

Integrating STEAM Education through Shibori Art: Improving Self-Love and Self-Esteem Among Women

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Abstract

This study aimed to discuss the effectiveness of Shibori creative art in fostering self-love and self-esteem as a means to empower women's roles. The study was conducted at RPTRA Kayu Manis, North Jakarta, with Shibori art treatment. The number of respondents involved was 10 people, aged 25-50 years, women with junior and high school education levels. Data were collected through observation, in-depth interviews, and analysis of the participants' work and quantitative data from pre-test and post-test experiments on the self-love measurement scale with a reliability value of the self-love measurement scale, $r = 0.89$ and a validity value of Cronbach's Alpha > 0.7 , and a self-esteem measurement scale with a reliability value of the self-esteem measurement tool $r = 0.82$ and a validity value of Cronbach's Alpha $= 0.81$. The paired T-test results showed significant improvements in both aspects, with self-love increasing by 4.2 points ($t=6.89$, $p<0.001$) and self-esteem increasing by 5.3 points ($t=9.81$, $p<0.001$), with a large effect size (Cohen's $d > 2$). Supporting factors such as freedom of expression, meditative nature, and pride in one's work played a crucial role. However, the complexity of the technique, the tendency towards self-judgment, and time constraints can hinder its effectiveness. For optimization, recommendations include modifying the technique (e.g., using a simpler method), integrating cognitive reflection, and grouping participants according to ability level.

Keywords: Shibori creative art, Self-love, Self-esteem, Art therapy

INTRODUCTION

Women in Indonesia are often faced with various demands within their families and communities, which sometimes conflict with their need to build self-love and self-esteem. This situation sometimes leads to psychological problems that impact their well-being. The gaps women experience due to environmental demands include, firstly, the gap between traditional expectations and women's need for self-development. Many women are expected to fulfill traditional roles as wives and mothers who prioritize their families. However, on the other hand, they also want to develop personally and professionally. The pressure to be always "perfect" in carrying out domestic roles can hinder their opportunities for self-exploration, honing their skills, and achieving self-fulfillment, contributing to low self-esteem. For example, women who choose careers are often criticized for neglecting their families. Conversely, housewives often feel less socially valued than working women.

There is a gap between the demands of multiple roles and mental exhaustion. Women are often expected to fulfill various roles simultaneously, including those of mother, wife, worker, and member of society. This burden can lead to stress and mental exhaustion, ultimately hindering self-love because they feel inadequate in carrying out all these roles. For example, working women are expected to continue taking care of the house and children

without assistance. If they fail to meet these expectations, they feel guilty and lack confidence. That often contradicts the concept of self-love, as women feel the need to change themselves. Those with lower self-esteem made them feel inadequate. Self-esteem is the evaluation an individual makes regarding their self-worth.

There is a gap between Societal expectations for women and their freedom to be themselves. Society often imposes rigid norms on how women should behave. Expecting them to be gentle, submissive, and reserved in expressing their opinions. This can hinder them from building self-esteem and make them feel restricted in expressing their true selves. For example, women who are Confident or ambitious are often labeled as 'too dominant' or 'unfeminine'. As a result, many women hold themselves back from reaching their full potential.

There is a gap between the lack of education about self-love and self-esteem in upbringing, leading many women to grow up in environments that do not teach the importance of self-love. Parenting and schooling often focus more on how to be a 'good woman' by societal standards, rather than on learning to love and value oneself. For example, girls are frequently taught to please others rather than to understand and accept themselves. As a result, they grow up with low self-esteem and a constant need for external validation.

One of the key issues their community focuses on is the challenge of practicing self-love among Indonesian women. They use the online community *Rahasia Gadis* (Girls' Secret) to share their self-love struggles and seek support. When individuals face challenges like self-love issues, they often need others to confide in and gain encouragement. If someone lacks a trusted friend to talk to, their innate social needs go unmet, worsening their problems.

According to The Body Shop's survey, Indonesian women's self-love index scores 52, lower than Indonesian men's score of 54. This indicates that Indonesian women experience a greater self-love crisis than men. Moreover, Indonesian women's self-love index remains below the global standard, which uses a 0-100 scale (The Body Shop, 2021).

