

A Comparative Study of Multi-Stakeholder Perspective on the Implementation of Art-Integrated Learning in Schools

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Abstract

Effective integration of art and art forms into school curricula across all grades and subjects pose a significant issue that impacts teachers' pedagogy and student performance. The research problem addressed through this study was that the full potential of art integration remains untapped in the schools affiliated to the Central Board of Secondary Education (CBSE), India. The purpose of this quantitative study was to investigate the perceptions of different stakeholders, teachers, students, and parents, regarding art-integrated learning and its impact on education. The subjective sample consisted of 404 participants (151 teachers, 128 students and 125 parents). Statistical analysis of the data was conducted using SPSS, focusing on two research questions. The findings of this study revealed significant disparities in perceptions among the three stakeholder groups. Additionally, a weak correlation was found between teachers' positive perception of art-integrated learning and their confidence in implementing it in their classrooms. The results of this study coupled with the recommendations might lead to a positive change in more teachers integrating art effectively in their subjects.

Keywords: *Art-integrated learning (AIL), 21st-century skills, higher order thinking, holistic development, stakeholder perceptions, Central Board of Secondary Education (CBSE).*

1. Introduction

The Indian educational landscape is undergoing a transformative shift, underscored by the National Education Policy (NEP) 2020 and the National Curriculum Framework (NCF) 2023. These visionary documents emphasize the importance of inclusive education, holistic development, experiential learning, and the cultivation of critical thinking and creativity (National Curriculum Framework, 2023; National Education Policy, 2020). At the heart of these reforms lies a renewed focus on art integration, recognizing its potential to enhance cognitive, emotional, and social development. Art integration, a pedagogical approach that blends artistic elements and art forms into core subjects, has emerged as a promising avenue for enriching the learning experiences of the students (Lie et al., 2023; NCERT, 2023). By supporting 21st century learning skills, art integration aligns seamlessly with the overarching goals of NEP 2020. The policy explicitly advocates for an education system that nurtures individuality, aesthetic sense, cultural heritage, and imbibing Indian ethos all of which can be effectively cultivated through art integration (National Education Policy, 2020).

Through art integration, students can develop a deeper appreciation for their cultural heritage, enhance critical thinking and problem-solving skills, and cultivate a lifelong love for learning (Peppler et al., 2022). However, despite the clear policy directives, the actual implementation of art integration in Indian classrooms presents a complex challenge. A plethora of factors, including teacher understanding and lack of training, resource availability, and curricular constraints, hinder the widespread adoption of this innovative approach (Hipp & Dowell, 2019). Though there is growing recognition of Art-Integrated Learning's (AIL) potential to cultivate 21st-century learning skills, these inhibiting factors have hindered comprehensive investigations into its

specific efficacy in developing these skills among the CBSE students. By investigating the relationship between AIL and the enhancement of 21st-century skills, this study focused on the effectiveness of art integration in education and provided recommendations for enhancing its effectiveness. The ultimate objective of this study was to provide empirical evidence supporting the integration of art into the CBSE curriculum as a means of developing essential 21st-century skills. The findings of this research will inform the enhancement of curriculum, development of effective AIL courses and programs, modes of assessment, contribute to the enhancement of art-integrated education in India, and support policymakers in making informed decisions about curriculum, pedagogy, and assessment.

2. The Problem

The integration of art into the core curriculum holds immense potential to transform education (Zhao et al., 2024). According to Maneen (2016), art integration can enhance students' overall development and prepare them for the challenges of the 21st century. The NEP 2020 has recognized the significance of arts education and emphasized its integration across subjects. However, the full potential of art integration in Indian schools remains largely untapped.

While the NEP 2020 emphasizes the cultivation of 21st-century skills and recognizes the potential of AIL as a pedagogical approach to foster these competencies, there is a significant gap in empirical research examining the specific impact of AIL on the development of critical thinking, creativity, communication, and collaboration skills (the 4Cs) among CBSE students in India. Despite the theoretical framework supporting the efficacy of AIL, concrete evidence establishing a direct causal link between AIL implementation and measurable improvements in these skills remains limited. This study aimed to address this research gap by investigating the extent to which AIL contributed to the development of 21st-century skills in students within the CBSE context.

