reflection rather than an observation-only format. This paper constitutes a conceptual study; the proposed scheme and developmental model await empirical validation, which constitutes its fundamental limitation. Subsequent research should implement the proposed scheme in authentic course settings and employ a mixed-methods design—quantitative pre-post measurement combined with qualitative thematic coding of reflective journals—for validation, with particular attention to the differential contributions of each module to the two sub-dimensions of efficacy (PMTE and GMEE), to individual differences in efficacy trajectories across students with varying instrumental backgrounds, and to the mechanisms and moderating factors underlying the Module 4 efficacy

dip. The four-stage developmental model proposed here is grounded in theoretical deduction rather than empirical induction; its stage delineation and boundary conditions await validation through longitudinal tracking studies.

References

- [1] Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215.
- [2] Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman and Company.
- [3] Bautista, A., Yeung, J., McLaren, L. M., & Ilari, B. (2022). Music in early childhood teacher education: Raising awareness of a worrisome reality and proposing strategies to move forward. *Arts Education Policy Review*, 125(3), 139–149.
- [4] Gibson, S., & Dembo, M. H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology*, 76(4), 569–582.
- [5] Holzberger, D., Philipp, A., & Kunter, M. (2013). How teachers' self-efficacy is related to instructional quality: A longitudinal analysis. *Journal of Educational Psychology*, 105(3), 774–786.
- [6] Kong, S. H. (2025). Music education training for kindergarten teachers: A workshop integrating Shulman's pedagogical content knowledge and pedagogical reasoning and action model. *Journal of Early Childhood Teacher Education*, 46(1), 85–102.
- [7] Kong, S. H., & Xiong, X. (2025). Pre-service kindergarten teachers' confidence and beliefs in music education: A study in the Chinese context. *Education Sciences*, 15(6), 772.
- [8] Nguyen, T., Knigge, J., Saether, 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, 1648016.
- [9] Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4–14.
- [10] Williams, K. E., Savage, S., Bentley, L. A., Eager, R., White, S. L. J., & Nielson, C. (2024). Developing early childhood teacher confidence to implement classroom music and movement activities: Key professional learning features. *Early Childhood Education Journal*, 52, 1815–1827.