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# Perceived psychological safety, creative learning engagement, and creative self-efficacy among adult women in Beijing

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**Abstract.** Community visual arts classes give adult learners opportunities to experiment with materials, discuss unfinished work, and revise their ideas. This study examined how perceived psychological safety and creative learning engagement were associated with creative self-efficacy among adult women attending community-based visual arts programmes in Beijing. A cross-sectional online survey yielded 130 valid responses from women in studio classes, workshops, community courses, and museum or gallery programmes. Participants completed three adapted ten-item scales, and composite scores were analysed using Pearson correlations and multiple linear regression. Creative self-efficacy correlated positively with perceived psychological safety ($r = 0.432$) and creative learning engagement ($r = 0.624$), both $p < 0.001$. The two-predictor model accounted for 39.8% of the variance in creative self-efficacy. With both predictors in the model, the standardised coefficient was 0.559 for creative learning engagement ($p < 0.001$) and 0.113 for perceived psychological safety ($p = 0.182$). Women who reported more active and sustained involvement in visual arts learning also reported greater confidence in handling creative tasks.

**Keywords:** perceived psychological safety, creative learning engagement, creative self-efficacy, adult women, community visual arts education

## 1. Introduction

An unfinished artwork gives an adult learner something concrete to discuss. She can explain how she arrived at a composition, ask why a technique produced an unexpected result, or test a suggestion before showing the work again. In accounts of community-based visual arts practice, this movement between making and reflection forms part of how adults learn [1]. It also illustrates the experiential learning cycle, in which learners use reflection on an experience to inform a subsequent attempt [2].

Studio classes, community art courses, workshops, and museum or gallery programmes offer different ways to take part in visual arts learning in Beijing. They share occasions on which learners discuss work and act on feedback. On such occasions, comfort in speaking up and involvement in the task are closely situated experiences. The present study examines how these two experiences relate to creative self-efficacy among the adult women enrolled in these programmes.

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### 1.1. Creative self-efficacy in visual arts learning

Self-efficacy theory concerns how individuals judge their capability to carry out a task and how that judgment relates to effort and persistence [3]. Creative self-efficacy applies this idea to tasks that require the generation or development of creative ideas [4]. In visual arts learning, the judgment has a concrete object. A learner may assess her ability to devise an idea for a piece, work through a problem that arises in making it, or propose a different way to achieve the intended result.

Mastery experiences, observation of others, and encouragement are sources of efficacy beliefs in Bandura's account [3]. A learner can draw on each when working on a visual arts task. For example, she might observe another learner's use of a material, attempt a related technique, and judge what she can do from the result. The opportunity to attempt the task and reflect on the outcome connects this account of self-efficacy with experiential learning [2]. The study uses learners' reports of their confidence across creative tasks as the outcome.

### 1.2. Perceived psychological safety and creative learning engagement

Psychological safety concerns the interpersonal risk involved in asking for help, raising a concern, or admitting uncertainty in a group [5, 6]. The present study measures each learner's perception of that risk in her own class. A learner deciding whether to ask an elementary question or share a trial version of a piece is making a judgment about how others may respond. Research in online design thinking and authentic assessment describes related situations in which learners work with uncertainty and expose their work to feedback [7, 8]. A community visual arts class places these decisions in the context of making and discussing artwork.

Engagement concerns learners' involvement in the activity they are undertaking [9, 10]. Its behavioural aspect includes taking part in discussion and practice. Its cognitive aspect includes paying attention, formulating questions, and returning to a point that was difficult to understand. The affective aspect includes interest in the task and feelings about one's progress. Together these dimensions describe how learners participate in visual arts learning. In this study they were represented by a single creative learning engagement score.

The two constructs capture different parts of the same learning experience. Examining both distinguishes each bivariate association with creative self-efficacy from the coefficient estimated with the other predictor held constant.

### 1.3. Research questions and hypotheses

The study describes the distributions of the three scale scores among adult women attending community visual arts programmes in Beijing. In the bivariate hypotheses, perceived psychological safety and creative self-efficacy are positively correlated (H1), and creative learning engagement and creative self-efficacy are positively correlated (H2). The third hypothesis (H3) concerns whether a model containing both predictors accounts for variance in creative self-efficacy. Figure 1 shows the predictors and outcome in the study framework.

