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# THE ROLE OF COLLABORATIVE ART PRACTICE IN PROMOTING COMMUNITY ENGAGEMENT AND SOCIAL CHANGE WITHIN EDUCATIONAL ENVIRONMENTS

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## ABSTRACT

*Collaborative art practice serves as a dynamic pedagogical approach within educational environments, fostering interaction, creative expression, and shared cultural understanding among students. By engaging participants in collective artistic projects, this approach cultivates social awareness, empathy, and active community participation. This research investigates how collaborative art practice promotes community engagement and drives social change in an educational context, by highlighting both individual and collective contributions to learning and societal impact. Data were collected from 480 participants across diverse disciplines in multiple academic institutions through the implementation of structured collaborative art projects. A mixed-methods framework combined quantitative measures of engagement, participation, and project outcomes with qualitative reflections from interviews and observational notes. The implementation process included structured workshops, interactive art sessions, and community-focused exhibitions, enabling participants to co-create projects by addressing social issues. Quantitative analysis using SPSS 28.0 included descriptive statistics, ANOVA, and regression models. Results indicated that collaborative art participation was the strongest predictor of engagement outcomes ( $\beta = 0.47$ ,  $t = 9.40$ ,  $p = 0.005$ ). Qualitative thematic analysis using NVivo 14 identifies key themes of enhanced community engagement, social awareness, civic responsibility, creative expression, and teamwork. These findings demonstrate that well-planned collaborative art practices effectively foster social and artistic development, cultivate active, socially conscious learners, and strengthen community ties. The research underscores the transformative potential of integrating collaborative art into educational frameworks to create meaningful learning experiences and measurable social impact.*

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**KEYWORDS:** Collaborative Art Practice, Community Engagement, Social Change, Educational Environments, Creative Expression.

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## 1. INTRODUCTION

Collaborative art practice has emerged as a transformative approach in educational settings, emphasizing collective creativity to promote learning, socialization, and cultural awareness. In contrast to traditional, individual-oriented arts projects, collaborative art is characterized by the conscious involvement of participants in the artistic process, fostering group discussion, shared decision-making, and the integration of diverse perspectives [1]. Partnerships in art can enable school-community organisation and artist-community relations outside of the classroom, leading to improved educational performance, and the establishment of social networks. Such reciprocal praxis creates a combined learning environment whereby the students learn artistic skills and at the same time learn civic responsibility. It is not only a way of promoting innovation but also leads to social cohesion between students, teachers and the society at large [2]. Empathy, critical thinking and sense of responsibility are fostered in the school environment by creativity and social exchange, and thus lead to participation in community activities [3]. Also, collaborative art facilitates experiential learning that links theory and real life environment and, consequently, improves problem solving and decision making skills. The main principle of collaborative art is grounded on the principle of shared creation where every participant brings with him/her his/her ideas, expertise and knowledge. This model opposes hierarchical learning organizations, promoting inclusivity, respect, and cultural diversity [4]. It goes hand in hand with participatory leadership styles where leaders avoid commanding directions hence giving the students agency and self-direction. This is because, through the usage of collaborative art, participants can discuss, generate and apply solutions to actual social scenarios in the real world, hence enhancing their knowledge of societal problems [5]. The participatory nature of this as well makes the students partake in creative and social activities thus promoting a feeling of agency and empowerment [6].

Practically, collaborative art may be used in many ways, such as murals, installations, performance art, and digital works among others, to engage people in the investigation of social problems, the developing of shared identity, and the reactive response on the issues of the community among others [7]. Murals, especially, are the cases in point, as they simultaneously focus on cultivating technical skills and exploring the local history, culture, and topical social issues, thus equipped in offering a more

contextualized vision to the students. The benefits of engaging outside stakeholders in artistic practice are many. This kind of engagement would promote social cohesion by facilitating orderly cooperation, develop fundamental communication skills and give the underprivileged groups an avenue to express themselves [8]. The establishment of negotiation, time-management, and leadership skills is also achievable by means of group projects that can be transferred to the sphere of professional and civil activities. Such efforts are favorable to the experiential learning experience because the students can acquire the skills of problem-solving, negotiation, and managing projects. As a result, collaborative art can be used as a social change agent, fostering civic engagement and breaking the barrier between classroom education and practice in reality [9]. Communal arts activities also cultivate an attitude towards local crises, an increased level of awareness and increased civic response [10]. The issues, however, continue to exist. Group dynamics can create conflict, inequalities in the level of participation or domination of specific voices [11]. Time and resources also limit success of the project. The social outcomes are a priori long-term and subjective and this makes it difficult to evaluate the level of contribution towards societal development [12]. It is expected that technological developments, to advance the collaborative art and digital media and virtual collaborative platforms will be used to expand the participation, project archiving, and measuring the impact on a local and global level.

To overcome these limitations, the research highlights the importance of facilitation using a structured approach, clear role definition, and well-designed participation plans. Conflicts are approached using the inclusion of reflective practices, continuous feedback and adaptive planning. Moreover, the qualitative and participatory assessment can be also incorporated to measure the impact on social issues more efficiently and to present the functioning data about future projects.

## 2. LITERATURE REVIEW

This paragraph will summarize the literature on collaborative art practice in education, clarifying what it means concerning community participation, social consciousness, and change in society and pointing out gaps that legitimize the current research.

