Improvisation in music education: empirical evidence, classroom practice, and teacher preparation

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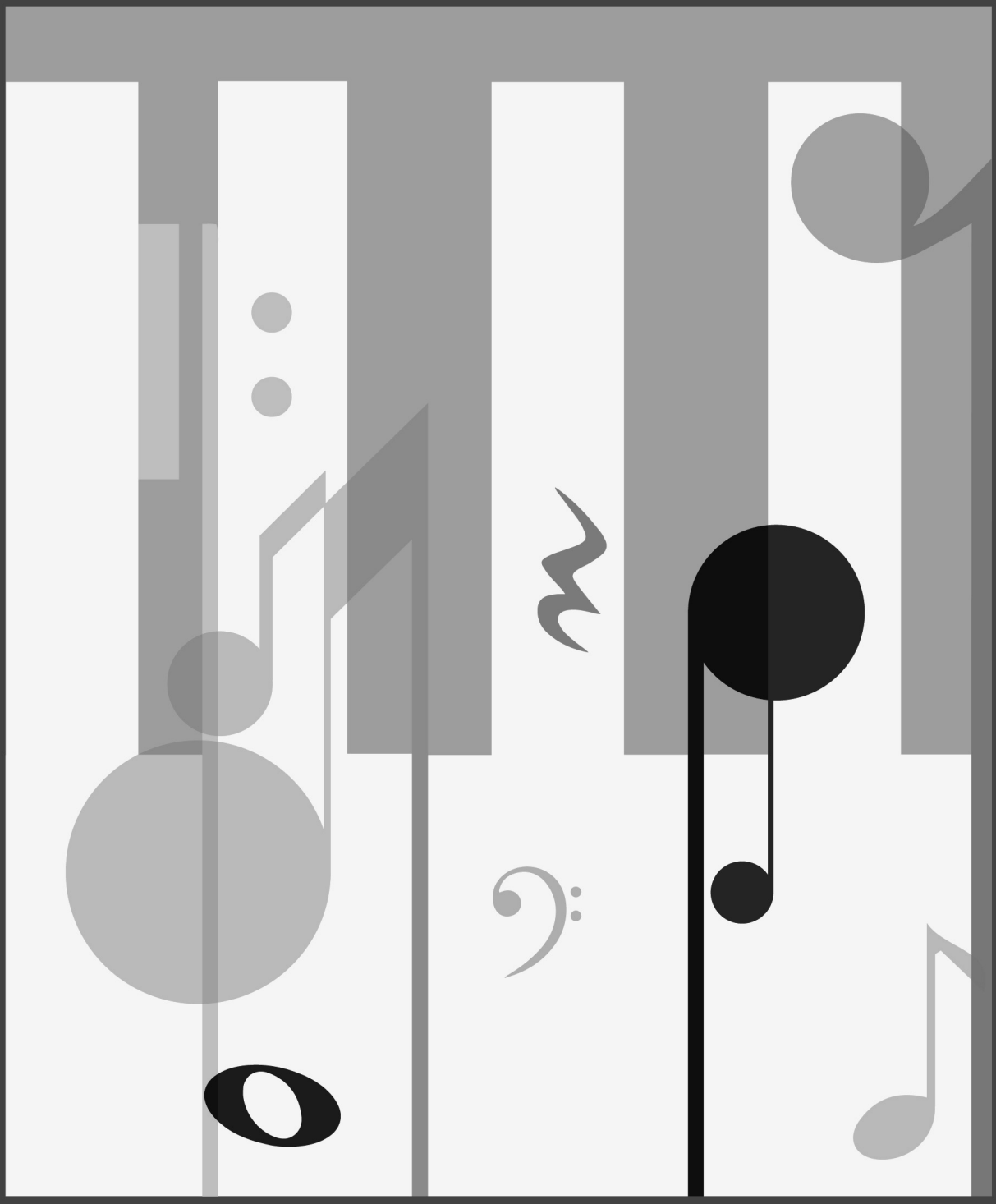

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Summary

Chapter 1. General Introduction

Creative activities are an important part of music education. They provide students with opportunities to express themselves and develop their own musical concepts. As one of the core creative practices of music education, improvisation not only enhances creativity, musical understanding, and self-confidence but also promotes exploration, cooperation, the enjoyment of music, and the experience of flow. Given its numerous benefits, improvisation has been widely advocated by researchers and music educators and is included in many national curriculum standards. However, improvisation is often absent in actual classroom teaching. This dissertation aims to gain comprehensive insight into this field through empirical evidence, classroom practice, teachers' preparation, and their readiness and willingness to implement improvisation.

