The Impact of Previous Knowledge and Art Exposure on Self-Efficacy in Art Education: A Study of Pre-Service Teacher Trainees

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Abstract

This research investigated the effect of art knowledge and art exposure of pre-service teacher trainees on their self-efficacy in teaching and integrating art education in Assam, India, with 250 participants at District Institutes of Elementary Teachers' Training (DIETs). Arts knowledge correlates positively with increased self-efficacy, with art exposure also positively influencing self-efficacy. Significantly, art knowledge emerges as the more accurate predictor of self-efficacy. Implications for teacher education include prioritizing comprehensive art education with hands-on experiences and interdisciplinary strategies, in light of India's National Education Policy (NEP) 2020 and the National Curriculum Framework for School Education (NCFSE) 2023, thereby advancing art education for educators and students

Keywords: *Art education, pre-service teacher training, self-efficacy, arts integration, previous knowledge, art exposure, NEP 2020*

Introduction

Art education is crucial for fostering creativity, imagination, and self-expression of students, thereby contributing to their overall development. Various educational policies and frameworks around the globe have acknowledged the importance of art in education. Within the Indian context, previous policies on education, namely the National Policy on Education, 1986, and its Programme of Action, 1992, recognized the importance of art in fostering the aesthetic and cognitive growth of students (MHRD, 1992). With the commencement of NEP 2020, however, there is a renewed emphasis on Art Education, with the aim of integrating art into all levels of school education in a more comprehensive and inclusive manner. As per the objectives specified in NEP 2020, the educational landscape in India is set to go through significant transformations, with a particular focus on the enhancement of art education. To improve the effective implementation of these changes, the National Curriculum Framework for School Education (NCFSE), 2023 has been carefully developed (NCERT, 2023).

Notably, NCFSE 2023 emphasizes the utmost significance of the arts as a fundamental component of the academic curriculum. This entails the seamless integration of the arts into pedagogical methodologies across diverse academic disciplines, in addition to the teaching and learning of the arts as a separate subject. Schools are responsible for ensuring that arts-integrated learning becomes an integral component of the instructional approach across all subjects, with equal emphasis placed on cultivating artistic proficiency.

Given the elevated importance accorded to art education and its inclusion in NEP 2020 and its supplementary document, NCFSE 2023, it is essential for educators and aspiring

teachers to have a thorough comprehension of this field. In light of this imperative, the present research, which investigates the influence of prior knowledge and exposure to art on the self-efficacy (Bandura, 1977) of pre-service teacher trainees in teaching and integrating art education, aligns perfectly with the stated goals of NEP 2020. In an effort to improve art education in India, this study seeks to identify ways in which pre-service teacher trainees' self-efficacy beliefs can be fostered and strengthened. The findings will inform teacher preparation programs and support mechanisms to enhance self-efficacy among future art educators, thereby fostering creativity, imagination, and artistic expression among students under the broader objectives of NEP 2020.

Review of Literature

The concept of self-efficacy (Bandura, 1977) was first introduced to describe an individual's belief in their ability to effectively execute particular tasks and accomplish desired results (Bandura, 1977, 1997). In the field of education, self-efficacy - stated as an individual's belief in their ability to perform tasks that achieve desired outcomes - is particularly crucial in the teaching profession (Zivlak & Stojanac, 2019). According to a study conducted by Orakcı et al. (2023), educators who possess a high level of self-efficacy demonstrate increased dedication to their professional responsibilities and positively affect students' academic outcomes. Therefore, recognizing the importance of self-efficacy in the education sector is essential, and exploration of methods that are designed to foster its development among teachers is crucial (Orakcı et al., 2023).

