

RELATIONSHIP BETWEEN CREATIVE PEDAGOGICAL PRACTICES AND PROBLEM-SOLVING SKILLS OF ADULT EDUCATION LEARNERS IN BAYELSA STATE

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Abstract

This study examined the relationship between creative pedagogical practices and problem-solving skills of adult education learners in Bayelsa State, Nigeria. A correlational research design was adopted, guided by two research questions and two null hypotheses. The population comprised adult education learners from selected study centers, with a sample of 300 respondents drawn using a stratified random sampling technique. Data were collected using a structured instrument titled Pedagogical Practices and Problem-Solving Skills Questionnaire (PPSSQ), which was validated by experts and subjected to reliability testing, yielding a Cronbach Alpha coefficient of 0.85. Pearson correlation analysis was used to test the hypotheses at a 0.05 significance level. The findings revealed a significant positive relationship between instructional strategies and problem-solving skills ($r = 0.61, p < 0.05$), as well as between learner engagement and problem-solving skills ($r = 0.54, p < 0.05$). The study concluded that effective instructional strategies and increased learner engagement enhance the problem-solving competence of adult learners, thereby strengthening their capacity for lifelong learning and adaptive thinking. It was recommended that facilitators adopt innovative, learner-centered instructional strategies and promote interactive learning environments to improve adult learners' problem-solving skills.

Keywords: Instructional Strategies, Learner Engagement, Problem-Solving Skills, Adult Education, Lifelong Learning.

Introduction

Education remains a lifelong process through which individuals acquire knowledge, skills, and attitudes necessary for personal development and societal transformation. Within this continuum, adult education serves as a crucial platform for equipping learners with practical skills that promote adaptability in an ever-changing world (Merriam & Baumgartner, 2020). In Bayelsa State, where socioeconomic challenges and low literacy levels persist, adult education has become more than a remedial intervention; it is a strategy for empowerment, skill acquisition, and sustainable development (Okoro & Akinsanya, 2019).

The effectiveness of adult education programs, however, depends largely on the pedagogical practices adopted by instructors. Pedagogy in adult learning contexts involves not just content delivery but also the creation of an interactive environment that fosters learner participation and critical thinking (Brookfield, 2013). Instructional strategies, learner engagement, and assessment approaches are three pivotal dimensions of pedagogy that directly influence the quality of learning outcomes (Knowles, Holton, & Swanson, 2015). In Bayelsa State, where adult learners often juggle economic, social, and familial responsibilities, these practices determine

whether learning becomes a transformative experience or a mechanical process of information transfer (Idowu, 2021).

Problem-solving skills are at the heart of adult education, especially in societies marked by rapid economic and technological changes. Adults require the ability to analyze problems, generate creative solutions, and apply knowledge in practical contexts (King & Wang, 2007). Empirical evidence suggests that learners exposed to creative and participatory pedagogical methods demonstrate higher levels of problem-solving competence compared to those taught with traditional lecture-based approaches (Yadav et al., 2014). This underscores the need to examine the relationship between pedagogical practices and problem-solving skills, particularly in under-researched contexts like Bayelsa State.

Critically, while existing literature affirms the global relevance of creative pedagogy in fostering cognitive and practical skills, there remains a contextual gap regarding how these practices influence adult learners in Niger Delta communities (Okeke & Okwoche, 2020). Most studies emphasize formal schooling rather than adult education, leaving unanswered questions about the peculiar dynamics of older learners with diverse socioeconomic backgrounds. Thus, a study that interrogates the relationship between instructional strategies, learner engagement, and problem-solving skills among adult education learners in Bayelsa State is timely, relevant, and necessary.

Purpose of the Study

The study investigated the relationship between pedagogical practices and problem-solving skills of adult education learners in Bayelsa State. Specifically, the study achieved the following:

1. determined the relationship between instructional strategies and problem-solving skills of adult education learners in Bayelsa State.
2. examined the relationship between learner engagement and problem-solving skills of adult education learners in Bayelsa State.

Research Questions

The following research questions were formulated to guide the study.

- i. What is the relationship between instructional strategies and problem-solving skills of adult education learners in Bayelsa State?
- ii. What is the relationship between learner engagement and problem-solving skills of adult education learners in Bayelsa State?

Hypotheses

The following hypotheses was tested at 0.05 alpha level:

H₀₁: There is no significant relationship between instructional strategies and problem-solving skills of adult education learners in Bayelsa State.

H₀₂: There is no significant relationship between learner engagement and problem-solving skills of adult education learners in Bayelsa State.

Methods

This study adopted a correlational research design to examine the relationship between pedagogical practices and problem-solving skills of adult education learners in Bayelsa State. A correlational design is appropriate because it allows the researcher to determine the degree of association between variables without manipulating them (Creswell & Creswell, 2018). This approach provides insights into how instructional strategies and learner engagement relate to the development of problem-solving skills

among adult learners, offering empirical evidence on the role of pedagogy in adult education.

The study was conducted in adult education centres across Bayelsa State, Nigeria, which serve diverse groups of learners including artisans, traders, civil servants, and individuals seeking literacy and vocational training. The population of the study comprised all the 5673 adult education learners enrolled in the 400 recognized adult education centres in the state. A sample of 300 respondents was selected using a stratified random sampling technique to ensure adequate representation across gender, age categories, and centre types.