2.1 Rationale

The 21st century demands a paradigm shift in education, prioritizing the cultivation of higher-order thinking skills. The 4Cs are imperative for individuals to thrive in a complex, interconnected world (Rajesh & Suresh, 2018; Thornhill-Miller et al., 2023). Art-integrated learning is a promising pedagogical approach to nurture these skills, emphasizing and aligning with experiential and holistic learning, as suggested by the American philosopher and psychologist John Dewey (1938, as cited in Latasha, 2020). Recent research in the field of education emphasizes the potential of AIL in enhancing student engagement, motivation, and academic achievement (Penerosa & Pischnotte, 2021). Studies have demonstrated that integrating arts into core subjects can enhance students' cognitive abilities, problem-solving skills, and critical thinking (Gibson & Ewing, 2020). Moreover, AIL has been shown to promote social and emotional learning, fostering empathy, collaboration, and communication (Uslu & Uslu, 2021). In spite of various educational policies and frameworks supporting the benefits of AIL, research specifically examining its impact on the development of the 4Cs among CBSE students is finite. This research gap necessitated a focused investigation to understand the causal relationship between AIL and these essential skills.

2.2 Theoretical Framework

The theoretical foundation of AIL is rooted in constructivist and experiential learning theories. Constructivism posits that learners actively construct knowledge through interaction with their environment (Piaget, 1936, as cited in Devi, 2019). AIL aligns with this perspective by providing students with opportunities to explore, experiment, and create, thereby facilitating knowledge construction. Experiential learning emphasizes learning through doing and reflecting (Kolb, 1984). AIL offers a rich platform for students to engage in hands-on activities, develop problem-solving skills, and deepen their understanding of concepts. When amalgamated, these two theories offer an effective framework for AIL to be implemented as a powerful pedagogy in schools.

2.3 Literature Review

Through this literature review, the authors explored the intersection of AIL and 21st-century skills development, focusing on its implications for CBSE students in India. The theoretical foundation of AIL, its impact on cognitive, affective, and social development, and the specific outcomes related to the 4Cs were explored. Additionally, the review explored the challenges and opportunities of implementing AIL in Indian classrooms, considering factors such as teacher training, curriculum, and assessment.

Research suggests that AIL can significantly enhance cognitive development. Studies have shown that engaging in art-based activities can improve problem-solving skills (James et al., 2024). AIL can also stimulate creativity and innovation by encouraging divergent thinking and imagination (Thorhill-Miller et al., 2023). Furthermore, art integration can enhance spatial reasoning, visual literacy, and metacognition (Schraw & Richmond, 2022). Beyond cognitive development, AIL plays a crucial role in affective development. Art-based activities can foster emotional intelligence, empathy, and self-awareness (Morizio et al., 2022). The authors recorded that engaging in creative processes can promote self-expression, resilience, and a positive sense of self. Additionally, AIL can contribute to the development of motivation, intrinsic interest, and a lifelong love of learning (Zhongbin, 2023).

AIL also provides opportunities for collaborative learning and social interaction. Working on art projects in groups can enhance teamwork, cooperation, and conflict resolution skills (Srivastava, 2023). AIL can also foster intercultural understanding and appreciation for diversity through exposure to different artistic styles and perspectives (Sucitra & Lasiyo, 2024). AIL can significantly contribute to the development of critical thinking by encouraging students to analyze, evaluate, and synthesize information (Corbisiero-Drakos et al., 2021). Creativity is at the core of AIL, as it involves generating innovative ideas, perspectives, and solutions (Weng et al., 2023). Communication skills are essential for collaborative art projects, requiring effective expression and presentation of ideas (Devi, 2019). Finally, AIL fosters collaboration through shared experiences, teamwork, and negotiation (Agaoglu & Demir, 2020). While the potential benefits of AIL are well-documented, its implementation in Indian schools presents unique challenges. Factors such as teacher training, curriculum constraints, and resource availability can hinder the effective integration of art into the classroom (Ahmad, 2023; Amran et al., 2021). However, there are also

opportunities for AIL to address the specific needs of Indian students, including promoting cultural heritage, fostering language development, and addressing social issues.