Moreover, in the wider context of education, art education assumes a crucial position, requiring the involvement of extensively prepared educators to enable successful integration of the arts (Garvis, 2009). Within the realm of art education, a considerable body of research has been dedicated to investigating the impact of teacher self-efficacy on the extent and scope of arts instruction inside educational establishments (Alter, et al., 2009; Garvis & Pendergast, 2010; Kleinsteuber, 2014; Lemon & Garvis, 2013; Oreck, 2004). Multiple studies have consistently found that educators who exhibit high levels of self-efficacy in their teaching abilities in the arts tend to display more favourable attitudes, elevated expectations, heightened enthusiasm, enhanced creativity, increased incorporation of the arts into various subjects, improved collaboration, rigorous assessment methods, and a stronger dedication to professional growth in comparison to their colleagues (Chung, 2021; Davies, 2012; Denee, et al., 2023; Lemon & Garvis, 2013; Lindsay, 2021; Orakcı, et al., 2023; Zakaria, et al., 2019; Zee & Koomen, 2016). On the other hand, it is common for pre-service teachers to encounter considerable challenges regarding their confidence, motivation, and competence in teaching the arts (Denee, et al., 2023; Garvis, 2009; Lindsay, 2021; Lummis, et al., 2014). Consequently, they may exhibit avoidance behaviours that limit the amount of arts instruction provided in classroom environments (Ene, et al., 2020; Garvis, 2009). Therefore, it is crucial to have a thorough understanding of the self-regulation mechanisms employed by pre-service teachers within the realm of arts education, as well the impact of their self-efficacy beliefs (Lummis et al., 2014).

Several studies undertaken in India at the national level have examined the impact of arts education on teachers' self-efficacy from both a general and subject-specific perspective (Kumar & Singh, 2018; Sharma & Sharma, 2017; Srivastava & Singh, 2019). These studies show that through mastery experiences, vicarious learning experiences, persuasive feedback, and emotional arousal, arts education greatly increases teacher self-efficacy. Incorporating arts education into the curriculum gives teachers an opportunity to develop and enhance their skill set, strengthen their self-assurance, welcome

feedback for improvement, communicate their emotions effectively, manage stress, and nurture their creative capacities.

In a recent research endeavour, Agarwal (2023) investigated the development of a teacher preparation program that incorporates performing arts and its impact on the attitudes and self-efficacy of pre-service teachers. It aimed to offer a thorough understanding of the successful incorporation of performing arts within the educational context, aiming to enhance the engagement of students and foster a more interactive and vibrant learning environment. The author asserts that despite governmental efforts to promote arts integration in education, teachers often struggle to apply these techniques in their classrooms due to a lack of training in effectively integrating various art forms.

In a related study, Prince (2020) investigated the practical implications of art integration in a CBSE school in Assam. The study provides a comprehensive analysis of how art integration impacts both teaching and learning.

Hence, it follows that there exists a significant gap in research and in between policy and practice, particularly in the Indian context and more specifically within the state of Assam. The relevance of this gap becomes more pronounced when examined within the framework of NEP 2020. The current research study aims to fill this gap and provide a significant contribution to the realm of art education. The study's findings are anticipated to have broad implications for teacher training programs and curriculum development, since they aim to promote effective art education practices and enhance educational standards.

Based on the above literature, this study focuses on the following research question, objectives, and hypotheses.

Research Question

How does previous knowledge of art and art exposure influence the self-efficacy in art education of pre-service teacher trainees?

Objectives

1. To assess the levels of previous knowledge of art among pre-service teacher trainees.
2. To assess the extent of art exposure among pre-service teacher trainees.
3. To measure the self-efficacy beliefs of pre-service teacher trainees in their ability to effectively teach and integrate art education.

Hypotheses

Three null hypotheses were established to guide the study as follows:

1. **Hypothesis 1**: There is no significant impact of the level of previous knowledge on self-efficacy in teaching art when controlling for exposure to art.
2. **Hypothesis 2**: There is no significant impact of the level of art exposure on self-efficacy in teaching art when controlling for previous knowledge.
3. **Hypothesis 3**: The combined impact of previous knowledge and exposure to art experiences does not significantly predict self-efficacy in teaching art.

Research Methodology

Research Design: This study adopted a descriptive survey method to examine the impact of pre-service teacher trainees' prior art knowledge and exposure on their self-efficacy in art education.

Population and Sampling: The population for this study consisted of pre-service teacher trainees from five District Institutes of Elementary Teachers' Training (DIETs) in Assam, India, selected via a multistage cluster sampling method to represent different geographical regions. A total of 250 trainees were randomly selected based on a 95% confidence interval.

Data Collection Instruments: Custom scales were developed to measure Previous Knowledge (PK), Art Exposure (AE), and Self-Efficacy (SE) using 5-point Likert-type

scales. Instruments were designed based on established scales and literature (Bandura & Bandura, 2006; Kay, 2010; Malandrakis, et al., 2019; Sánchez-Rosas, et al., 2022; Tschannen-Moran & Hoy, 2002), focusing on capturing these key variables. Demographic data were collected using nominal scales.