Mural arts have been recognized to have implications on how the community can engage and have sustainable urban development [13]. Three

cities in Europe were covered with the use of a qualitative, project-based approach, which included 54 community workshops and 18 mural installations. Findings showed positive outcomes of improved community integration, urban engagement and development, but were limited by situational particulars, small sample of cities, and failure to assess long-term effects. The links between Connected Art Practice and its role in educational institutions and its role in transdisciplinary collaboration and transformative learning are discussed [14]. The observation, discussion, and audio-visual documentation constituted methodological processes, which resulted in the outcomes that enriched the art and communication, self-reflection and cooperative competence. The results of this however were constrained by biased interpretation and lack of generalizability of the qualitative data. The review involved policies which help in group activity to assist in sustainable community service in higher education [15]. The use of qualitative analysis corresponded to the modern standards of academic research and the thematic analysis, which led to the identification of such strategies as experience learning management, civic responsibility, and integration of service-learning. However, among the weaknesses, one could distinguish a lack of original data and scarce information about a practical implementation.

The effect of the learning process was explored in the case of art and design undergraduate students [16]. Structural equation modelling (partial least squares) was used to analyse the data of 200 students. Findings indicated that immersion based learning had a positive impact on interaction in flow states, depending on motivation, curiosity, cognitive gains, and reflective consideration. The research was limited in that it had a low level of generalisability to other fields. The effectiveness of AI-based instructional activities in digital media art was tested [17]. The intervention involved AI-based image recognition, sound recognition, natural language processing, and traditional pedagogic methods to provide the instruction to 160 students who were separated into four groups. Results showed that AI methods were significantly superior to conventional training, in which students were more responsive to visual art than language. The single-school sample was the limitation because it restricted the scope of generalization. Social cognition theory [18] was among the factors that influenced the acceptance and practical use of mobile learning in art education. The analysis of the data with SPSS and Smart-PLS 3.3.3 provided support of 16 out of 18 of the hypotheses

that describe the real usage (52.5%). The weaknesses were that it had a regional focus and self-report information.

The dependence between the engagement with the arts and the degree of growth of critical consciousness among high school students and the fluctuation in the outcomes was identified through social category [19]. All the researchers examined the relationships between critical thinking and behaviours and arts involvement development on a sample of 2,537 students (10-20 years) and demographics and other activities control. The findings showed the heightened critical awareness especially the critical action among the youth of color as a result of the arts engagement. These were the limitations of correlational research and the possibility of confounding variables that were not quantified. The level of innovation and creativity among the undergraduate students using Virtual Classroom Learning Environment (VCLE) based on the concept of science, technology, Engineering, Arts and Mathematics (STEM) was amplified. A model that was designed and tested by specialists through mixed methods was a gamified VCLE model [20]. The results were denoted by a high degree of originality and invention ( $p < .01$ ) in comparison to the traditional instruction. These limitations were some of the few samples of students and expert judgement.

The effect of the problem-based digital art making in Scratch on the promotion of STEAM learning was implied [21]. The sample size of the qualitative research was 54 middle school students, and the data were gathered with the usage of digital artifacts, observations, and interviews. The findings indicated that there was an improvement in the degree of creativity in terms of originality, usability, aesthetics and authenticity, but one of the weaknesses was the low ability of Scratch to produce high-level digital media. It was suggested to design art education through the assistance of a game strategy based on a metaverse [22]. It determined the learning experience and cognition by using semi-structured interviews, eye tracking experiment, and scales. The findings indicated that the level of presence, interaction and higher order thinking increased. The weaknesses included small sample sizes, technical constraints and absence of long-term standing effectiveness evaluation.

The connection among learning in sociological theory courses and arts-based teaching was investigated [23]. The analysis of the data on student feedback on a second-year course when compared to the previous outcomes could be concluded, that

student engagement, understanding, critical thinking, confidence, and theory application were improved. The weaknesses were the focus on a particular course that might be a limit to generalization. The notion of originality among the Ghanaian secondary visual arts teachers was postulated [24]. Interview-based and document-based qualitative research of 16 teachers was adopted. Findings showed that there were very minimal perceptions of creativity among teachers and these were historically ascertained. The small and local sample size was the main limitation as it restricts the extrapolation of the results to other contexts.

The efficiency of culturally relevant digital art-based mindfulness intervention at enhancing the emotional state of the students, their relationship with the school, and enjoyment of the learning process [25]. The results of the one-group repeated-measures research indicated that 243 primary students were improving significantly though Black and Asian students were the most affected. These were the utilization of self-reported data and the lack of control group. The relationship between academic and social-emotional and learning about the arts was examined [26]. The arts exposure in a randomised controlled trial of 42 Houston schools decreased school discipline infractions, enhanced writing and achievements as well as increased empathy and engagement. The researchers did not conduct a large-scale study because their study was restricted to one district and the use of short-term outcome measures. A modulation of beliefs concerning empathy to promote outgroup empathy and prosocial behaviour during an arts programme was implemented [27]. A six-trial intervention of psychology-art with 2,118 participants demonstrated the evidence of increased outgroup empathy and supportive behaviour. The restrictions were possible cultural difference and the assumption that there would be long-term outcomes of the intergroup relations after short-term experimental intervention.

The use of public art in the primary school curricula as a tool of enhancing student learning was investigated [28]. The experience through an ethnographic, qualitative, student based project through a mosaic mural showed greater creativity, applied skills and identity. Limitations were that it was a single-school study, the number of respondents was limited, and the data was qualitative which limited generalizability. It implied the significance of fair exchange between the researchers and the participants in artist-led workshops [29]. Results, which merge participatory

observation and interactive workshop information based on four themes, showed that creative practices suppress hierarchies and enable knowledge co-creation. Nevertheless, there were uncertainties as to the roles, differences of priorities, time, and ownership, which restricted the long-term collaboration and research development. Arts were also introduced as schools collaborated with arts institutions to form inclusive arts spaces [30]. Collaborative professional and student learning and practices were analysed using a qualitative interpretive approach. The findings indicated that there is an increased collaboration network, professional growth, and learning outcomes of the students. However, the findings did not apply to other settings because it was contextual.