This literature review demonstrates the strong connection between AIL and the development of 21st-century skills. By integrating art into the curriculum, schools can create rich and engaging learning environments that promote holistic student development. Nevertheless, to fully realize the potential of AIL, concerted efforts are needed to address the challenges and capitalize on the opportunities within the Indian educational context.

2.4 Research Questions (RQ) and Hypotheses

RQ1: Are there significant differences in perceptions of AIL's impact between students, teachers, and parents?

Null hypothesis H_0 : There are no significant differences in perceptions of AIL's impact between students, teachers, and parents.

Alternate hypothesis H_1 : There are significant differences in perceptions of AIL's impact between students, teachers, and parents.

RQ2: Is there a relationship between teachers' perceptions of AIL and their self-reported confidence/ability to design and implement AIL activities?

Null hypothesis H_0 : There is no significant relationship between teachers' perceptions of AIL and their self-reported confidence/ability to design and implement AIL activities.

Alternate hypothesis H_1 : There is a significant relationship between teachers' perceptions of AIL and their self-reported confidence/ability to design and implement AIL activities.

3. Methodology

3.1 Research Design and Participants

This research embraced a quantitative research design to thoroughly explore the perceived effects of AIL on 21st-century skills, the variances of opinions among stakeholders and the impact of AIL training on teacher confidence and, thus, ability. The quantitative component utilized a correlational design and a one-way Analysis of Variance (ANOVA) to help explore the research questions. The Statistical Package for Social Sciences (SPSS) was used to manage all the calculations with a significance level of $p = .05$. The target population of this study included parents, teachers and students affiliated with the CBSE curriculum. A purposive sampling strategy was deployed to select participants who were directly involved in the CBSE curriculum and had a first-hand experience with art-integrated learning. This purposive sampling ensured that the collected data was relevant and representative of the target population. Teachers and other staff members from different schools and various grade levels were chosen to capture a broad range of perspectives and experiences.

3.2 Data Collection

To facilitate data collection, an online survey was designed and disseminated through established networks within the target population. Specifically, the survey link was shared through school and teacher groups, inviting voluntary participation from students, teachers, and parents. A

total of 128 students of CBSE curriculum, 125 parents, and 151 teachers in the CBSE curriculum completed the survey. To safeguard participant anonymity and uphold ethical principles, the survey included a consent section explicitly outlining the study's purpose, data usage, and participants' rights. Participants were assured of anonymity, confidentiality and granted the option to withdraw from the study at any point.

3.3 Data Analysis

3.3.1 Research Question 1

RQ1: Are there significant differences in perceptions of AIL's impact between students, teachers, and parents?

To compare the perceptions of AIL's impact among students, teachers, and parents, a one-way ANOVA was conducted. Post-hoc tests (Tukey's HSD) was performed to identify specific differences between groups as the overall ANOVA was significant. Considering RQ1 and the null hypothesis, the participant category with three values – parent/guardian, student, and teacher, was chosen as the independent or grouping variable. The respondents' perception of AIL's impact on students' 21st century skills was taken as the dependent variable.

The first research question focused on determining if significant differences existed in the perceptions of the respondents about AIL's impact on students' 21st century skills across three different units of the respondents – parents/guardian, students, and teachers. We had the participant category as the independent variable with three different groups in it, and as a consequence one-way ANOVA was chosen as the statistical test to be used. One-way ANOVA test requires independent random sampling (Frankfort-Nachmias et al., 2020) and in this study, the choice of teacher-respondents had no effect on the choice of parent or student respondents and every respondent of the population had an equal chance of being a part of the research. When the number of respondents N is 50 or more, "the sampling distribution of the mean would be approximately normal regardless of the shape of the distribution" (Frankfort-Nachmias et al., 2020, p. 301). As seen from the descriptive statistics in Table 1, the number of parent/guardian respondents ($N = 125$), students ($N = 128$), and teacher ($N = 151$) respondents satisfied this assumption with the population distribution approximately normal. The homogeneous variances of the three groups in the participant category ($N = 404$): parent/guardian ($M = 4.22$, $SD = .76$, $N = 125$), student ($M = 4.19$, $SD = .71$, $N = 128$), and teacher ($M = 4.53$, $SD = .58$, $N = 151$) (Table 1) justified the choice of ANOVA.