Standardization and Validation: The scales underwent content validation by experts in Art Education, Research Methodology, and Teacher Education. Their feedback was used to refine the questionnaire, and the calculations of the Content Validity Index (CVI) and Content Validity Ratio (CVR) determined item retention. Thereafter, a pilot study with 63 trainees was conducted to test the feasibility and refine the instruments. Cronbach's Alpha coefficients, calculated using Jamovi software, ensured internal consistency and reliability for the scales. Results: Previous Knowledge (α=0.92), Art Exposure (α=0.92), PK and AE combined (α=0.96), and Self-Efficacy (α=0.98), affirming strong consistency within each scale (Nunnally, 1978).

Data Collection Procedures: Data collection was executed online using Google Forms to facilitate efficient and wide-reaching participation.

Statistical Analysis

The study employed inferential statistics, with data analysis techniques including descriptive statistics and regression analysis using Jamovi Satistical Software.

Descriptive Statistics:

Mean, median and standard deviation were calculated to assess the previous knowledge (PK), level of art exposure (AE), and the self-efficacy (SE) of pre-service teacher trainees in teaching art education, aligned with objectives 1, 2, and 3. The findings and interpretation are presented below:

Table1: Descriptive statistics

	PK	AE	SE
N	250	250	250
Mean	2.87	2.75	2.59
Median	2.90	2.80	2.50
Standard Deviation	0.840	0.825	0.880
Minimum	1.00	1.00	1.00
Maximum	5.00	5.00	5.00

Objective 1

From Table 1, it can be observed that the pre-service teacher trainees, on average, have a moderate level of previous knowledge of art with the mean value as indicated by the 'PK' variable being 2.87 (Table 1) on a scale from 1 to 5. The distribution of knowledge levels is relatively consistent with a slight tendency towards higher knowledge levels (Median 2.90 and SD 0.84). This information provides a baseline understanding of the pre-service teacher trainees' previous art knowledge.

Objective 2

On average, the pre-service teacher trainees are found to possess a moderate level of exposure to art, with the mean value as indicated by the 'AE' variable, being approximately 2.75 (Table 1) . The distribution of art exposure levels is fairly consistent among the trainees with some individual variability (Median 2.80 and SD 0.825). This information provides insight into the pre-service teacher trainees' prior experiences with art, which may be relevant to their future roles as teachers.

Objective 3

The mean self-efficacy belief score of pre-service teacher trainees in their ability to teach and integrate art education, as indicated by the 'SE' variable, is approximately 2.59 (Table 1) on a scale from 1 to 5. This shows that on average, pre-service teacher trainees have a moderate level of self-efficacy in their ability to instruct and incorporate art education. However, the distribution of self-efficacy beliefs is somewhat skewed towards lower levels, with a range of beliefs among individuals (Median 2.50 and SD 0.880). This suggests that there may be some variability

in how confident trainees feel about their ability to teach and integrate art education effectively.

Inferential Statistics

Regression analyses were carried out to test the hypotheses. The results are presented below.

Analysis of Null Hypothesis 1

Table 2: Model Fit Measures

Model	R	R²
1	0.625	0.390

Table 3: Model Coefficients – SE

Predictor	Estimate	SE	t	p
Intercept	0.710	0.1554	4.57	<.001
PK	0.655	0.0520	12.60	<.001

The linear regression model indicates that there exists a significant and positive relationship between pre-service teacher trainees' previous knowledge of art (PK) and their self-efficacy beliefs in teaching and integrating art education (SE).

The R value of 0.625 suggests a moderately positive linear relationship between the two variables. The R² value of 0.390 indicates that about 39% of the variation in the dependent variable (SE) can be attributed to the independent variable (PK) included in this study.

The analysis provides strong evidence to reject the null hypothesis indicating a significant impact ($p < 0.001$; Table 3) of pre-service teacher trainees' previous knowledge of art (PK) on their self-efficacy beliefs in teaching and integrating art education (SE), even when controlling for exposure to art.

So, it can be concluded that pre-service teacher trainees' prior art knowledge plays a significant role in shaping their self-efficacy beliefs related to teaching art education, regardless of their exposure to art experiences.