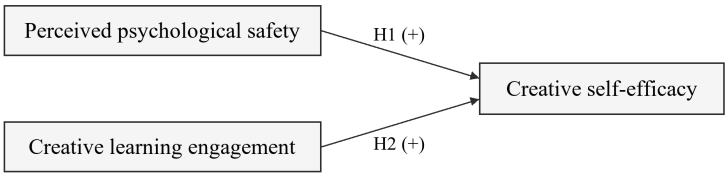


**Figure 1.** Hypothesised relationships among the study constructs

# 2. Methods

## 2.1. Study design and participants

The study used a cross-sectional correlational survey. Women were eligible if they were aged 18 or above, lived in Beijing, and were currently taking part in community-based visual arts education. Eligible forms of learning included a short workshop as well as regular classes and museum or gallery programmes. Recruitment combined purposive and convenience sampling. Educators and programme organisers circulated the survey link, and it was also distributed through online communities for adult learners of visual arts.

The analysis included 130 valid responses. The background section recorded age group, participation duration, attendance frequency, and the form of visual arts learning the respondent attended most often.

## 2.2. Questionnaire measures

The questionnaire used three ten-item scales. Each item was rated from 1 (strongly disagree) to 5 (strongly agree). The items in the Perceived Psychological Safety scale (PPS) were adapted from Edmondson's work on group psychological safety [5]. They addressed the learner's experience of speaking and seeking support in her visual arts class. The items covered discussing difficult issues, asking for help, expressing disagreement, and acknowledging a lack of understanding. Items 1, 3, and 5 concerned reactions to mistakes, rejection for being different, and difficulty asking for help, respectively. These three items were reverse-scored.

The Creative Learning Engagement scale (CLE) drew on the Classroom Engagement Inventory [11]. The behavioural content included taking part in class discussion and becoming actively involved in art activities. The cognitive content covered listening attentively, formulating questions, reviewing difficult material, and working out where an error occurred. The affective content included interest, excitement, and pride in learning. One item asked respondents to assess the quality of their own ideas or artwork during class. These experiences contributed to the total engagement score.

The Creative Self-Efficacy scale (CSE) drew on the creative self-efficacy items of the Short Scale of Creative Self [12]. The first six items covered beliefs about solving difficult problems, having confidence in one's creative ability, using imagination, coping with challenges, thinking creatively, and offering original solutions. Four items situated these beliefs in visual arts learning. They asked about carrying out different arts tasks creatively, pursuing learning goals in creative ways, developing new ideas during activities, and generating ideas for visual arts projects.

A bilingual researcher translated the items into Chinese, and a second bilingual expert translated them back into English. Discrepancies were discussed to align the meanings. Specialists in visual arts education and educational psychology reviewed the questionnaire for clarity, relevance, and language suitability. Within each scale, the item scores were averaged after reverse-scoring where applicable. Higher scores indicated greater perceived safety, stronger engagement, or stronger creative self-efficacy.

### 2.3. Survey procedure and internal consistency

The survey began with an information sheet and an online consent statement. Respondents completed the questionnaire themselves after giving consent. Participation was voluntary, and respondents could stop at any time. Any optional contact information was stored separately from answers, and access to the data was restricted. Incomplete and invalid records, including obvious patterned responses, were excluded in screening.

The first 30 valid responses were used to check clarity and estimate preliminary internal consistency. The same questionnaire was used for the remaining data collection, and the 30 responses were included in the final sample. Table 1 presents the item sources and internal consistency estimates. Cronbach's $\alpha$ ranged from 0.786 to 0.965 across the three scales in the initial set and from 0.805 to 0.903 in the full sample.

**Table 1.** Questionnaire sources and internal consistency estimates

| Scale | Source | Items | Initial $\alpha$ | Full-sample $\alpha$ |
|---|---|---|---|---|
| PPS | Edmondson's psychological safety scale [5] | 10 | 0.786 | 0.805 |
| CLE | Classroom Engagement Inventory [11] | 10 | 0.957 | 0.873 |
| CSE | Short Scale of Creative Self [12] | 10 | 0.965 | 0.903 |

Note: $\alpha$ = Cronbach's alpha. The initial set included 30 responses and the full sample included 130.

### 2.4. Statistical analysis

An a priori G*Power calculation for a multiple regression with two predictors estimated a minimum of 68 participants, using an assumed effect size of $f^2 = 0.15$, a significance level of 0.05, and a target power of 0.80 [13]. Analyses were conducted in SPSS. Frequency distributions described participants' backgrounds and participation patterns. Mean, standard deviation, range, skewness, and kurtosis described the three composite scores. Cronbach's $\alpha$ was calculated separately for each scale. Pearson correlations estimated the direction and strength of the bivariate relationships. All correlation tests were two-tailed.