Table 1

Descriptive Statistics for the Respondents

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval			
					for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Parent/ guardian	125	4.2160	.75759	.06776	4.0819	4.3501	1.00	5.00
Student	128	4.1875	.70711	.06250	4.0638	4.3112	2.00	5.00
teacher	151	4.5298	.57513	.04680	4.4373	4.6223	3.00	5.00
Total	404	4.3243	.69476	.03457	4.2563	4.3922	1.00	5.00

Table 2*ANOVA Results – Impact of AIL by Parent/Guardian, Student, and Teacher Category*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.238	2	5.119	11.139	<.001
Within Groups	184.284	401	.460		
Total	194.522	403			

Table 3*ANOVA Effect Sizes^a*

		Point Estimate	95% Confidence Interval	
			Lower	Upper
Extent to which AIL enhances the development of 21st century skills in students	Eta-squared	.053	.016	.098
	Epsilon-squared	.048	.011	.093
	Omega-squared	.048	.011	.093
	Fixed-effect			
	Omega-squared	.024	.006	.049
	Random-effect			

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

A one-way between subjects ANOVA was conducted to compare the perceptions of parents/guardians, students, and teachers on the impact of AIL on students' 21st century learning skills. As shown in Table 2, there was a significant effect of the AIL on students' 21st century learning skills at the $p < .05$ level according to the three categories $F(2, 401) = 11.14$, $p < .001$, $\eta^2 = .053$ (Table 3). This would be considered as a medium effect using Cohen's (1988) conventions.

Table 4*Tests of Homogeneity of Variances*

		Levene			
		Statistic	df1	df2	Sig.
Extent to which AIL enhances the development of 21st century skills in students	Based on Mean	.496	2	401	.609
	Based on Median	.341	2	401	.712
	Based on Median and with adjusted df	.341	2	396.432	.712
	Based on trimmed mean	1.215	2	401	.298

Levene's test for homogeneity of variances indicated equal variances ($F(2, 401) = .50$, $p > .05$), (Table 4), indicating that there was not enough evidence to conclude that the variances of the groups were unequal. Consequently, we assumed that the variances were equal for further analysis. The initial ANOVA showed that there were difference between groups but did not specify where these difference lied. To find out which specific groups were difference from each other, additional post hoc test was conducted.

A Tukey's honestly significant difference (HSD) post-hoc analysis test was conducted to determine which specific groups were significantly different. The analysis in Table 5 indicated that *students* had significantly different perceptions about the *Extent to which AIL enhances 21st century skills of students* than *teachers* ($p < .001$) and *parents/guardians* also had significantly different perceptions about the *Extent to which AIL enhances 21st century skills of students* than *teachers* ($p < .001$). But *parents/guardians* had no significantly different perceptions about the *Extent to which AIL enhances 21st century skills of students* than *students*. The mean plot (Figure 1) suggested that *teachers* hold a significantly higher belief in the *Extent to which AIL enhances 21st century skills of students* than *students* and *parents/guardians*.

Table 5

Multiple Comparisons

Dependent Variable: Extent to which AIL enhances the development of 21st century skills in students