The beneficial effect of arts-based, digital, and collaborative practices on creativity, engagement, empathy, and learning outcomes, most of them were based on a qualitative design, correlational research, or context-specific research with low external validity and brief outcomes. There was a limited literature that incorporates formalized collaborative art practice into a learning environment, and that also quantifies community participation and social transformation using both qualitative and quantitative methods. In addition to this, there was an exploration of the systematic relationships between the outcomes of individual learning and the group civic responsibility and societal contribution of arts in various educational contexts. To overcome these limitations, there was a need for extensive mixed-method research to quantitatively justify and qualitatively explicate the role of collaborative art in facilitating long-term community involvement and social change.

### 3. METHODOLOGY

This study employed a structured mixed-methods research methodology to investigate the potential of collaborative art in promoting social transformation and community participation within educational environments. Structured questionnaires and demographic forms were used to collect data from 480 participants across various institutions. Variables measured included collaborative art participation, community engagement, social awareness, civic responsibility, creative expression, and teamwork skills. Quantitative data were analyzed using SPSS 28.0, employing descriptive statistics, ANOVA, and regression models. Qualitative data were analyzed using NVivo 14 through thematic analysis. This mixed-methods approach enabled a comprehensive understanding of both measurable outcomes and

participants' experiential perspectives (Figure 1).

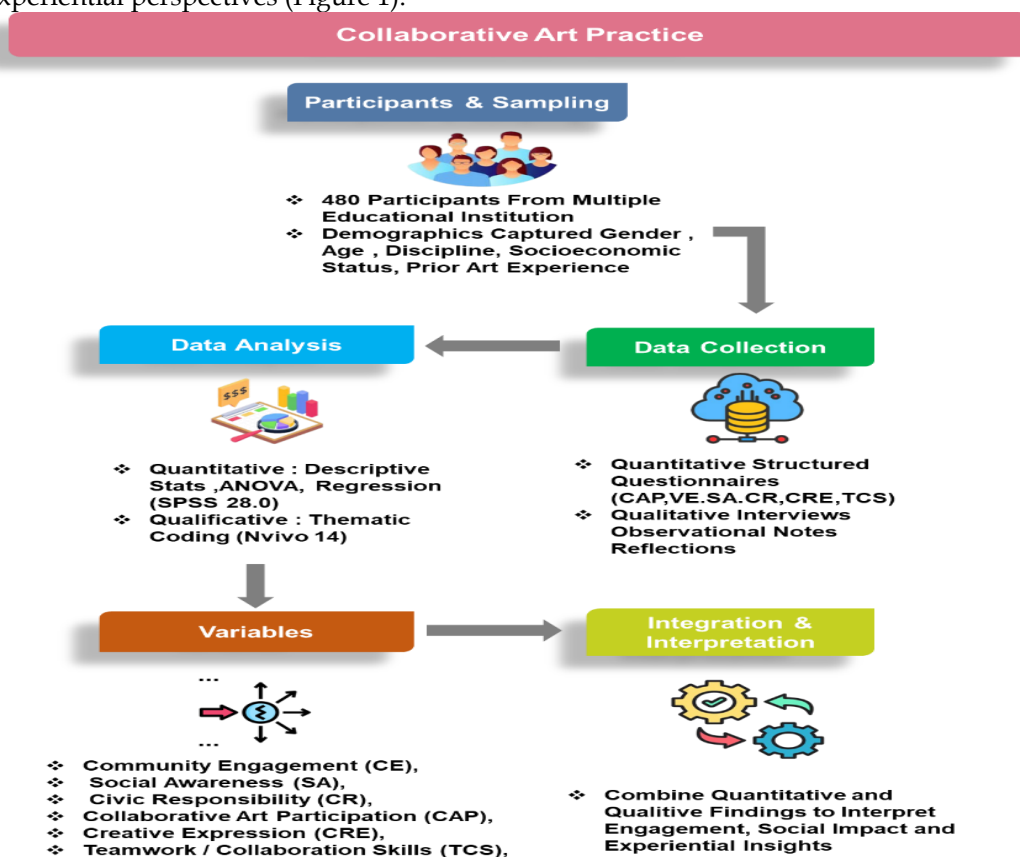


Figure 1: Framework for Collaborative Art Participation and Social Engagement.

