



## RESEARCH ARTICLE

# ASSESSMENT IN DIGITAL SELF-EFFICACY OF MUSIC EDUCATION TEACHERS

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### ABSTRACT

Digital self-efficacy among music education teachers is a critical aspect of adapting to the evolving landscape of educational technology. This study addresses the existing research gap by delving into the nuances of digital self-efficacy within the unique context of Chinese music education. Recognizing the significance of this exploration, the study aims to contribute valuable insights to the growing body of knowledge in technology integration in music education. The primary objectives of the study are to assess the digital self-efficacy of Chinese music education teachers and to examine potential variations based on demographic and professional factors. Employing a descriptive quantitative approach, the research involves 209 music teachers from 5 private schools in China, with a focus on those with 5 or more years of experience in teaching music. Results indicate a generally positive digital self-efficacy among participants, with specific strengths in skills confidence, lesson preparation, and classroom management. Gender emerged as a significant factor influencing self-efficacy, highlighting the need for gender-specific professional development strategies. This study contributes novel insights into the digital self-efficacy landscape of Chinese music education teachers, shedding light on specific areas of strength and potential improvement. The findings underscore the importance of tailored professional development initiatives, emphasizing gender-specific considerations. A key recommendation is the implementation of targeted training programs to enhance digital self-efficacy, fostering a more confident and adaptable music education community.

## INTRODUCTION

In recent years, the integration of digital technologies in educational settings has become increasingly prevalent, shaping the landscape of teaching and learning across various disciplines. Music education, as a specialized domain, has not been exempt from this transformative wave. With the advent of digital tools and platforms, music teachers are presented with new opportunities to enhance pedagogical practices, engage students in innovative ways, and broaden the scope of musical experiences. As we navigate this evolving educational landscape, it becomes imperative to understand the digital self-efficacy of music education teachers – their perceived confidence and competence in utilizing digital technologies within the unique context of music instruction. Within the broader framework of digital self-efficacy, this research homes in on the specific challenges and capabilities of music education teachers in navigating the digital realm. While the integration of technology holds promise for enriching music education, the extent to which music teachers feel empowered and proficient in utilizing these tools remains a critical factor. This study aims to delve into the specific competencies and confidence levels of music educators, examining their digital proficiency in areas such as music software utilization, online resource integration, and the creation of digital teaching materials. By narrowing our focus, we seek to unravel the nuances of digital self-efficacy in the unique context of music education, acknowledging both the potential benefits and potential hurdles faced by educators in this domain. Despite the growing recognition of the importance of digital competence in music education, a perceived gap exists in the literature regarding the

nuanced exploration of digital self-efficacy among music education teachers. While some studies have touched upon broader aspects of technology integration in education, few have delved deeply into the specific challenges and strengths that music educators encounter within the digital landscape. This research endeavors to bridge this gap by providing a comprehensive examination of the digital self-efficacy of music education teachers, offering insights that can inform targeted professional development initiatives and contribute to the ongoing discourse on technology integration in music education.

## LITERATURE REVIEW

This study was grounded in the self-efficacy theory, providing a foundation for exploring the challenges of training generalists to teach music within the constraints of a one-semester university methods course. The findings from this research suggest that the application of self-efficacy theory could serve as a valuable framework for shaping future investigations in the field of music teacher education. The complexities associated with preparing generalists for music instruction, particularly in a condensed timeframe, highlight the potential of self-efficacy theory to offer insights into effective training methodologies. The utilization of self-efficacy theory as a guiding framework for future research in music teacher education holds the promise of yielding more meaningful and targeted conclusions. By focusing on individuals' beliefs in their ability to successfully teach music, researchers can delve deeper into the specific factors, strategies, and interventions that contribute to the enhancement of self-efficacy among generalist teachers. This approach may provide a