Chapter 2. Mapping the evidence: a systematic review of improvisation

In this chapter, the systematic literature review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2009; Page et al., 2021). The review had research questions:

(1) What improvisation activities are applied in music education?

(2) What are the learning outcomes of improvisation activities in music education?

In total, 63 peer-reviewed articles published between 2015 and 2025 were included for further analysis. Using an inductive approach to classify activity types and a deductive approach to code learning outcomes, this review develops a structured classification of the classroom.

Classroom improvisation activities consist of five components: (1) improvisation forms and techniques, (2) tools and medium-specific improvisation, (3) reflection on learning and creating, (4) interdisciplinary improvisation, and (5) improvisation games. The four domains of learning outcomes are affective, behavioral, cognitive, and social domains. The four domains of learning outcomes are affective, behavioral, cognitive, and social. These findings might encourage educators and curriculum designers to broaden their improvisation practice and link it to intended learning outcomes, thereby improving the relevance and quality of their music education practice.

Chapter 3. Exploring classroom practice: current situation and implementation challenges

The third chapter examines how improvisation is implemented and evaluated by primary music classrooms. This chapter focuses on teachers' practical practices and understandings in specific teaching situations by answering:

(1) How do teachers implement improvisation activities in class?

(2) How do teachers evaluate these improvisation activities in class?

This chapter adopted a qualitative research design that combined semi-structured interviews, classroom observation, and field notes with eight Dutch primary music teachers. The result showed that improvisation is not absent from primary school music classes. On the contrary, teachers generally organize different forms of improvisation, especially in vocal, instrumental, rhythmic, and movement improvisation. Improvisation is often incorporated into teaching, close to stories and children's experiences, with clear boundaries and task structures. In other words, improvisation in the classroom is more of a kind of creative activity that can be guided and supported, rather than free play away from the teaching goal. The findings further showed that the music teacher participants in this study were more likely to consider improvisation a tool for students to experience, rather than a goal.

Teachers generally believed that a supportive and safe classroom atmosphere, a clear activity structure, and a student-centered organization are important prerequisites for effective improvisation. Teachers evaluated students' improvisation products by encouraging self-reflection, organizing peer feedback, or compliments to younger students. Recognized benefits include engagement, self-confidence, musical expression, and collaboration. This chapter also reveals challenges when including improvisation, such as classroom discipline, limited repertoire, time, instruments, and classroom space.

Through triangulation of different data sources, this chapter comprehensively shows the current situation of improvisation in primary music classrooms, as well as identifies teachers' implementation characteristics and the practical challenges of improvisation in primary school music education.

Chapter 4. Pre-service teacher preparation: attitude and self-efficacy toward improvisation

This chapter explores pre-service music teachers' readiness to implement improvisation activities. Teachers face the challenge of value improvisation but feel less confident in it. This study focuses on the gap between valuing and feeling confident about improvisation. The research developed a conceptual model examining how attitude toward studying improvisation (AS), attitude toward teaching improvisation (AT), and attitude toward including improvisation (AI) function as predicting variables, with self-efficacy for improvisation (SEI) as a mediating construct, and self-efficacy for teaching improvisation (SETI) as the outcome variable.

In total, 123 pre-service music teachers completed the online questionnaire, and 10 follow-up semi-structured interviews. Participants were music education students at 10 conservatories and

universities of applied science in the Netherlands. This study used One-way ANOVA, t-tests, and Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze the data.