### 3.1. Data Collection

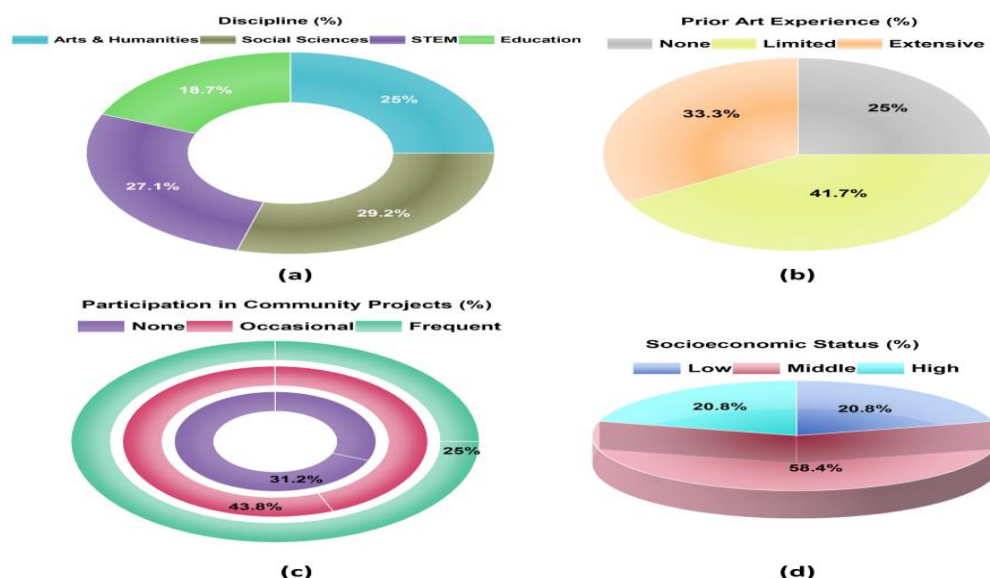
The structured data gathering procedure is to investigate the role of collaborative artwork in the advancement of community involvement and social transformation in educational environments. A total of 480 respondents are recruited to fill out survey questionnaires and background information forms in various institutions. The measures included not only

demographic factors but also measured variables regarding participation, engagement, and previous experiences in the activity of collaborative arts. Demographic data collection is necessary to learn the diversity of the sample and to put the responses of the participants into perspective. The respondents' demographic profile, which provides a summary of the gender, age, discipline, educational attainment, and other related characteristics, is represented in Table 1.

Table 1: Demographic Presentation of Participants in Educational Collaborative Art Projects.

| Demographic Variable | Category          | Frequency (n) | Percentage (%) |
|----------------------|-------------------|---------------|----------------|
| Gender               | Male              | 220           | 45.8           |
|                      | Female            | 260           | 54.2           |
| Age Group (years)    | 18-21             | 150           | 31.3           |
|                      | 22-25             | 210           | 43.8           |
|                      | 26-30             | 90            | 18.7           |
|                      | 31+               | 30            | 6.2            |
| Discipline           | Arts & Humanities | 120           | 25.0           |
|                      | Social Sciences   | 140           | 29.2           |
|                      | STEM              | 130           | 27.1           |
|                      | Education         | 90            | 18.7           |
| Educational Level    | Undergraduate     | 250           | 52.1           |
|                      | Postgraduate      | 230           | 47.9           |
| Nationality          | Local             | 400           | 83.3           |
|                      | International     | 80            | 16.7           |
| Socioeconomic Status | Low               | 100           | 20.8           |

|                                     |            |     |      |
|-------------------------------------|------------|-----|------|
|                                     | Middle     | 280 | 58.4 |
|                                     | High       | 100 | 20.8 |
| Prior Art Experience                | None       | 120 | 25.0 |
|                                     | Limited    | 200 | 41.7 |
|                                     | Extensive  | 160 | 33.3 |
|                                     | None       | 150 | 31.2 |
| Participation in Community Projects | Occasional | 210 | 43.8 |
|                                     | Frequent   | 120 | 25.0 |
|                                     | Full-time  | 350 | 72.9 |
| Mode of Study                       | Full-time  | 350 | 72.9 |
|                                     | Part-time  | 130 | 27.1 |



**Figure 2: Participant Characteristics of Collaborative Art Practices in (a) Academic Discipline, (b) Prior Art Experience, (c) Participation in Community Projects, and (d) Socioeconomic Status.**

Figure 2 (a) shows the academic disciplines of the participants: Arts & Humanities, Social Sciences, STEM, and Education. The variable demonstrates the effect of the field of research on collaborative art engagement, creativity, and social awareness. It is useful to analyze because it associates discipline with patterns of participation and results. Figure 2(b) illustrates the prior art experience of the participants as being either None, Limited, or Extensive. It specifies the variable of familiarity and expertise in art activities. This knowledge is used in the evaluation of the impact of experience on involvement, contribution, and sensitivity to collaborative art projects. Figure 2(c) indicates the frequency of participation in community projects: None, Occasional, or Frequent, among the participants. It specifies the interaction with social initiatives. Its advantage is that it compares community involvement to the collective art results and the development of social awareness. Figure 2(d) shows the socio-economic status of the participants: Low, Middle, or High. The variable sets the economic and social background, which determines the access to cultural resources. Its advantage is that it looks at the effects of status on engagement, creativity, and

the social effects of collaborative art practices.

### 3.2. Variables

The impact of collaborative art practices on a community and social change in learning environments was identified. Social impacts resulting in such topics as community participation, social awareness and civic responsibility. The level of engagement in collaborative art has been measured by the use of two operational variables, which include creative expression and teamwork skills, to come up with a measurement framework that explains how participation in collaborative art enhances heightened social awareness, responsible behaviours and meaningful community engagement.

- **Community Engagement (CE):** Participation and contributions of individuals in community-based events can be discussed as the measures of the influence of collaborative engagement on the social participation and mobilization.

- **Social Awareness (SA):** Social knowledge (with regard to issues, e.g. social problems, community needs, empathy, etc.) that fosters social awareness is developed in group art projects.

- **Civic Responsibility (CR):** Social change

drivers are influenced by behaviours and self-determination as a result of engagement in collaborative art.

- **Collaborative Art Participation (CAP):** This improves the ability to participate in the organized group art, thus increasing the effect of collaborative art practices on the community based on increased awareness and social influence.

- **Creative Expression (CRE):** The active participation in the creation of a collective artwork helps the participants to develop their capabilities of expressing their feelings and ideas, social messages, to each other.