In the multiple linear regression, CSE was the outcome and PPS and CLE entered the model simultaneously. The model F test addressed H3. The unstandardised coefficients gave the expected difference in CSE score for a one-point difference in the predictor at the same value of the other predictor. The standardised coefficients put the two estimates on a common scale. Residual diagnostics and collinearity checks were used to examine model assumptions, with the Durbin–Watson statistic and the tolerance and Variance Inflation Factor (VIF) recorded in the output. The significance threshold was $p < 0.05$.

## 3. Results

### 3.1. Sample and participation profile

The 130 respondents were attending visual arts learning activities when they completed the survey. Studio classes were the most frequently reported setting, followed by museum or gallery programmes, community art courses, and workshops (Table 2). The two youngest questionnaire categories contained 105 respondents, or 80.8% of the sample. Among the reported durations of participation, three to six months was the largest group (45 women, 34.6%).

**Table 2.** Participant characteristics and visual arts learning experience

| Age and Duration | *n* | % | Attendance and Setting | *n* | % |
|---|---|---|---|---|---|
| Age group | | | Attendance frequency | | |
| 18–24 years | 41 | 31.5 | Less than once a month | 17 | 13.1 |
| 24–35 years | 64 | 49.2 | 1–3 times a month | 50 | 38.5 |
| 35–44 years | 17 | 13.1 | Once a week | 45 | 34.6 |
| 45–54 years | 6 | 4.6 | 2–3 times a week | 12 | 9.2 |
| 55 years or older | 2 | 1.5 | More than 3 times a week | 6 | 4.6 |
| Participation duration | | | Main learning setting | | |
| Less than 3 months | 35 | 26.9 | Community art course | 28 | 21.5 |
| 3–6 months | 45 | 34.6 | Studio class | 45 | 34.6 |
| 7–12 months | 25 | 19.2 | Workshop | 25 | 19.2 |
| 1–2 years | 14 | 10.8 | Museum or gallery programme | 30 | 23.1 |
| More than 2 years | 11 | 8.5 | Other | 2 | 1.5 |

Note: $N = 130$. Age and duration use the category labels from the questionnaire. Percentages are rounded to one decimal place.

The reported duration extended from less than three months to more than two years. Twenty-five respondents reported one year of participation or longer. Ninety-five women reported either weekly attendance or attendance one to three times a month. These distributions describe the mixture of recent and longer-term learners whose responses were included in the same analysis.

## 3.2. Distribution of scale scores

Mean scores were above 4.00 for all three measures on the five-point scale. CLE had the highest mean and the smallest standard deviation (M = 4.27, SD = 0.50), followed by CSE (M = 4.14, SD = 0.55) and PPS (M = 4.02, SD = 0.62). Each scale included an observed score of 5.00. PPS covered the broadest observed range, from 2.40 to 5.00 (Table 3).

The three distributions had negative skewness. The estimate was larger in magnitude for CLE (−0.92) than for CSE (−0.78) and PPS (−0.65). With means around the response option "agree", these distributions place most of the observed variation within the upper part of the scoring range.

**Table 3.** Distributions of the three composite scores

| Measure | Mean | SD | Min. | Max. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| PPS | 4.02 | 0.62 | 2.40 | 5.00 | −0.65 | −0.28 |
| CLE | 4.27 | 0.50 | 2.90 | 5.00 | −0.92 | 0.81 |
| CSE | 4.14 | 0.55 | 2.70 | 5.00 | −0.78 | 0.24 |

Note: Each scale was scored from 1 to 5. $N = 130$.

## 3.3. Bivariate relationships

PPS was positively correlated with CSE ($r = 0.432$, $p < 0.001$), supporting H1. CLE was also positively correlated with CSE ($r = 0.624$, $p < 0.001$), supporting H2. The correlation with CSE was numerically larger

for CLE. Women who rated their participation, attention, and interest more highly tended to report stronger confidence in handling creative tasks.

The two predictors also correlated positively with one another ($r = 0.572$, $p < 0.001$). Thus favourable perceptions of classroom interpersonal conditions and stronger engagement tended to occur together in the respondents' reports. Table 4 gives the complete correlation matrix used to place the coefficients from the joint model in context.