Based on the aforementioned data regarding the challenges faced by women, particularly Indonesian women, concerning self-love and self-esteem, collective community efforts involving both government and professional practitioners are needed to address these issues. In this regard, the Jakarta municipal government, specifically East Jakarta as a development area, has established RPTRAs as public spaces designed to facilitate personal development and creative activities for residents. RPTRA stands for *Ruang Publik Terpadu Ramah Anak* (Integrated Child-Friendly Public Space), built within residential neighbourhoods to serve local communities. These spaces are typically equipped with

facilities such as playgrounds, libraries, study areas, and more (2). Although primarily designed for children, RPTRAs also host training programs and other social activities for community members. One such RPTRA is Kayu Mas RPTRA, located in Pulo Gadung, East Jakarta. While mainly used as a play area for children, teenagers, and parents often utilize the space for socializing while supervising their children.

Several activity programs have been implemented at the RPTRA, including tree-planting initiatives, group exercise sessions, religious activities, and various skills training programs. These initiatives help engage local community members, particularly women, in positive activities. However, training programs are rarely conducted due to limited facilities and a lack of partner organizations willing to provide training. Therefore, there is a need for active involvement from academic practitioners specializing in women's empowerment to enhance women's roles and well-being across various aspects of life.

One of the primary challenges frequently faced by women is low self-love (self-appreciation) and self-esteem (self-worth). Self-love represents a positive attitude toward oneself, encompassing self-acceptance, self-respect, and treating oneself with affectionate care for personal well-being. In academic literature, self-love is commonly defined as self-appreciation and acceptance that develops through actions supporting one's physical, psychological, and spiritual growth. Khoshaba (2012) describes self-love as a state where individuals value themselves by appreciating decisions made in their spiritual, physical, and psychological development - such as accepting personal flaws and strengths, focusing on life goals, and finding satisfaction in one's efforts. Neff (2003) researched on self-compassion identifies three core components of self-love: 1) Self-kindness - Treating oneself with understanding and gentleness, especially during failures; 2) Common humanity - Recognizing that all humans share imperfections and face similar struggles; 3) Mindfulness - Observing negative emotions without exaggeration or suppression. Through cultivating self-love, women learn to reduce dependence on others' opinions or validation. They become more focused on personal happiness and achievements rather than comparing themselves to unrealistic social standards.

Furthermore, women's self-esteem deserves equal attention. Self-esteem (self-worth) refers to how individuals evaluate and value themselves based on their experiences, achievements, and how others treat them. For women, self-esteem plays a crucial role in multiple life aspects, including mental health, social relationships, and personal development. Women with high self-esteem demonstrate greater resilience in managing stress, anxiety, and depression. When a woman possesses healthy self-esteem, it strengthens her confidence in

making significant decisions regarding career, education, and personal relationships. These women typically maintain more balanced relationships, avoiding emotional dependence on partners or others for validation. They prioritize personal health and well-being rather than conforming to society's physical expectations.

Therefore, self-love (self-appreciation) and self-esteem (self-worth) - which significantly influence women's emotional, social, and economic well-being - require effective approaches for cultivation. One such approach involves utilizing art and creativity to develop self-awareness and confidence. Art plays a vital role in empowerment processes, particularly in enhancing self-expression and personal identity exploration. Shibori, a traditional Japanese fabric-dyeing technique that involves folding, binding, and dipping cloth to create unique patterns, serves as one powerful artistic medium. As a tool for women's empowerment, Shibori art functions as a means of self-reflection, a creative outlet, and an art therapy modality. This practice helps women better understand and accept themselves while developing valuable skills.

From a psychological perspective, art serves as an effective therapeutic tool for enhancing self-love and self-esteem. Seligman (2000) posits that engagement in creative activities can boost positive emotions, reduce stress, and create meaning in one's life. This aligns with Rogers (1951) self-concept theory, which maintains that self-acceptance and creativity are fundamentally interconnected in developing healthy self-esteem. Furthermore, Maslow (1943) states a hierarchy of needs theory positions self-love and self-esteem as essential psychological requirements that must be fulfilled before achieving self-actualization. In this context, practicing Shibori art can help meet these needs, as each unique pattern and color combination reflects personal self-expression and acceptance of one's individuality.