- **Teamwork / Collaboration Skills (TCS):** Skills acquired through a collaborative art project, e.g., decision-making and problem solving, can be used to increase the level of community participation among the participants.

### 3.3. Questionnaire Design

The questionnaire contains questions that focus on collaborative art involvement, CE, SA, CR, CAP, CRE, and TCS. Each item is assessed with the 5-points Likert scale, with the rating point being 1 to 5 (strongly disagree to strongly agree) and the social engagement and social impact could be reliably and measurably assessed. Moreover, semi-structured interviews and systematic observational notes were used to gather qualitative reflections to be able to capture the experiences and perceptions of the participants, as well as the contextual insights regarding collaborative art activities. The interview protocols and the full questionnaire are presented in the Appendix.

### 3.4. Statistical Analysis

The statistical analysis based on both qualitative and quantitative approaches was performed to measure the connection between collaborative creative practices, the level of involvement, and the perceived social effect. Regression models, ANOVA

and descriptive statistics were used to analyze the differences and predicted correlations between the variables to summarize the data. The quantitative analyses were done by means of SPSS 28.0, which allowed the definition of means, standard deviations, correlations, and regression coefficients. To obtain qualitative data, NVivo 14 was used to perform thematic analysis of interviews and observational notes that helped find common patterns, themes, and relationships in the experiences of participants systematically.

## 4. RESULT

The comprehensive analysis of both quantitative and qualitative research to assess the social and engagement outcomes of collaborative art practices in the educational environments. The primary trends, variability, and distribution patterns of the six main variables CE, SA, CR, CAP, CRE, and TCS are summarized using descriptive statistics. Inferential statistics, like regression and ANOVA, are used to analyze the data to compare and forecast group differences and ascertain the correlations between the variables and the data. Thematic analysis of the interviews and observations is a qualitative approach. These analyses combined and helps to understand that well-planned collaborative art programs can encourage engagement, creativity, and social responsibility.

### 4.1. Descriptive Statistics

The variables like CE, SA, CR, CAP, CRE, and TCS that summarize and displays participant characteristics and replies, descriptive statistics are employed. This analysis presents a description of central tendencies, variability, and patterns of distribution, which is likely to comprehend the relationship of the data. The mean (average) indicates the central value of responses and is defined by Equation (1).

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} \quad (1)$$

Where,  $\bar{X}$  is the mean,  $X_i$  denotes the individual score,  $n$  denotes the overall observations, and  $\sum_{i=1}^n$  represents the summation of observation. Standard Deviation (SD) is a measure of the variation around the mean, which is defined in Equation (2).

$$SD = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n - 1}} \quad (2)$$

The frequency and percentage of categorical variables such as gender, discipline, and past art experience are

defined in Equation (3).

$$\text{Percentage (\%)} = \frac{\text{Frequency of category}}{\text{Total Participants}} \times 100 \quad (3)$$

Descriptive statistics were used to summarize central tendencies and variability in participants' responses across the six key variables. Table 2 presents the mean, standard deviation, and range for

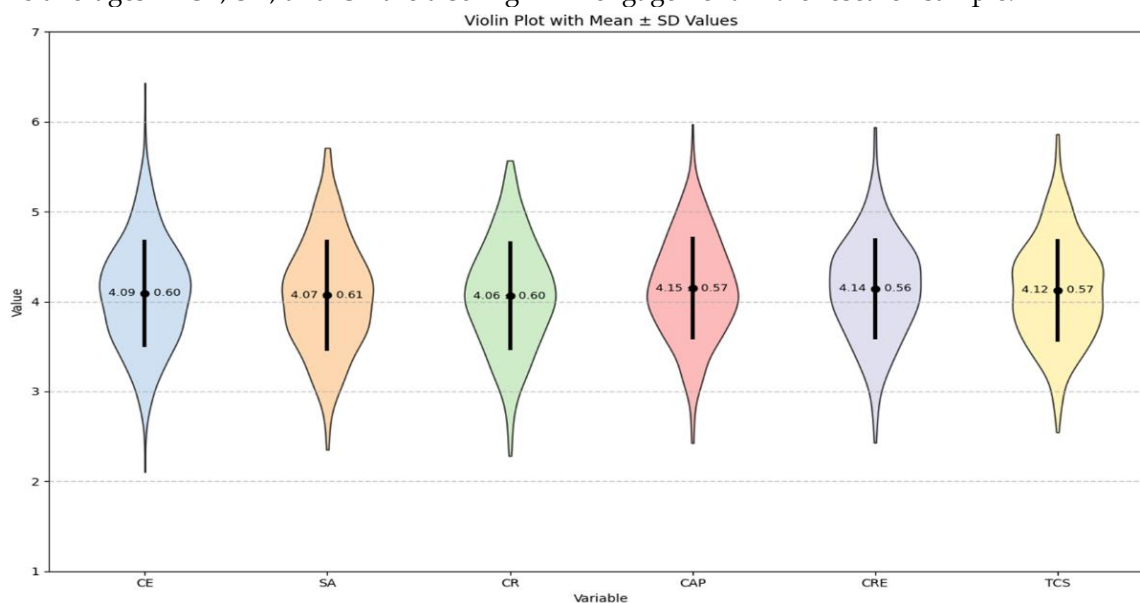
community engagement (CE), social awareness (SA), civic responsibility (CR), collaborative art participation (CAP), and creative expression (CRE), and teamwork skills (TCS).