nuanced understanding of the dynamics involved in training generalists to teach music, paving the way for more informed and effective educational practices. Vannatta-Hall (2010) conducted a study that adopted an approach emphasizing the origins of self-efficacy, providing implications and strategies to support music teacher educators in designing and delivering a music methods course for pre-service generalists. The research findings suggest the feasibility of enhancing the confidence and proficiency of pre-service early childhood teachers in music instruction within a single semester. The study underscores the crucial connection between the development of both the will, characterized by self-efficacy, and the skill, represented by competence, in teaching music. The outcomes highlight the significance of pre-service generalists cultivating the necessary competencies to offer meaningful music experiences to their future students. Overall, the research emphasizes the pivotal role of self-efficacy in shaping teaching practices, as teachers with elevated self-efficacy levels are more inclined to effectively manage classrooms, exhibit superior instructional quality, employ differentiated instruction and constructivism, design challenging lessons, utilize methods fostering student autonomy, and maintain student engagement. (Holzberger *et al.*, 2013; Suprayogi *et al.*, 2017; Chao *et al.*, 2017; Miller *et al.*, 2017). The self-efficacy beliefs of educators can be enhanced through practical experience and increased exposure to teaching activities (Arsal, 2014), as well as through training and ongoing professional development opportunities (Trauth-Nare, 2015). In the context of teaching, the development of self-efficacy involves an individual's assessment of their teaching abilities to perform a task and their perception of the necessary actions for successful task execution (Garvis, 2013, p. 86). Teachers who are confident in their ability to perform a task are more likely to actively engage in it, whereas those lacking confidence may avoid the task or approach it with less effort (Bandura *et al.*, 1999). The cultivation of high self-efficacy in teaching requires dedication, perseverance, enthusiasm, and the ability to adapt teaching practices to achieve desired outcomes (Skaalvik & Skaalvik, 2007). In the realm of music teaching self-efficacy, this might involve aspects such as a well-structured curriculum, an increased appreciation for the importance of music, or sustained professional development initiatives (Garvis, 2013). Individuals with strong self-efficacy beliefs in the teaching profession are confident in their ability to exhibit the necessary behaviors for effective teaching. They demonstrate competence in selecting and applying appropriate teaching methods that contribute to the success of students (Akar, 2011). Regarding teachers' professional self-efficacy, it is closely linked to various aspects, including classroom management skills, subject area knowledge, the capacity to choose effective methods and techniques, proficiency in utilizing instructional technologies, student success, allocated time for teaching, effort invested in students' success, and the ability to motivate students (Corry & Stella, 2018; Kaleli, 2020).

In Vries' (2017) study on self-efficacy and music teaching, the findings underscore the essential support that teachers require from school administrators, access to adequate resources, and dedicated time for music instruction. The study emphasizes the importance of teachers having opportunities to observe successful music teaching, engage in discussions with expert teachers, and access relevant professional development. Notably, informal networks like Facebook groups emerge as potential platforms for novice music teachers to interact, support each other, and benefit from the expertise of more seasoned colleagues, highlighting a promising area for future research. Additionally, investigating how generalist teachers can collaborate with music specialists to enhance their self-efficacy in music teaching presents another avenue for exploration. In shaping music education curricula, educators are encouraged to provide opportunities for teacher trainees to develop not only their musical skills but also their motivation to teach music. A well-structured curriculum should include a balance of music instruction and musical encounters, teaching strategies that actively involve students in musical participation, competencies encompassing both the practice and pedagogy of music, and practicum settings that offer hands-on experience in teaching music to children. The integration of these components aims to contribute to the elevation of students' perceived

self-efficacy in the realm of music education. This holistic approach aligns with the broader goal of nurturing effective and motivated music educators.

## METHODS

The research employed a descriptive approach to elucidate the Digital Self-Efficacy status among Chinese Music Education teachers, utilizing a quantitative method for data collection and statistical analysis. The study focused on High school teachers with at least five years of experience in teaching Music, specifically those licensed in their field. The aim was to achieve 100% retrieval from a sample size calculated using Raosoft online sample size calculator, based on a 5% margin of error and a 95% confidence level. The data gathering instrument, a standardized yet modified questionnaire, included demographic details and a section on digital self-efficacy, utilizing an eight-item instrument adapted from Mlambo *et al* (2020) with a Cronbach Alpha Coefficient of 0.906. The researcher secured permissions from school heads, emphasizing respondent confidentiality. The ethical considerations involved obtaining informed consent, allowing a two-month reflection period for participants, and ensuring confidentiality and anonymity of results. Data analysis employed frequency and percentage distribution for demographic profiles, weighted mean and ranking for digital self-efficacy identification, and analysis of variance to test differences among music education teachers based on profile variables. The researcher prioritized privacy, providing participants the option to withdraw at any time, and no personally identifying information was disclosed in the research's final output or subsequent communications.