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Based on the above exposition, it is imperative to research the Effectiveness of Shibori Creative Art in Fostering Self-Love and Self-Esteem as a Form of Women's Empowerment Initiative at RPTRA Kayu Mas in East Jakarta. This study aims to demonstrate how art can contribute to enhancing women's psychological well-being through enjoyable learning experiences. Furthermore, the findings are expected to serve as a foundation for developing broader art-based empowerment programs that can generate positive impacts for women.

METHOD

The research method used was a qualitative and quantitative experimental design approach in the women's community in the Kayu Mas RPTRA, North Jakarta, during Shibori art training. Data were collected through observation, in-depth interviews, and analysis of participants' work, as well as quantitative data from pre-test and post-test experiments measuring self-love and self-esteem scales.

RESULTS AND DISCUSSION

Qualitative Results

Before participating in the Shibori creative activities, most women at RPTRA Kayu Mas demonstrated self-love and self-esteem levels that required further development. Many lacked confidence in self-expression, frequently compared their abilities to others, and had not fully recognized their creative potential. Environmental factors, including domestic role expectations and limited opportunities for personal development activities, contributed to this condition. Some participants admitted they rarely dedicated time to themselves due to family responsibilities. Furthermore, previous limited access to creative outlets had left them feeling they possessed no valuable skills. Consequently, many experienced feelings of inadequacy or hesitation to try new things. The Shibori program aims to help them: build self-confidence, develop self-appreciation, and experience a sense of achievement through their artistic creations.

Quantitative Results

The self-love assessment was conducted using a self-love measurement scale adapted from: the Self-Compassion Scale (Neff, 2003) and the Self-Love Questionnaire (Khoshaba, 2012). Psychometric Properties are reliability coefficient: $r = 0.89$, and validity Cronbach's Alpha > 0.7 . Rating Scale used Likert-type with score 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), and 4 = Strongly Agree (SA). Table 1 and Table 2 are the score range and interpretation of the self-love scale.

Table 1. Score Range of Self-Love Scale

No.	Indicator	Items
1.	Self-Kindness	1,2,3
2.	Self-Acceptance	4,5,6
3.	Self-Worth	7,8,9
4.	Self-Care	10,11,12

Table 2. Interpretation of Scoring Self-love Score

Scoring Categories	Score Range	Interpretation
Low	12–24	Frequent self-deprecating thoughts, harsh self-criticism patterns, and minimal self-care practices
Moderate	25–36	Emerging but inconsistent self-appreciation, situational self-compassion, and occasional self-care efforts
High	37–48	Consistent self-acceptance, Regular self-care routines, and a Well-established sense of self-worth

The self-esteem assessment was conducted using an adapted version of the Rosenberg Self-Esteem Scale (RSES). Psychometric properties are a reliability coefficient: $r = 0.82$, and validity, Cronbach's Alpha = 0.81. Rating Scale used Likert-type with score 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), 4 = Strongly Agree (SA). Table 3 and Table 4 are the score range and interpretation of the self-esteem scale.

Table 3. Score Range of the Self-Esteem

No.	Indicator	Items
1.	Self-Acceptance	1,2,3,4
2.	Self-Worth	5,6,7
3.	Self-Respect	8,9,10

Table 4. Interpretation of Scoring Self-Esteem Scale

Scoring Categories	Score Range	Interpretation
Low	10–20	Predominantly negative self-perception, chronic self-doubt regarding abilities, and persistent feelings of worthlessness
Moderate	21–30	Adequate but fluctuating self-worth, susceptible to external validation, and occasional situational doubts
High	31–40	Stable self-confidence, healthy acceptance of imperfections, and a consistent sense of self-value

After validating and ensuring the reliability of the measuring instrument, it was used for both the pre-test (before training) and the post-test (after training). Before conducting the pre-test and post-test, the researcher organized a Training of Trainers (TOT) for the training team, which included lecturers, students, and RPTRA managers. The TOT was held over two sessions on June 12, 2025, and June 13, 2025.