**Table 2: Descriptive Statistics Analysis of Variables Related to Collaborative Art Practices.**

| Variable | N   | Mean (X) | Standard Deviation (SD) | Minimum | Maximum |
|----------|-----|----------|-------------------------|---------|---------|
| CE       | 480 | 4.08     | 0.61                    | 1       | 5       |
| SA       |     | 4.05     | 0.63                    | 2       | 5       |
| CR       |     | 4.02     | 0.60                    | 1       | 5       |
| CAP      |     | 4.12     | 0.58                    | 2       | 5       |
| CRE      |     | 4.15     | 0.57                    | 2       | 5       |
| TCS      |     | 4.10     | 0.59                    | 2       | 5       |

The descriptive statistics test demonstrates the mean, minimum, standard deviation, and maximum values of all the research variables on a five-point Likert scale. It increases the mean scores over the variables are evidence of high scores on collaborative art participation, creative expression, and teamwork skills. The averages in CE, SA, and CR are also high

and indicator of positive social outcomes. The values of the standard deviation are low, which implies the presence of relatively stable and similar responses from the participants. Figure 3 gives a visual representation of the general distribution and central tendency of the variables of interest in terms of engagement in the research sample.



**Figure 3: Mean and Variability of Key Features in Descriptive Statistics.**

#### 4.2. Analysis of Variance (ANOVA)

ANOVA was employed to determine the variables CE, SA, CR, CAP, CRE, and TCS that differed substantially across the different groups in terms of categorical parameters, such as degrees of collaborative art participation, discipline of analysis,

and prior creative experience.

When comparing the mean scores of many groups, ANOVA is used to determine that the observed differences are statistically significant. Equation (4) explains how the variation between groups was compared to the variance within groups to determine the F statistic.

$$F = \frac{MS_{\text{between}}}{MS_{\text{within}}} \quad (4)$$

The mean square within groups is represented by  $MS_{between}$ , while the mean square between groups is indicated by  $MS_{within}$ . Equations (5) and (6) are used to determine mean squares.

$$MS_{between} = \frac{SS_{between}}{df_{between}} \quad (5)$$

$$MS_{within} = \frac{SS_{within}}{df_{within}} \quad (6)$$

In this case,  $SS_{between}$  stands out to be the difference in the squares of the means between groups,  $SS_{within}$  is the difference in the squares of the variability within groups, and  $df$  is the number of degrees of freedom. The group means differ considerably when the F-value is statistically

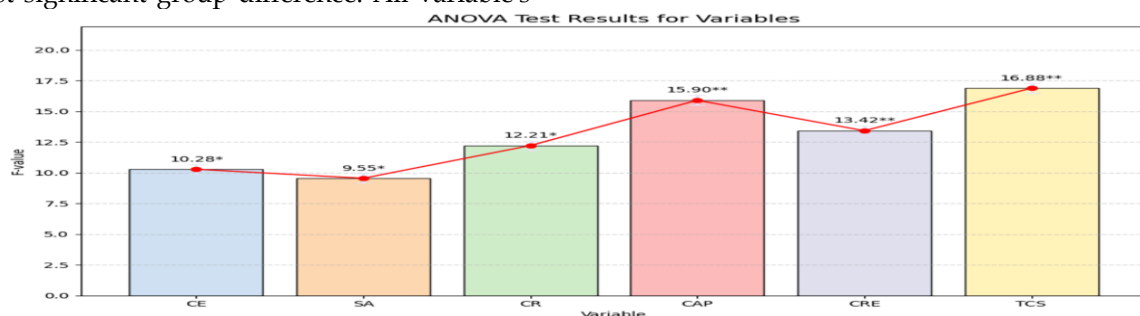
significant ( $p < 0.05$ ). According to collaborative art participation levels and other factors in terms of categories, the ANOVA outcomes of six variables, compares the significant mean differences between participant groups, are presented in Table 3.

**Table 3: ANOVA of Key Variables Related to Collaborative Art Practices.**

| Variable | Source of Variation | Sum of Squares (SS) | df  | Mean Square (MS) | F     | p – value |
|----------|---------------------|---------------------|-----|------------------|-------|-----------|
| CE       | Between Groups      | 12.32               | 3   | 4.11             | 10.28 | 0.023     |
|          | Within Groups       | 190.85              | 476 | 0.40             |       |           |
|          | Total               | 203.17              | 479 |                  |       |           |
| SA       | Between Groups      | 11.45               | 3   | 3.82             | 9.55  | 0.031     |
|          | Within Groups       | 190.32              | 476 | 0.40             |       |           |
|          | Total               | 201.77              | 479 |                  |       |           |
| CR       | Between Groups      | 14.28               | 3   | 4.76             | 12.21 | 0.018     |
|          | Within Groups       | 188.04              | 476 | 0.39             |       |           |
|          | Total               | 202.32              | 479 |                  |       |           |
| CAP      | Between Groups      | 19.56               | 3   | 6.52             | 15.90 | 0.005     |
|          | Within Groups       | 192.78              | 476 | 0.41             |       |           |
|          | Total               | 212.34              | 479 |                  |       |           |
| CRE      | Between Groups      | 15.72               | 3   | 5.24             | 13.42 | 0.008     |
|          | Within Groups       | 187.60              | 476 | 0.39             |       |           |
|          | Total               | 203.32              | 479 |                  |       |           |
| TCS      | Between Groups      | 20.24               | 3   | 6.75             | 16.88 | 0.004     |
|          | Within Groups       | 189.76              | 476 | 0.40             |       |           |
|          | Total               | 210.00              | 479 |                  |       |           |

The ANOVA test characterizes between-group and within-group variance of each of the six variables: community engagement, social awareness, civic responsibility, collaborative art participation, creative expression, and teamwork skills. TCS has the largest F-value ( $F = 16.88$ ,  $p < 0.04$ ), which represents the most significant group difference. All variable's

results are statistically significant, thereby demonstrating the notable differences between the groups. The distribution of variation and the importance of collaborative art practices, particularly in creativity, in educational environments are summarized in Figure 4.