## RESULTS AND DISCUSSION

Table 1 presents the profile of the music teachers in terms of age, gender, highest educational attainment, number of years in teaching music, most beneficial to students and music technologies used in the music course. The profile of the respondents provides valuable insights into the characteristics of Chinese Music Education teachers participating in the study. A significant majority of the respondents (78.90%) are 29 years old or below, indicating a relatively young demographic within the teaching cohort. Gender distribution is nearly balanced, with 48.30% male and 51.70% female participants. Educational attainment varies, with the majority holding Bachelor's degrees (75.10%), while an equal number possess Master's (12.40%) and Doctoral degrees (12.40%). In terms of teaching experience, the majority (65.10%) have been teaching music for 5-10 years, suggesting a blend of experienced and relatively newer educators. The survey revealed diverse digital tools deemed most beneficial to students in music education. Notably, 36.80% of respondents consider headphones as the most advantageous, emphasizing the significance of individualized auditory experiences. Other tools, such as tuning devices (12.90%), electronic organs (12.00%), and metronomes (9.10%), also play crucial roles in enhancing students' musical learning. The varied preferences showcase a dynamic approach to incorporating technology, tailoring teaching methods to students' needs and the specific requirements of music instruction. The music technologies used in the music course highlight a mix of software and platforms. Finale Smart Board (27.80%) emerges as a popular choice for instructional purposes, emphasizing the integration of visual aids in teaching music theory and composition. YouTube (14.80%), Spotify (19.60%), and Apple Music (20.10%) represent widely used platforms for music appreciation and exploration. This eclectic mix of technologies showcases a blended approach to music education, combining traditional methods with contemporary digital resources. The demographic profile suggests a need for targeted professional development strategies that cater to the diverse backgrounds and experience levels of music education teachers. Understanding the preferences for specific digital tools provides valuable insights for curriculum design and resource allocation. The mix of traditional and digital technologies underscores the importance of a balanced and

**Table 1. Profile of the Respondents**

Profile		Frequency	Percentage
Age	50 yo and above	22	10.50
	40-49 yo	11	5.30
	30-39 yo	11	5.30
	29 yo and below	165	78.90
Gender	Male	101	48.30
	Female	108	51.70
Highest Educational Attainment	Bachelors Degree	157	75.10
	Master's Degree	26	12.40
	Doctoral Degree	26	12.40
Number of Years Teaching Music	5-10 years	136	65.10
	11-15 years	46	22.00
	more than 15 years	27	12.90
Most Beneficial to Students	Headphone	77	36.80
	Tuning Device	27	12.90
	Electronic Organ	25	12.00
	Metronome	19	9.10
	Microphone	13	6.20
	Recorder	5	2.40
	Bluetooth Speaker	10	4.80
	Mixer	3	1.40
	Amphitheater	13	6.20
	Effect Processor	8	3.80
	Synthesizer 1 1.3	9	4.30
Music Technologies used in the Music Course	Finale Smart Board	58	27.80
	You Tube	31	14.80
	Spotify	41	19.60
	Apple Music	42	20.10
	Google Play Music 5 + 1	18	8.60
	Sound System	19	9.10

**Table 2. Assessment in Digital Self-Efficacy**

Digital Self-Efficacy	WM	VI	Rank
1 I feel confident that I have the necessary skills to use instructional technology in teaching music.	3.17	Agree	2
2 I feel confident that I can help student learners with instructional technology.	3.16	Agree	4.5
3 It is easy for me to find instructional technologies that are relevant to my teaching Music class	3.09	Agree	8
4 I can design technology-based classroom activities in a way that my learners can learn by themselves under my guidance.	3.16	Agree	6
5 I can easily prepare lesson plans in which I am required to use instructional technology.	3.17	Agree	2
6 I can easily teach classes in which I am required to use instructional technology.	3.14	Agree	7
7 I can learn to use computers for my teaching and learning process in my Music class	3.17	Agree	2
8 I can effectively manage my Music classroom when learners are using computers.	3.16	Agree	4.5
Composite Mean	3.15	Agree	

Legend: 3.50 – 4.00 – Strongly Agree; 2.50 – 3.49 – Agree; 1.50 – 2.49 – Disagree; 1.00 – 1.49 – Strongly Disagree