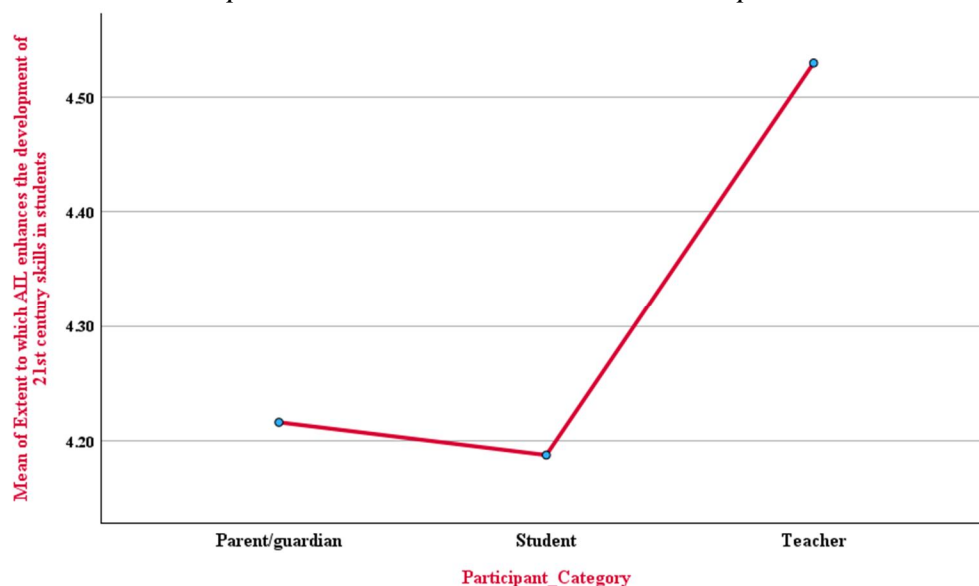
Tukey HSD

(I) Participant_ Category	(J) Participant_ Category	Mean			95% Confidence Interval	
		Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Parent/guardian	Student	.02850	.08525	.940	-.1720	.2290
	Teacher	-.31380*	.08198	<.001	-.5066	-.1210
Student	Parent/guardian	-.02850	.08525	.940	-.2290	.1720
	Teacher	-.34230*	.08145	<.001	-.5339	-.1507
teacher	Parent/guardian	.31380*	.08198	<.001	.1210	.5066
	Student	.34230*	.08145	<.001	.1507	.5339

*. The mean difference is significant at the 0.05 level.

Figure 1

Mean Plot to Compare the Mean Scores between the Groups



3.3.2 Research Question 2

RQ2: Is there a relationship between teachers' perceptions of AIL and their self-reported confidence/ability to design and implement AIL activities? To examine the relationship between teachers' perceptions of AIL and their self-reported confidence/ability to design and implement AIL activities, Spearman's rho correlation coefficient was used. This non-parametric test was chosen as both variables chosen for this research question were measured on ordinal scales. Correlation analysis was used to measure the strength and direction of the relationship between the two variables without implying causation (Frankfort-Nachmias et al., 2020).

Teachers' perceptions of AIL (variable 1) and teachers' self-reported confidence/ability to design and implement AIL activities (variable 2) were chosen to be the two variables for this test. Both these variables were measured using a 5-point Likert scale ranging from 'strongly agree' to 'strongly disagree' for variable 1 and 'very confident' to 'not confident at all' for variable 2, respectively.

Table 6

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Confidence_Ability	151	2	5	4.09	.783
AIL_Perception	151	3.00	5.00	4.5298	.57513
Valid N (listwise)	151				

From Table 6, it was seen that the sample size ($N = 151$) was large and hence the correlation between Teachers' perceptions of AIL ($M = 4.53$, $SD = .58$) and Teachers' self-reported Confidence/Ability to design and implement AIL activities ($M = 4.09$, $SD = .78$) was considered reliable or more stable. The results of the Spearman's correlation ($r(151) = .18$, $p < .001$) indicated that there was a significant relationship between Teachers' perceptions of AIL and Teachers' self-reported Confidence/Ability to design and implement AIL activities at $p < .05$ level (Table 7). As evident from Table 8, Spearman's rho was $.18$ ($95\% CI [.01, .33]$), increasing the evidence that the chosen variables were related.

Table 7

Correlations

		Confidence_	AIL_
		Ability	Perception
Spearman's rho	Confidence_	1.000	.177*
	Ability	.	.030
	N	151	151
AIL_	Perception	.177*	1.000
	Ability	.030	.
	N	151	151

*. Correlation is significant at the 0.05 level (2-tailed).