The Sibori training activities took place on July 12 and 13, 2025. Before the training began on July 12, participants completed a pre-test measuring self-love and self-esteem scales in Table 5.

Table 5. Pre-test assessment of the self-love scale and self-esteem

No.	Self-Love		Self-Esteem	
	Pre-Test Score	Categories	Pre-Test Score	Categories
1.	23	Low	19	Low
2.	22	Low	20	Low
3.	21	Low	24	Moderate
4.	26	Moderate	26	Moderate
5.	28	Moderate	27	Moderate
6.	23	Low	20	Low
7.	24	Low	18	Low
8.	30	Moderate	28	Moderate
9.	24	Low	27	Moderate
10.	21	Low	29	Low

On July 13, 2025, before the implementation of the activity, a post-test was conducted on the self-love and self-esteem scales in Table 6.

Table 6. Post-test assessment of the self-love scale and the self-esteem scale

No.	Self-Love		Self-Esteem	
	Post-Test Score	Categories	Post-Test Score	Categories
1.	25	Moderate	23	Moderate
2.	26	Moderate	25	Moderate
3.	25	Moderate	28	Moderate
4.	32	Moderate	31	High
5.	35	Moderate	30	Moderate
6.	26	Moderate	26	Moderate
7.	28	Moderate	27	Moderate
8.	37	High	35	High
9.	25	Moderate	32	High
10.	25	Moderate	34	Moderate

The Shibori creative art activity successfully enhanced the self-love and self-esteem of women at Kayu Mas RPTRA through three key mechanisms: (1) the creative process, which fostered self-expression and a sense of accomplishment; (2) the acceptance of each work's uniqueness, promoting self-acceptance; and (3) group social support, reinforcing positive validation.

Table 7 and Table 8 are the results of the Paired Samples T-Test to compare the Pre-Test and Post-Test values of the self-love scale.

Table 7. Difference between pre-test and post-test data on the self-love scale

No.	Pre-Test	Post-Test	Difference
1.	23	25	2
2.	22	26	4
3.	21	25	4
4.	26	32	6
5.	28	35	7
6.	23	26	3
7.	24	28	4
8.	30	37	7
9.	24	25	1
10	21	25	4

Results of Paired T-Test Analysis on self-love variable in Table 8

Table 8. Results of paired T-test analysis of self-love variable

Variable	M	SD	SE	T	df	P	95% CL
Pre Test	24.2	-	-	-	-		
Post Test	28.4	-	-	-	-		
Difference	4.2	1.93	0.61	6.89	9	<0.001	[2.82, 5.58]

The statistical analysis demonstrates a significant enhancement in self-love following the intervention, as indicated by the T-test results showing a calculated t-value of 6.89, which surpasses the critical T-table value of 2.262 ($p < 0.001$), leading to the rejection of the null hypothesis (H_0). Participants' self-love scores showed notable improvement, rising from a pre-

test average of 24.2 to a post-test average of 28.4, representing an average increase of 4.2 points. Moreover, the calculated effect size (Cohen's $d \approx 2.18$) confirms a very substantial intervention effect, underscoring the program's effectiveness in promoting self-love development.

Table 9 and 1Table 10 are the results of the Paired Samples T-Test to compare the Pre-Test and Post-Test values of the self-esteem scale:

Table 9. Difference between pre-test and post-test data for the self-esteem measurement *scale*

No.	Pre-Test	Post-Test	Difference
1.	19	23	4
2.	20	25	5
3.	24	28	4
4.	26	31	5
5.	27	30	3
6.	20	26	6
7.	18	27	9
8.	28	35	7
9.	27	32	5
10	29	34	5

Results of paired T-test analysis on the self-esteem variable in Table 10

Table 10. Results of paired T-test analysis on the self-esteem variable

Variable	M	SD	SE	T	df	P	95% CL
Pre Test	23.8	-	-	-	-		
Post Test	29.1	-	-	-	-		
Difference	5.3	1.70	0.54	9.81	9	<0,001	[4.08, 6.52]

The statistical analysis reveals a significant improvement in self-esteem following the intervention, as evidenced by the T-test results. With a calculated t-value of 9.81 exceeding the critical t-table value of 2.262 ($p < 0.001$), the null hypothesis (H_0) is rejected. Participants' self-esteem scores increased markedly from a pre-test average of 23.8 to a post-test average of 29.1, reflecting an average gain of 5.3 points. Furthermore, Cohen's d effect size calculation ($d \approx 3.12$) indicates a very large intervention effect, demonstrating the program's substantial impact on enhancing self-esteem.