**Figure 4: ANOVA Summary of Collaborative Art Practice with F-values.**

### 4.3. Regression Analysis

The predictive association between CE, SA, CR, CAP,

CRE, and TCS was examined using regression analysis. The analysis assists in identifying the degree of explanation of social and engagement outcomes by collaborative art participation and

mediators. The results of the multiple linear regression model is expressed in the form of Equation (7).

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \xi \quad (7)$$

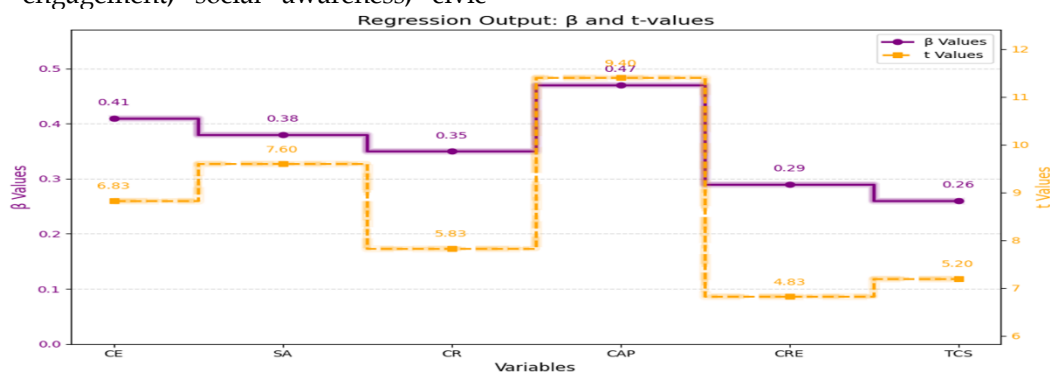
Where,  $Y$  is the variable (CE, SA, or CR),  $\beta_0$  represents the intercept,  $X_1, X_2$ , and  $X_3$  are the CAP, CRE, and TCS,  $\beta_1, \beta_2$ , and  $\beta_3$  are the regression coefficients, and  $\xi$  is the error term. The regression model's strength and significance are assessed using standardized t-values, beta coefficients ( $\beta$ ), standard errors, and p-values. According to the regression results, all six variables' beta coefficients are positive and statistically significant ( $p < 0.05$ ). Table 4 shows that ( $\beta$ ) values in the variables, implies that collaborative art practices and the mediating mechanisms have a significant effect on predicting improved community engagement, social awareness, and civic responsibility under educational environments.

**Table 4: Regression Analysis of Collaborative Art Participation Model.**

| Variables | $\beta$ | SE   | t    | p-Value | Significance |
|-----------|---------|------|------|---------|--------------|
| CE        | 0.41    | 0.06 | 6.83 | 0.001   | Significant  |
| SA        | 0.38    | 0.05 | 7.60 | 0.002   |              |
| CR        | 0.35    | 0.06 | 5.83 | 0.004   |              |
| CAP       | 0.47    | 0.05 | 9.40 | 0.005   |              |
| CRE       | 0.29    | 0.06 | 4.83 | 0.006   |              |
| TCS       | 0.26    | 0.05 | 5.20 | 0.003   |              |

The regression analysis results for all six variables are presented in terms of standardized coefficients ( $\beta$ ), corresponding standard errors, t-values, and associated significance levels. Collaborative Art Participation has the highest beta value ( $\beta = 0.47$ ), which implies the most significant predictive power. Positive and significant effects are presented in community engagement, social awareness, civic

responsibility, creative expression, and teamwork skills. Figure 5 summarizes the contribution of all the variables visually and emphasizes how collaborative art participation and its mediating processes all play a role in contributing to social engagement and socially responsible outcomes in learning environments.



**Figure 5: Predictive Effects of Collaborative Art in Regression Analysis Based on Standardized  $\beta$  and t Values.**

#### 4.4. Thematic Analysis

The systematic identification, categorization, and interpretation of patterns or themes in textual material is known as thematic analysis, a qualitative method. Interviews, field notes, and reflective feedback, by participants who participated in a collaborative arts project, were assessed. The researchers used NVivo 14 to code the data in order to systematise the data on the generation of social, creative and collaborative learning outcomes related

to collaborative arts practices. The thematic analysis was then performed in order to provide consistency and validity.

- **Community Engagement (CE):** The degree to which the community members were involved in the social programmes and their contributions in the projects of the community was recorded to demonstrate the community outcomes, collaboration, and experience recording.

- **Social Awareness (SA):** The participants gained knowledge about social problems and compassion

based on the cooperative activities of art, such as the process through which the needs of the community are expressed.

- **Civic Responsibility (CR):** The subjects indicated that they felt that there was a moral duty that made them take action that had an overall positive effect on the community.

- **Collaborative Art Participation (CAP):** Themes measured the common rate and occurrence of group participation in organised creative processes, workshops, and co-creation processes.

- **Creative Expression (CRE):** The ability to communicate ideas, feelings, and social messages creatively, original, and diverse was considered when the analysis was made.

- **Teamwork / Collaboration Skills (TCS):** The collaboration process via teamwork creation was manifested through the process of review, such as collective communication skills and problem-solving.