Table 8
Confidence Intervals of Spearman's rho

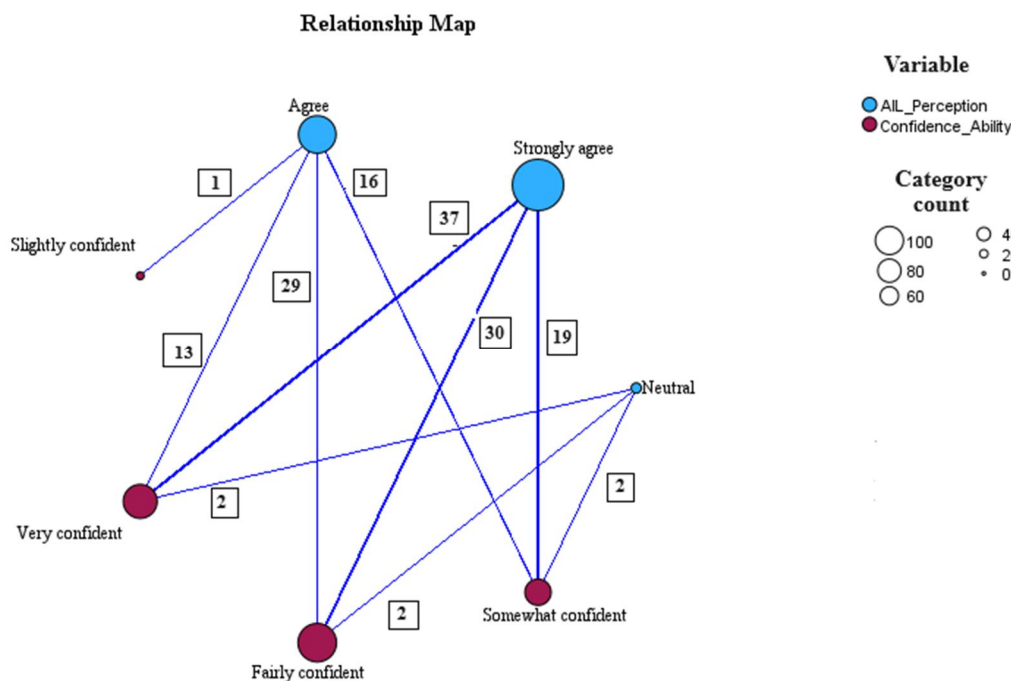
	Spearman's rho	Significance (2-tailed)	95% Confidence Intervals (2-tailed) ^{a,b}	
			Lower	Upper
Confidence_Ability	.177	.030	.013	.331
AIL_Perception				

a. Estimation is based on Fisher's r-to-z transformation.

b. Estimation of standard error is based on the formula proposed by Fieller, Hartley, and Pearson.

While calculating Spearman's correlation coefficient, the sign in front of the coefficient decides the direction of the relationship (Frankfort-Nachmias et al., 2020). From Table 7, the authors saw that the Spearman's correlation ($r(151) = .18$) was positive. This indicated that the two variables increased or decreased together in the same direction. Additionally, the value of the Spearman's rho lying between .00 and .19 pointed out a weak positive correlation (Walden University Academic Skills Center, 2021) between teachers' perceptions of AIL and their confidence/ability in AIL implementation.

Figure 2
Relationship Map – Correlation Analysis



To visually represent the interconnections between teachers' perceptions of AIL and their self-reported confidence/ability to design and implement AIL activities, a relationship map was constructed. The map illustrated the strength of the relationship between these two key variables. The relationship map clearly showed a strong positive association between teachers' perceptions of AIL and their self-reported confidence in designing and implementing AIL activities, as indicated by the thick, solid lines connecting the nodes for 'Strongly agree' and 'Agree' with the confidence levels in implementing AIL activities.

4. Results and Discussion

The findings of this study provided valuable insights into the relationship between teachers' perceptions of AIL and their confidence in implementing it, as well as the diverse perspectives held by key stakeholders—teachers, students, and parents/guardians—regarding AIL's potential to enhance 21st century skills. The results indicated a positive but weak correlation between teachers' perceptions of AIL and their self-reported confidence in implementing AIL activities. While this suggested a general trend of increased confidence with more positive perceptions, the modest correlation implied that other factors might also influence teachers' ability to effectively integrate art into their teaching practices.