Building Self-Love through Acceptance of Imperfection in the Creative Process

Through Shibori learning with STEAM experiments, we are able to foster deeper self-love through acceptance of imperfection. R1 (Respondent 1) reflected that, "previously I always focused on things that seemed lacking, to the point of having a feeling of dissatisfaction with myself. This transformation shows how the art aspect in STEAM is, with flexible and effective characteristics for training oneself in self-compassion and self-acceptance.

Strengthening Self-Esteem through Mastering Technical Competencies

The integration of science and technology elements in Shibori learning significantly contributes to increasing participants' self-esteem. R2 enthusiastically said, "I often feel less confident in technical matters. But through shibori, where I succeeded in understanding the chemical reaction between natural dyes and fabric, then applying it to produce the right color, through this I discovered another side of myself. This success made me feel equal to the other participants and more courageous in voicing my opinion." Mastery of scientific knowledge and technical skills provides a concrete basis for participants to build confidence in their own abilities (self-efficacy), which is a fundamental component of self-esteem.

Self-Love through Meaningful Self-Care

Shibori's creative process is confirmed to be a meaningful form of self-care and a concrete manifestation of self-love. R3 stated, "The time I spent taking part in the Shibori workshop was a gift for myself. When my hands were busy tying and dyeing fabric while creating, my mind actually calmed down. In contrast to my obligations at home, here I am doing something enjoyable for myself." This statement reveals how participation in structured STEAM activities provides a legitimate justification for women to take time for themselves, which ultimately strengthens the practice of self-love in everyday life.

Identity Transformation and Self-Worth Improvement

This shibori learning activity encourages a deep identity transformation from just a domestic role to a more complex and valuable identity. R4 shared, "So far I have only been known as an ordinary housewife. But since taking part in this activity, I have a new identity as a 'shibori maker'. When my neighbors praise me and want to learn from me, and when my family appreciates the work I make, I feel I have more value. This new identity is not just a hobby for me, but is also something I am proud of." This shift in identity shows a significant increase in self-worth, where participants no longer define their self-worth solely through domestic roles, but also through the creative and technical competencies they master.

The T-test results revealed statistically significant improvements in both self-love and self-esteem, prompting an examination of the contributing and limiting factors influencing Shibori art's effectiveness in enhancing these psychological dimensions. This analysis explores the key elements that either facilitated or hindered the intervention's success in fostering participants' self-appreciation and self-worth through the creative process.

Key Factors Supporting the Effectiveness of Shibori Training

1. Unlimited Creative Expression

The unrestricted nature of Shibori techniques (tie-dye, folding, twisting) provides a pressure-free creative outlet, eliminating concerns about "right" or "wrong" outcomes. This aligns with Kaimal (2016), who found unstructured art-making reduces self-judgment in *Art Therapy: Journal of the AATA*. Post-test results confirm enhanced self-acceptance (Low Moderate/ High), supporting Rogers (1951) states a theory on creativity and self-actualization (*Journal of Consulting Psychology*).

2. The Meditative Process

Repetitive dyeing/binding rituals induce mindfulness, reducing anxiety while boosting self-awareness – consistent with van der Venet & Serice (2012) found on art-based mindfulness in *The Arts in Psychotherapy*. Quantitative data show reduced self-criticism scores, mirroring Kabat-Zinn (2003) studies on mindfulness's therapeutic effects (*Clinical Psychology: Science and Practice*).