Analysis of Null Hypothesis 2:

Table 4: Model Fit Measures

Model	R	R²
1	0.592	0.351

Table 5: Model Coefficients – SE

Predictor	Estimate	SE	t	p
Intercept	0.852	0.1567	5.44	<.001
PK	0.632	0.0546	11.58	<.001

The R value of 0.592 indicates a moderately positive linear correlation between the two variables

The R² value of 0.351 (Table 4) suggests that 35.1% of the variance in the dependent variable is accounted for by the independent variable in this study.

The analysis provides strong evidence to reject the null hypothesis. The statistically significant coefficient for Art Exposure (AE) in the linear regression model ($p < 0.001$) indicates that AE has a significant impact on self-efficacy beliefs (SE) in teaching art when controlling for previous knowledge (PK).

So, it is inferred that art exposure significantly influences self-efficacy beliefs related to teaching and integrating art education, beyond the impact of prior knowledge.

Analysis of Null Hypothesis 3:

Table 6: Model Fit Measures

Model	R	R²
1	0.628	0.394

Table 7: Model Coefficients – SE

Predictor	Estimate	SE	t	p
Intercept	0.852	0.1567	5.44	<.001
PK	0.632	0.0546	11.58	<.001
AE	0.158	0.124	1.28	0.203

The linear regression analysis reveals that both previous knowledge (PK) and the combination of previous knowledge (PK) and

art exposure (AE) together have a statistically significant influence on self-efficacy beliefs (SE) in teaching art.

The value of R=0.628 suggests a moderate positive relationship between the predictors (PK and AE together) and SE.

The value of R^2 = 0.394 (Table 6) indicates that 39.4% of the variance in the dependent variable (SE) is explained by the combination of independent variables (PK and AE) considered for this study.

The p- value is less than 0.001 for PK (Table 7) which is statistically significant and indicates that higher levels of previous knowledge are associated with higher self-efficacy beliefs in teaching art.

However, the coefficient for AE is not statistically significant (p = 0.203; Table 7), suggesting that art exposure does not have a significant additional impact on self-efficacy beliefs when controlling for previous knowledge.

So, it can be concluded that while both previous knowledge and art exposure are factors influencing self-efficacy in teaching and integrating art education, the results suggest that previous knowledge (Coefficient value 0.514) plays a more substantial and significant role in predicting self-efficacy beliefs than art exposure (Coefficient value 0.158).

The analysis provides evidence to reject the null hypothesis (H03). The linear regression model shows that the combination of both previous knowledge (PK) and exposure to art experiences (AE) together has a statistically significant influence on self-efficacy beliefs (SE) in teaching art.

Although the coefficient for AE is not statistically significant (p = 0.203), it is still considered in the model.

Overall, the model demonstrates that the combination of PK and AE together significantly predicts self-efficacy in teaching art.

Previous knowledge and exposure to art experiences significantly impact self-efficacy beliefs in teaching and integrating art education, supporting the alternative hypothesis (HA3).

Results And Discussion

The primary objective of this study was to investigate how pre-service teacher trainees' prior art knowledge and their involvement in art-related activities influence their self-efficacy in teaching and integrating art education. The findings, interpreted within Albert Bandura's Social Cognitive Theory (Ye & Yee, 2023) framework, emphasizes the importance of self-efficacy, provide valuable insights for enhancing art education programs and teacher training.

Previous Knowledge of Art

The findings indicate that pre-service teacher trainees generally possess a moderate level of prior art knowledge, with some showing a slight tendency towards higher expertise. This foundational knowledge is crucial as it influences future engagement in art education and potentially impacts their teaching methods. Regression analysis confirmed a statistically significant positive correlation between trainees' prior art knowledge and their self-efficacy beliefs.

Art Exposure

The findings of the study indicated that trainees generally had a moderate level of exposure to art-related activities, with notable diversity among individuals. This findings highlights the significance of taking into account trainees' knowledge of art in teacher training programs. The differences in art exposure among trainees, likely influenced by their diverse backgrounds, could significantly affect their efficacy in teaching and integrating art education.

Self-Efficacy Beliefs

The study revealed that teacher trainings, on average, held moderate self-efficacy beliefs, with a tendency towards lower self-efficacy levels. While many trainees demonstrated a fair degree of self-efficacy in their ability to

teach art, a significant portion displayed less certainty. This variation underscores the importance of designing teacher preparation programmes that cater to the diverse needs and confidence levels of trainees, ensuring that they are well-equipped to teach effectively.