The comparison of perceptions across different stakeholders revealed significant disparities. Notably, teachers expressed significantly higher belief in AIL's capacity to enhance 21st century skills compared to both students and parents/guardians. This finding highlighted the importance of targeted professional development initiatives to bridge the perception gap and foster a shared understanding of AIL's potential benefits. These findings aligned with the overarching goals of the NEP (2020) and the NCF (2023) in India, which emphasize the holistic development of students and the integration of arts into the curriculum. By enhancing teachers' confidence and bridging perception gaps, schools can create a more conducive environment for implementing AIL effectively.

To maximize the potential of AIL for student learning, it is crucial to address the identified disparities in perceptions. This can be achieved through comprehensive professional development programs that not only equip teachers with the necessary pedagogical skills but also foster a shared vision of AIL among all stakeholders. Furthermore, creating platforms for dialogue and collaboration between teachers, students, and parents can help to build consensus around the value of AIL in promoting 21st century skills.

5. Limitations

Firstly, the use of a cross-sectional design precluded the establishment of causal relationships between variables. While the study identified correlations between teachers' perceptions of AIL and their confidence in implementation, it cannot definitively determine whether one variable directly influences the other. Secondly, the reliance on self-reported data through a Google Form survey may have introduced response bias. Participants may have provided socially desirable responses or misremembered information, potentially affecting the accuracy of the results. Additionally, the convenience sampling method employed in this study limits the generalizability of the findings to a wider population of teachers, students, and parents.

Furthermore, the study focused on a specific context and may not be representative of other educational settings. Cultural, socioeconomic, and regional factors could influence the perceptions and practices related to AIL. Finally, the study's scope was constrained to exploring the relationship between teachers' perceptions, confidence, and AIL implementation. It did not delve into the specific instructional strategies employed by teachers or the outcomes of AIL integration in terms of student learning. Addressing these limitations in future research could provide a more

comprehensive understanding of the factors influencing AIL implementation and its impact on student outcomes.

6. Recommendations

Inferring from the results of this study, few key recommendations are suggested to improve the adoption of AIL into the CBSE curriculum. It is important to increase the awareness of AIL and its efficacy as an effective pedagogical approach among all stakeholders. The CBSE should develop a compendium to educate stakeholders, especially parents, teachers, and students, about the advantages of AIL in improving student-achievements. Providing professional development opportunities aimed at enhancing teachers' confidence in integrating art into their specific curricula is essential. Short-term courses, MOOCs, or certificate/diploma programs, accessible by teachers of CBSE schools, in and out of India, can address diverse teacher needs, strengthen teachers' pedagogical skills and equip them to adopt innovative instructional strategies. Orientation sessions for parents, held at regular intervals, are essential to mitigate misconceptions about AIL and to strengthen parental support. Schools can collaborate with parents to create an advantageous environment for AIL adoption and implementation. The CBSE must provide continuous hand-holding and support to its teachers during the transition from traditional to art-integrated learning and teaching practices.

While this study has focused on the role of teachers, students, and parents, it is essential to explore the prospects of emerging technologies like artificial intelligence to support AIL practices. With artificial intelligence, educators can access innovative tools and resources to increase creativity in students, even in abstract concepts. As we recognize and adopt AIL as a holistic learning and teaching methodology, it is also important to avoid a one-size-fits-all approach. Instead, educational boards and institutions should adopt an adaptive framework suited to accommodate the needs of varied educational contexts and different learning styles of its students. By implementing these recommendations, it is anticipated that AIL can be more effectively integrated into the curriculum, leading to enhanced student learning outcomes and a more holistic educational experience.

7. Conclusion

Literature reveals that art integrated learning presents a promising approach for comprehensive development of students, across all age groups. Art integrated learning strengthens students' critical thinking, problem-solving, and creativity by developing bilateral stimulation in their brains. The findings of the study highlights the significance of teachers' perceptions of AIL and their confidence/ability in successfully designing and integrating art into the curriculum. The existing knowledge gap in AIL research has to addressed to increase the positive outcomes of AIL. As suggested in the NCF (2023), AIL can be helpful in shaping individuals equipped with diverse skills and knowledge necessary for the 21st century. By engaging in this research, the authors contribute to the literature on the crucial role played by teachers, students, and parents/guardians in the design and implementation of AIL in K-12 classrooms. Future research can lead to exploring the long-term impacts of AIL on student-achievements.

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