**Table 3. Differences in Assessment in Digital Self-Efficacy of Music Education Teachers when grouped to Profile Variables**

Profile	F-value	p-value	Interpretation
Age	1.803	0.148	Not Significant
Gender	8.899	0.003	Significant
Highest Educational Attainment	0.133	0.876	Not Significant
Number of Years Teaching Music	1.131	0.325	Not Significant
Most Beneficial to Students	1.079	0.380	Not Significant
Music Technologies used in the Music Course	1.294	0.268	Not Significant

Legend: Significant at p-value < 0.05;

adaptable approach to music education. Further research could explore the correlation between digital self-efficacy and teaching effectiveness, providing a deeper understanding of how teachers' comfort with technology influences student outcomes. Additionally, investigating the barriers and facilitators to the adoption of specific digital tools could offer practical recommendations for enhancing digital self-efficacy among music educators. The assessment of digital self-efficacy among Chinese Music Education teachers provides valuable insights into their perceived confidence and competence in utilizing instructional technology. The respondents generally express a positive stance towards their digital capabilities, as indicated by the overall composite mean of 3.15, falling within the "Agree" range on the Likert scale. This suggests a moderate to high level of self-efficacy among the participants. The respondents affirm a strong sense of confidence in their skills related to instructional technology. Notably, statements such as "I feel confident that I have the necessary skills to use instructional technology in teaching music" (WM: 3.17) and "I can

easily teach classes in which I am required to use instructional technology" (WM: 3.14) reflect a positive self-perception of competence. The teachers also express confidence in their ability to support student learners with instructional technology. While the statement "I feel confident that I can help student learners with instructional technology" (WM: 3.16) falls within the "Agree" range, its ranking suggests a slightly lower level of confidence compared to other dimensions. The respondents acknowledge ease in finding instructional technologies relevant to teaching music (WM: 3.09) and in designing technology-based classroom activities (WM: 3.16). This indicates a positive attitude towards incorporating technology into the teaching and learning process. Statements related to lesson planning and classroom management with technology receive high rankings, with "I can easily prepare lesson plans in which I am required to use instructional technology" (WM: 3.17) and "I can effectively manage my Music classroom when learners are using computers" (WM: 3.16) both falling within the "Agree" range.

The positive self-efficacy levels suggest a strong foundation for integrating instructional technology in music education. However, identifying areas with slightly lower confidence, such as supporting student learners, warrants attention. Professional development initiatives focused on collaborative learning and peer support could enhance teachers' confidence in assisting students with technology. Additionally, ongoing training programs that emphasize finding relevant instructional technologies and designing effective technology-based activities can further strengthen teachers' digital self-efficacy. Recognizing and building upon existing strengths while addressing specific areas of concern will contribute to a more robust and confident community of music education teachers adept in instructional technology integration. The analysis reveals that differences in digital self-efficacy among music education teachers based on age are not statistically significant (F-value: 1.803, p-value: 0.148). This suggests that regardless of age, teachers generally share similar levels of confidence in their digital skills. However, it is crucial to note that while not statistically significant, a certain degree of variance exists, indicating a potential area for exploration in future research. The gender-based differences in digital self-efficacy are found to be significant (F-value: 8.899, p-value: 0.003). This implies that there are discernible variations in how male and female music education teachers perceive and express confidence in their digital skills. Further investigation into these gender-specific differences can provide valuable insights for designing targeted interventions or professional development programs that cater to the unique needs and challenges of each gender.