Only the gender difference was significant in the group comparison. Male students reported higher AS, SEI, and SETI. In the structural model, both AS and AT significantly predicted SEI, whereas only AT predicted self-efficacy for teaching improvisation. SEI served as a mediator between AT and SETI. This showed that pre-service teachers may have different starting points and development paths when facing improvisation. AT is more likely to promote their confidence in their own improvisation ability first. In contrast, the attitude toward teaching orientation is more directly related to whether they implement improvisation in the classroom.

The key was building confidence in "I can do it" and transferring "I can teach it". While self-efficacy for improvisation served as a basis for self-efficacy for teaching improvisation, pedagogical content knowledge connected to improvisation is necessary to convert personal improvisational skills into effective teaching. Teacher education programs may include peer learning opportunities, progressive mastery experiences, and encouraging environments that embrace mistakes.

Chapter 5. Multiple pathways of intention formation: comparing in-service and pre-service teachers

This chapter employed a mixed methods design to explore intention formation and compare differences between pre-service and in-service music teachers. Based on the Integrative Model of Behavior Prediction, this chapter aimed to answer the following research questions:

(1) How do emotions influence teachers' intentions to guide improvisation activities in teaching through attitude, self-efficacy, teacher-efficacy, motivations, and subjective norms?
(2) To what extent do attitude, self-efficacy, teacher-efficacy, motivation, and subjective norm directly predict teachers' intentions to implement improvisation activities in teaching?
(3) Is there a significant difference between the pathways of pre-service and in-service music teachers?

The questionnaire was completed by 605 Chinese music teachers (227 in-service and 378 pre-service teachers). Twelve individuals participated in the follow-up interview. Multigroup structural equation modeling (MG-SEM) showed that joy was the most stable predictor and the most closely related to high motivation, a positive attitude, and a strong sense of efficacy in both groups, underscoring its key role. Anxiety mainly affected teachers' confidence, while anger was more related to amotivation and diminished intrinsic motivation among in-service teachers. Subjective norms were the strongest predictors of intention for both teacher groups, indicating that institutional requirements and expectations from others (e.g., school leaders and peers) effectively promote teachers' intention to implement improvisation activities. Improvisation was more likely to occur in

visible settings, such as teaching competitions (i.e., formal competitive teaching events) and public lessons (i.e., lessons taught for observation and demonstration). In some cases, it was like a required component rather than a stable practice in daily classroom teaching. Time constraints, workload, and limited improvisation experience continued to limit the routine implementation of improvisation activities.

Chapter 6. General discussion

Improvisation is present across diverse formats, including technology, tools, reflection, and game design, and yields affective, behavioral, cognitive, and social learning outcomes. However, classroom practice is more complex. Improvisation was not completely absent in the classroom; it appeared in more structural and fragmented formats. A safe atmosphere is the most pre-condition for successful scaffold improvisation. Including improvisation in teaching required more than endorsement, but also on teachers' readiness and willingness. Readiness is based on self-efficacy, formed through attitudes toward studying and teaching improvisation, and on teaching confidence in designing, supporting, and scaffolding improvisation activities. The key is the transformation from "I can improvise" to "I can teach improvisation". Teachers' emotions, motivations, subjective norms, attitudes, and efficacy beliefs also played critical roles. Subjective norms were the most direct predictor of implementation intention, while joy effectively promoted motivation, attitudes, and efficacy beliefs.

The results of the studies described in this dissertation also have some limitations. The empirical data mainly came from the Netherlands and China, limiting generalizability. Self-selection bias may also be present. Chapters 4 and 5 adopted a cross-sectional design, which made it difficult to capture the dynamic processes of teachers' readiness and implementation intentions changing over time. In addition, during interviews, the data may have been affected by social expectations. Finally, the examination of teachers' emotions in the fifth chapter focuses on joy, anxiety, and anger and does not fully present the complexity of teachers' emotional experience or its sources.

Based on the results, some suggestions for music education practice are provided at the end of this dissertation. For music teachers, start with short activities, such as call-and-response, simple rhythm, and movement improvisation. Tasks with clear boundaries and links to existing teaching content can help reduce pressure. For teacher educators and curriculum designers, adding practical opportunities, such as peer teaching, reflection, and feedback, alongside emotional support for facing uncertainty. For school leaders and policymakers, providing classroom space, instruments, and opportunities for continuous professional development is essential.