The cooperation in art activity is linked to more community involvement, higher level of social consciousness and more civil responsibility among the participants. Mean value of all six variables was high with low variance values depicting mostly positive reactions. A ANOVA indicated that there was a significant difference among the groups of participants, especially in the rebelliousness and creative expression. The respondents observed that team art activity is the most predictive of establishing social and engagement success, and the variables of creativity and teamwork act as mediators. Thematic analysis revealed that the structured collaborative art practices have the potential of developing and fostering the socially oriented, artistically inclined and collaboratively directed fields in the learning environments.

## 5. DISCUSSION

The collaborative art practices in educational environments created engagement of the communities, social consciousness, and transformative learning, which emphasized individual creativity and group contributions to social change. The participatory workshops in which artists and participants shared knowledge [29], to minimize hierarchies and encourage equal collaboration were compared. Its weaknesses were role ambiguity, inconsistent priorities, and limited long-term engagement. Similarly, the school-arts relationships [30], by enhancing the collaboration networks, professional growth, and student learning outcomes were location-specific and hard to generalize. To overcome these limitations, structured

collaborative art projects in several educational environments, the quantitative and qualitative approaches, and the measurement of the short- and long-term community involvement and social impact, were introduced. Thus, improving the external validity, role definitions and empirical measures of learning in various environments.

The collaborative art programs facilitated positive interaction and socialization among all 480 participants. Descriptive statistics results also showed that, Community Engagement (CE = 4.08), Social Awareness (SA = 4.05), Community Responsibility (CR = 4.02), CAP (4.12), Creative Expression (CRE = 4.15) and Team Collaboration Skills (TCS = 4.10) had the highest mean scores and low standard deviations (0.57), proving that responses of the participants to positive aspects. The outcomes of ANOVA showed statistically significant group differences, with a significant difference on creativity ( $F = 15.90, p = 0.005$ ). Besides, regression analysis revealed that CAP was a significant predictor of the sense of engagement of the participants, and the mediating effect of CRE and TCS was significant ( $\beta = 0.47, t = 9.40, p = 0.005$ ). NVivo 14 thematic analysis also identified that the participants showed greater community engagement, social awareness, and civic responsibility and better teamwork in applying participatory art activities.

## 6. CONCLUSION

Collaborative artistry in a learning process not only helps in building personal artistry, but also equips the learners in preparing them to socialize and providing the learners with an awareness of the social issues. That explored the potential of collaborative art practices in enabling the community to participate in activities and aid social changes used the mixed-method approach to examine the degree of engagement, participation, and consequences of community projects. One of the examples was the interviews and observations that provided qualitative information on the responses and reactions of participants to the interactive art classes, free workshops, and exhibitions that led to the collective search of social issues by the group. Particularly, descriptive statistics show that the maximum mean score of the process of creative expression (CRE = 4.15) and collaborative art participation (CAP = 4.12). The results of ANOVA suggest that the groups of participants are significantly different, and the highest F-value belongs to the collaboration skills (TCS,  $F = 16.88, p = 0.004$ ). The regression model shows that CAP is most

predictive of the outcome of engagement ( $\beta = 0.47$ ,  $t = 9.40$ ,  $p = 0.005$ ). The thematic analysis reveals several major themes of improved community engagement, social awareness, civic responsibility, creative expression, and teamwork. Finally, the results of the discussions show that properly organized collaborative art activities can effectively develop creativity, social responsibility, and community engagement, which has a transformational potential concerning education models. The limitations include a cross-sectional design, a one-country setting, and the utilization of

data that are self-reported, which limits the generalizability. Future research will increase generalizability and validity, longitudinal, multi-country studies with larger, more diverse samples and mixed methods. Additionally, the future work will apply cooperative art activities to the corporate environment, improving group creativity and staff participation, and the healthcare sector, facilitating patient-level well-being, treatment, and social rehabilitation by focusing on participatory art-making in the clinical and community context.

**Data Availability Statement:** The authors declare that the data supporting the findings of this study are available within the article. The raw/derived data supporting the findings of this study are available from the corresponding author at request.

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## APPENDIX

| Variable                              | Questionnaire Items                                                                                                                                                                                                     | Likert-Scale                                                                                |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Community Engagement (CE)             | 1. Involvement in community-oriented activities is regular.<br>2. Participation supports local social initiatives.<br>3. Collaborative art projects strengthen ties with the community.                                 | 1 = Strongly Disagree,<br>2 = Disagree,<br>3 = Neutral,<br>4 = Agree,<br>5 = Strongly Agree |
| Social Awareness (SA)                 | 1. Awareness of societal issues is increased through collaborative art projects.<br>2. Empathy toward others is demonstrated in project activities.<br>3. Understanding of social needs improves through participation. |                                                                                             |
| Civic Responsibility (CR)             | 1. Responsibility to contribute positively to society is emphasized.<br>2. Actions taken through art projects promote social change.<br>3. Engagement in projects encourages ethical and socially responsible behavior. |                                                                                             |
| Collaborative Art Participation (CAP) | 1. Participation in group art sessions is frequent.<br>2. Collaborative workshops are actively attended and engaged.<br>3. Contributions are consistently made during co-creation art projects.                         |                                                                                             |
| Creative Expression (CRE)             | 1. Ideas and emotions are effectively expressed through collaborative artwork.<br>2. Artwork reflects diverse perspectives and social messages.<br>3. Innovative approaches are incorporated in art projects.           |                                                                                             |
| Teamwork / Collaboration Skills (TCS) | 1. Effective communication is demonstrated during group art activities.<br>2. Cooperative problem-solving is applied in project tasks.<br>3. Coordination and teamwork enhance project outcomes.                        |                                                                                             |