3. Pride in One's Creation

Each unique Shibori artwork fosters achievement and self-efficacy, especially for initially low-scoring participants (e.g., Participant 7: 18→27 points). This echoes Bandura (1997) about self-efficacy theory (*Psychological Review*) and Dweck (2006) researched on mastery experiences (*Mindset: The New Psychology of Success*).

4. Social Support System

Group-based Shibori strengthens interpersonal connectedness, critical for self-esteem (Haslam et al., 2018, *Group Processes & Intergroup Relations*). The observed social validation effects corroborate Baumeister & Leary (1995) belongingness hypothesis (*Psychological Bulletin*).

Factors Limiting Shibori's Effectiveness

1. Technical Complexity

As demonstrated by Chilton (2015), advanced techniques like Kanoko Shibori may cause beginner frustration, evidenced by participants showing limited improvement (e.g., Participant 3: 24→28 points). This aligns with Silvia (2005) found on creative barriers.

2. Self-Judgment Culture

Festinger (1954) sates about social comparison theory explains the tendency to compare artworks, as seen in Participant #10's minimal progress (29→34 points). Gilbert et al. (2006) documented how this negative bias often reduces art therapy benefits.

3. Time Constraints

Creswell (2017) researched a proved brief durations yield suboptimal therapeutic effects, contrasting with Kaimal et al (2019) found on short-term art interventions.

4. Lack of Psychological Guidance

Huss (2016) and Malchiodi (2020) emphasized the necessity of professional facilitation for artwork interpretation, without which psychological benefits often remain unrealized.

The Shibori creative art program at RPTRA Kayu Mas demonstrated significant efficacy in enhancing women's self-love and self-esteem through three primary mechanisms: (1) a creative process facilitating self-expression and achievement, (2) artwork uniqueness serving as a mirror for self-acceptance, and (3) group social support reinforcing positive validation. Paired T-tests revealed statistically significant improvements in both dimensions, with self-love increasing by 4.2 points ($t=6.89$, $p<0.001$) and self-esteem rising by 5.3 points ($t=9.81$, $p<0.001$), accompanied by large effect sizes (Cohen's $d > 2$). Critical enabling factors included expressive freedom, the meditative nature of the process, and pride in artistic creations. However, implementation challenges such as technical complexity, persistent self-judgment tendencies, and time constraints were identified as potential moderators of the intervention's effectiveness.

CONCLUSION

The results of this research show that the STEAM-based Shibori creative learning program was significantly able to increase self-love and self-esteem in participants. Based on the paired samples T-test analysis, there was a significant increase in these two variables, with values of $T_{\text{(self-love)}} = 6.89$ and $T_{\text{(self-esteem)}} = 9.81$ ($p < 0.001$), accompanied by a very large effect size (Cohen's $d > 2$). The average increase in the self-love score was 4.2 points and the self-esteem score was 5.3 points. This confirms that this program is effective in growing self-esteem. These results show that involvement in expressive, reflective and collaborative art activities can be a therapeutic means to strengthen women's psychological health, especially in the aspects of self-acceptance and self-confidence.

Qualitatively, participants reported a positive transformation in their self-perception, from viewing themselves as imperfect to embracing self-acceptance, and from a traditional domestic role to a new identity as a productive and valuable individual. Based on participant responses, the creative process in Shibori provides space for free expression without pressure, brings a sense of calm, and fosters a sense of pride in the Shibori work produced. In this case, freedom of expression, group social support, and experience of technical success are supporting factors for the success of the program. Of course, this program also presents obstacles, including the complexity of the technique, the tendency to compare oneself, time

constraints, and a lack of psychological support. Based on these things, Shibori learning not only functions as an artistic activity but also acts as an effective medium for self-empowerment to build women's self-love, self-esteem, and psychological well-being.

SUGGESTIONS

For optimal outcomes, we recommend: (1) technique modifications (e.g., simplified methods for beginners), (2) structured cognitive reflection sessions, and (3) ability-based participant grouping. The Shibori intervention successfully established a safe space for psychological growth, demonstrating that its combined creative, social, and reflective approach holds promise as an art-based intervention model. Future implementations should emphasize enhanced psychological support and technical adaptations tailored to participants' needs.

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