**Table 4.** Pearson correlations among psychological safety, engagement, and creative self-efficacy

| Measure | PPS | CLE | CSE |
|---|---|---|---|
| PPS | — | | |
| CLE | 0.572 | — | |
| CSE | 0.432 | 0.624 | — |

Note: $N = 130$. All two-tailed $p$ values are below 0.001.

## 3.4. Joint regression model

The model with PPS and CLE accounted for 39.8% of the sample variance in CSE ($R^2 = 0.398$, adjusted $R^2 = 0.388$). Its F statistic was 41.898 on 2 and 127 degrees of freedom ($p < 0.001$), supporting H3 at the model level. The residual standard error was 0.427 scale points, and the Durbin–Watson statistic was 2.193 (Table 5).

**Table 5.** Model fit for the regression of creative self-efficacy

| $R$ | $R^2$ | Adjusted $R^2$ | Residual SE | $F(2, 127)$ | $p$ | Durbin–Watson |
|---|---|---|---|---|---|---|
| 0.630 | 0.398 | 0.388 | 0.427 | 41.898 | < 0.001 | 2.193 |

Note: The outcome was creative self-efficacy. Predictors were perceived psychological safety and creative learning engagement.

With PPS held constant, a one-point higher CLE score corresponded to an estimated 0.610-point higher CSE score (SE = 0.092, $\beta = 0.559$, $p < 0.001$). With CLE held constant, the coefficient for a one-point difference in PPS was 0.099 (SE = 0.074, $\beta = 0.113$, $p = 0.182$). The standardised coefficient for CLE was the larger of the two estimates in this model. Both predictors had a tolerance of 0.673 and a VIF of 1.485. Table 6 provides the coefficient estimates and their tests.

**Table 6.** Coefficients for the multiple linear regression of creative self-efficacy

| Predictor | $B$ | $SE$ | $\beta$ | $t$ | $p$ | Tolerance | VIF |
|---|---|---|---|---|---|---|---|
| Intercept | 1.137 | 0.331 | — | 3.440 | 0.001 | — | — |
| PPS | 0.099 | 0.074 | 0.113 | 1.343 | 0.182 | 0.673 | 1.485 |
| CLE | 0.610 | 0.092 | 0.559 | 6.663 | < 0.001 | 0.673 | 1.485 |

Note: $B$ = unstandardised coefficient, $SE$ = standard error, $\beta$ = standardised coefficient, VIF = variance inflation factor.

# 4. Discussion

## 4.1. Engagement and confidence in creative tasks

Creative learning engagement was positively associated with creative self-efficacy in both analyses. This finding concerns involvement in particular acts of learning. A respondent could report that she paid attention during class, returned to something she had misunderstood, and tried to identify why a mistake occurred. Each act offers information about the task and about what she can accomplish. In self-efficacy theory, information from mastery experiences is one basis on which learners judge their capabilities [3]. The association observed here links those judgments with self-reported involvement in the work of visual arts learning.

The act of judging one's own idea or artwork is especially relevant to the relationship. A learner who evaluates a draft has an opportunity to identify what she is satisfied with and where she wants to revise it. This sequence corresponds to the place of reflection and subsequent experimentation in experiential learning [2]. The engagement score combines such reflective activities with interest and participation. The estimate therefore characterises their combined pattern in the questionnaire. The creative self-efficacy items about producing ideas and accomplishing visual arts tasks give the outcome a related task context.

Existing creative self-efficacy measures differ in the breadth and specificity of the tasks that respondents are asked to consider [14, 15]. The adaptation used here combines items about broad confidence in handling creative problems with items that name visual arts activities. In interpreting the association, this combination locates the outcome in the respondents' judgments of their creative capabilities, including their confidence in the learning activities they were pursuing.

## 4.2. Psychological safety and the joint model

The bivariate result for psychological safety describes how creative confidence varies with perceptions such as being able to discuss a difficulty or ask others for help. A class discussion of an unfinished work can involve both a creative judgment and a decision to reveal uncertainty to the group. Work on team learning and on design thinking treats the willingness to speak in such circumstances as part of a psychologically safe setting [5-7]. The present correlations extend this question to adult women's own accounts of community visual arts learning.

The joint model uses a different comparison. Its coefficient for psychological safety describes differences in CSE between respondents with similar engagement scores and different PPS scores. When PPS is examined alone its correlation with CSE includes the variation in PPS that coincides with engagement. That overlap is relevant here because the PPS and CLE scores were positively correlated. Reporting the bivariate estimate together with the regression coefficient shows how these two questions yield different descriptions of the same sample. The $p$ value of 0.182 places the PPS coefficient above the study's threshold for a separate association in the joint model.