Implications for Teacher Training

This study shows that teacher training programmes must consider trainees' previous knowledge and art experiences. Programmes need to adapt to the diverse backgrounds of learners, emphasizing the enhancement of existing knowledge, providing more opportunities for artistic exposure, and offering specific support to those with lower self-efficacy.

By doing so, teacher training can effectively improve the confidence and abilities of future art educators, which will benefit their professional development and the quality of art education overall. The study highlights the need for tailored interventions to address the varying levels of confidence among trainees, ensuring that all educators are well-prepared to teach art education effectively in diverse settings.

Suggestions

Drawing from the findings of this study, the following recommendations are proposed to enhance the self-efficacy of pre-service teacher trainees in art education:

1. **Comprehensive Art Education Curricula**: Teacher training programs should offer comprehensive curricula that include art history, theory, and practical skills within the realm of art education. Grounding art education in rigorous academic principles provides trainees with the essential knowledge that is required to teach and integrate art within their prospective educational settings effectively.

2. **Practical Engagement**: Integrating experiential art activities into teacher preparation programs can enhance trainees' artistic abilities and boost their

confidence. Participating in practical art activities such as drawing, painting, and sculpture enriches their skills and assurance in teaching these methods.

3. **Collaborations and Partnerships**: Facilitating collaborations between trainees and local artists or art organizations can broaden exposure to diverse art forms and practices, thereby providing excellent opportunities for engagement and learning. this is proposed in the NEP 2020 (paras 4.26 and 22.8). Participation in community art initiatives can also enhance individuals' appreciation for the arts and improve their teaching skills.

4. **Cultural Experiences**: Facilitating field trips to art exhibitions, museums, galleries, and cultural events can deepen trainees' understanding of diverse artistic forms and historical contexts. Encouraging reflection on these experiences can further enhance their teaching approaches.

5. **Mentorship Programs**: Implementing mentorship programs that include seasoned art educators can provide trainees with valuable instruction, constructive feedback, and essential support. Such mentorship not only enhances teaching skills but also cultivates confidence within the realm of art education.

6. **Professional Development**: Offering continuous professional development opportunities in art education helps keep educators well-informed about contemporary pedagogical approaches and emerging trends, thereby enhancing their self-efficacy.

7. **Interdisciplinary Approach**: Implementing an interdisciplinary approach in art education fosters the development of versatile educators who can seamlessly integrate art into various academic subjects, thus enhancing their teaching capabilities.

8. **Adapting Art Education to Evolving Trends and Technologies**: As art continuously evolves, integrating technology into contemporary art forms

is crucial. Training teachers in digital tools, multimedia applications, and virtual platforms equips them with skills essential for modern art practices, enhancing student engagement in the digital age.

9. **Assessment and Feedback Training**: Providing training in assessment and evaluation within art education empowers educators by equipping them with the skills needed to proficiently evaluate student artwork, offer constructive criticism, and accurately assess artistic development.

10. **Community Engagement**: Encourage trainees to actively engage with their local communities through art outreach initiatives. This involvement not only facilitates meaningful pedagogical encounters but also strengthens the presence of the arts within the community.

11. **Research and Reflection**: Promoting reflective practice and research in art instruction can greatly enhance trainees' proficiency and confidence. Engaging in research on effective pedagogical approaches and sharing personal experiences can substantially improve educators' professional development.

12. **Policy Advocacy**: Advocate for policies and guidelines that support the integration of art education within educational systems. This advocacy ensures that art is seamlessly incorporated into the curriculum and that resources are appropriately allocated.

Conclusion

The study highlights the role of previous knowledge and art exposure in shaping self-efficacy perceptions of pre-service teacher trainees. It highlights the importance of teacher training programs and art education in India, supporting the development of art education and student creativity.

While recognizing the significance of these findings, it is also essential to consider the limitations of the study. These limitations encompass the utilization of a cluster sampling technique, which may restrict the generalizability of the results beyond the specific context of Assam. Also, the variety of statistical techniques used in the process was restricted by the use of Google Forms as the main instrument for data collection. Furthermore, the study was subject to resource constraints, including limitations in time and financial resources. Future research in this field should endeavor to address these limitations by exploring the intricacies of mentorship programs, examining the influence of particular art exposure encounters, and evaluating the long-term implications of art educators' self-efficacy on their instructional methods. These research approaches aim to broaden the field of art education while avoiding the constraints inherent in this study, opening the way for evidence-based teacher training programs, thereby advancing the goals of art education in India.

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