The analysis shows that the differences in digital self-efficacy based on the highest educational attainment of teachers are not statistically significant (F-value: 0.133, p-value: 0.876). This suggests that teachers with different academic qualifications, whether holding bachelor's, master's, or doctoral degrees, exhibit similar levels of confidence in their digital capabilities. The number of years teaching music does not significantly influence digital self-efficacy (F-value: 1.131, p-value: 0.325). This implies that both novice and experienced music education teachers demonstrate comparable levels of confidence in their ability to integrate instructional technology into their teaching practices. The type of digital tools considered most beneficial to students does not result in statistically significant differences in digital self-efficacy (F-value: 1.079, p-value: 0.380). This indicates that regardless of the preferred technology, teachers maintain a consistent level of confidence in their digital skills. Differences in digital self-efficacy based on the specific technologies used in the music course are not statistically significant (F-value: 1.294, p-value: 0.268). This suggests that the choice of technology tools employed in the classroom does not substantially impact teachers' perceived confidence in their digital abilities. The identified significant difference based on gender calls for a nuanced approach in professional development initiatives. Understanding the specific challenges faced by male and female music education teachers can help tailor training programs to address gender-specific needs. Additionally, while age, educational attainment, years of teaching, and technology preferences do not show significant differences, ongoing support and training opportunities should be provided to ensure all teachers, regardless of these factors, stay updated and confident in utilizing instructional technology effectively. Overall, the findings emphasize the importance of recognizing and addressing diverse needs within the music education community to enhance digital self-efficacy.

## CONCLUSIONS

Most of the respondents are 29 years old and below, female, obtained bachelor's degree and teaching for 5 to 10 years. In addition, the most beneficial to students is using headphone and the music technology used in the course is final smart board. Music teachers' perceived self-efficacy for technology integration was a moderate on feel confident that they have the necessary skills to use instructional technology in teaching music, they can easily prepare lesson plans in which they are required to use instructional technology and they can learn to use

computers for their teaching and learning process in Music class. It was found that male music teachers' digital self-efficacy on music education was significantly higher.

## RECOMMENDATIONS

Music teachers Educators may continue to enrich and to enhance their teaching ability, so that they can constantly adapt to the requirements raised by changing educational developments, thereby satisfying the needs of the clients of teaching. To increase student interest and enhance learning effectiveness, the teaching methods may be innovative to broaden the students' thinking space as much as possible. The factors underlying the music teachers' inadequacy in technology can be investigated with qualitative research methods. It is thought that with the widespread use of online environments for teaching purposes, teachers' competencies of technology integration may change. Future researchers may conduct similar study but focusing other variables like challenges encountered.

## REFERENCES

- Arsal, Z. 2014. Microteaching and pre-service teachers' sense of self-efficacy in teaching. *European Journal of Teacher Education*, 37(4), 453-464.
- Bandura, A., Freeman, W. H., & Lightsey, R. 1999. Self-efficacy: The exercise of control.
- Chao, C. N. G., Sze, W., Chow, E., Forlin, C. & Ho, F. C. 2017. Improving teachers' self-efficacy in applying teaching and learning strategies and classroom management to students with special education needs in Hong Kong. *Teaching and Teacher Education*, 66, 360-369.
- Corry, M. & Stella, J. 2018. Teacher self-efficacy in online education: A review of the literature.
- De Vries, P. 2017. Self-efficacy and music teaching: Five narratives. *International Journal of Education & the Arts*, 18(4).
- Garvis, S. 2013. Beginning generalist teacher self-efficacy for music compared with maths and English. *British Journal of Music Education*, 30(1), 85-101.
- 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.
- Kaleli, Y. S. (2020). Investigation of the Relationship between Pre-Service Music Teachers' Attitudes towards Teaching Profession and Their Self-Efficacy Beliefs. *International Journal of Research in Education and Science*, 6(4), 580-587.
- Miller, A. D., Ramirez, E. M. & Murdock, T. B. 2017. The influence of teachers' self-efficacy on perceptions: Perceived teacher competence and respect and student effort and achievement. *Teaching and Teacher Education*, 64, 260-269.
- Mlambo, S., Rambe, P. & Schlebusch, L. 2020. Effects of Gauteng province's educators' ICT self-efficacy on their pedagogical use of ICTS in classrooms. *Heliyon*, 6(4).
- Skaalvik, E. M. & Skaalvik, S. 2007. Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of educational psychology*, 99(3), 611.
- Suprayogi, M. N., Valcke, M., & Godwin, R. 2017. Teachers and their implementation of differentiated instruction in the classroom. *Teaching and teacher education*, 67, 291-301.
- Trauth-Nare, A. 2015. Influence of an intensive, field-based life science course on preservice teachers' self-efficacy for environmental science teaching. *Journal of Science Teacher Education*, 26, 497-519.
- Vannatta-Hall, J. E. 2010. *Music education in early childhood teacher education: The impact of a music methods course on pre-service teachers' perceived confidence and competence to teach music*. University of Illinois at Urbana-Champaign.