Within the social learning account behind the study, an appraisal of the learning setting and a judgment of creative capability refer to different parts of an activity. For instance, feeling able to ask a question describes the interpersonal conditions under which a learner can voice difficulty. Reviewing that difficulty and deciding how to continue describe her reported engagement. Confidence that she can resolve a similar problem describes the efficacy judgment. Considering the three separately clarifies why the questionnaire elicited both accounts of class participation and assessments of personal capability.

### 4.3. Interpretation in community visual arts education

The sample included learners attending regularly as well as respondents reporting shorter or less frequent participation. The measures referred to their current visual arts learning, giving those participants a shared frame for answering. Their reported creative confidence accompanied engagement across the combined sample of learning settings. This pooled pattern describes the women surveyed across studios, community classes, workshops, and museum or gallery programmes.

The data provide a cross-sectional view of perceived safety, creative learning engagement, and creative self-efficacy. They place particular emphasis on what learners report doing with the opportunities a course affords. Asking for clarification and reflecting on what produced a result refer to observable moments in the learning process. The study connects reports of such moments with the confidence learners report in approaching creative work.

## 5. Conclusion

Among 130 adult women attending community-based visual arts programmes in Beijing, creative self-efficacy was positively correlated with perceived psychological safety and with creative learning engagement. Engagement also showed a positive coefficient with perceived safety held constant. The two-predictor model explained 39.8% of the variance in the self-efficacy scores. The observed pattern links confidence in creative tasks to how actively learners report participating, reflecting, and working through problems in visual arts learning.

## References

[1] Dickson, N. (2025). Engaging the 'wounded' adult learner: Lessons learnt from critically reflective, community-based, visual arts practice. In *Research Handbook on Adult Learning and Education* (pp. 179–190). Edward Elgar Publishing. Cheltenham.https://doi.org/10.4337/9781800886667.00024

[2] Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall. Englewood Cliffs, NJ.

[3] Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

[4] Tierney, P. & Farmer, S. M. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management Journal, 45*(6), 1137–1148. https://doi.org/10.5465/3069429

[5] Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly, 44*(2), 350–383. https://doi.org/10.2307/2666999

[6] Edmondson, A. C., & Bransby, D. P. (2023). Psychological safety comes of age: Observed themes in an established literature. *Annual Review of Organizational Psychology and Organizational Behavior, 10*, 55–78. https://doi.org/10.1146/annurev-orgpsych-120920-055217

[7] Moffett, J., Little, R., Illing, J., de Carvalho Filho, M. A., & Bok, H. (2024). Establishing psychological safety in online design-thinking education: A qualitative study. *Learning Environments Research, 27*, 179–197. https://doi.org/10.1007/s10984-023-09474-w

[8] Wake, S., Pownall, M., Harris, R., & Birtill, P. (2024). Balancing pedagogical innovation with psychological safety? Student perceptions of authentic assessment. *Assessment & Evaluation in Higher Education, 49*(4), 511–522. https://doi.org/10.1080/02602938.2023.2275519

[9] Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools, 45*(5), 369–386.

https://doi.org/10.1002/pits.20303

[10] Wong, Z. Y., & Liem, G. A. D. (2022). Student engagement: Current state of the construct, conceptual refinement, and future research directions. *Educational Psychology Review, 34*, 107–138. https://doi.org/10.1007/s10648-021-09628-3

[11] Wang, Z., Bergin, C., & Bergin, D. A. (2014). Measuring engagement in fourth to twelfth grade classrooms: The classroom engagement inventory. *School Psychology Quarterly, 29*(4), 517–535. https://doi.org/10.1037/spq0000050

[12] Karwowski, M., Lebuda, I., & Wiśniewska, E. (2018). Measuring creative self-efficacy and creative personal identity. *The International Journal of Creativity & Problem Solving, 28*(1), 45–57.

[13] Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

[14] Lamb, K. N., Boedeker, P., & Kettler, T. (2025). Measuring creative self-efficacy: Instrument development and validation. *Thinking Skills and Creativity, 56*, 101738. https://doi.org/10.1016/j.tsc.2024.101738

[15] Zielińska, A., Lebuda, I., & Karwowski, M. (2022). Scaling the creative self: An item response theory analysis of the short scale of creative self. *Creativity Research Journal, 34*(4), 431–444. https://doi.org/10.1080/10400419.2022.2123139