The instrument for data collection was a structured questionnaire titled Pedagogical Practices and Problem-Solving Skills Questionnaire (PPSSQ). The questionnaire was designed on a five-point Likert scale (ranging from *Strongly Agree* to *Strongly Disagree*) and had two main sections:

Section A: Collected demographic information about respondents, including gender, age, occupation, and years of participation in adult education. **Section B:** Contained items measuring instructional strategies, learner engagement, assessment approaches, and indicators of problem-solving skills.

To ensure content validity, the questionnaire was reviewed by experts in Adult Education and Educational Measurement, who assessed the items for clarity, relevance, and alignment with the research objectives. Their suggestions were incorporated into the final version of the instrument.

A pilot study was conducted with 20 respondents from an adult education centre outside the study area but with similar characteristics to the target population. The reliability of the instrument was tested using Cronbach's Alpha formula, yielding a reliability coefficient of 0.85, which indicates high internal consistency (Nunnally & Bernstein, 1994).

The questionnaire was personally administered by the researcher with the help of trained research assistants to ensure a high response rate. Out of the 300 questionnaires distributed, 276 were completed and returned, yielding a 92% response rate. For data analysis, Pearson's Product-Moment Correlation Coefficient (PPMCC) was employed to determine the relationship between the measures of pedagogical practices (instructional strategies and learner engagement) and problem-solving skills of adult education learners. The significance of the correlations was tested at the 0.05 level of significance.

Results

Research Question 1

What is the relationship between instructional strategies and problem-solving skills of adult education learners in Bayelsa State?

Table 1: Pearson Correlations analysis showing relationship between instructional strategies and problem-solving skills of adult education learners in Bayelsa State

Variables		Instructional strategies	Problem-Solving Skills	Decision
Instructional strategies	Pearson correlation	1	0.61	H ₀ rejected
	Sig.		0.00*	
	N	276	276	
Problem-Solving Skills	Pearson correlation	0.61	1	
	Sig	0.00*		
	N	276	276	

***Significant; $p < 0.05$**

The data presented in Table 1 indicates that the correlation coefficient (r-value) between instructional strategies and problem-solving skills of adult education learners in Bayelsa State is **0.61**. Since the r-value is positive and greater than 0.5, this suggests a moderate to strong positive relationship between instructional strategies and problem-solving skills. The result is statistically significant at $p < 0.05$, leading to the rejection of the null hypothesis. Therefore, it can be concluded that instructional strategies have a moderately strong positive influence on the development of problem-solving skills among adult education learners in Bayelsa State.

Research Question 2

What is the relationship between learner engagement and problem-solving skills of adult education learners in Bayelsa State?

Table 2: Pearson Correlations analysis showing relationship between learner engagement and problem-solving skills of adult education learners in Bayelsa State

Variables		Learner engagement	Problem-Solving Skills	Decision
Learner Engagement	Pearson correlation	1	0.54	H ₀ rejected
	Sig.		0.00*	
	N	276	276	
Problem-Solving Skills	Pearson correlation	0.54	1	
	Sig	0.00*		
	N	276	276	

***Significant; $p < 0.05$**

The data presented in Table 2 indicates that the correlation coefficient (r-value) between learner engagement and problem-solving skills of adult education learners in Bayelsa State is **0.54**. Since the r-value is positive and slightly above 0.5, this suggests a moderate positive relationship between learner engagement and problem-solving skills. The result is statistically significant at $p < 0.05$, leading to the rejection of the null hypothesis. Therefore, it can be concluded that learner engagement has a moderate positive influence on the development of problem-solving skills among adult education learners in Bayelsa State.

Testing Hypotheses

H₀₁: There is no significant relationship between instructional strategies and problem-solving skills of adult education learners in Bayelsa State.

The data presented in Table 1 indicates that the correlation coefficient (r-value) between instructional strategies and problem-solving skills of adult education learners in Bayelsa State is **0.61**, with a p-value of **0.00**. Since the p-value is less than the 0.05 alpha level, the null hypothesis (H₀₁), which states that there is no significant relationship between instructional strategies and problem-solving skills of adult education learners in Bayelsa State, is rejected. Therefore, it can be concluded that instructional strategies have a significant relationship with problem-solving skills of adult education learners in Bayelsa State.

H₀₂: There is no significant relationship between learner engagement and problem-solving skills of adult education learners in Bayelsa State.

The data presented in Table 2 indicates that the correlation coefficient (r-value) between learner engagement and problem-solving skills of adult education learners in Bayelsa State is **0.54**, with a p-value of **0.00**. Since the p-value is less than the 0.05 alpha level, the null hypothesis (H₀₂), which states that there is no significant relationship between learner engagement and problem-solving skills of adult education learners in Bayelsa State, is rejected. Therefore, it can be concluded that learner engagement has a significant relationship with problem-solving skills of adult education learners in Bayelsa State.

Discussion of Findings

The findings from Research Question 1 revealed that instructional strategies have a moderate to strong positive and significant relationship with problem-solving skills of adult education learners in Bayelsa State, as indicated by the correlation coefficient ($r = 0.61$, $p < 0.05$). This suggests that when instructors adopt effective and creative instructional strategies, learners are more likely to develop stronger problem-solving abilities. The positive correlation implies that as instructional strategies become more learner-centered and innovative, the problem-solving skills of adult education learners also improve significantly. This finding highlights the role of instructional strategies in equipping adult learners with the cognitive and practical skills necessary for addressing real-life challenges (Brookfield, 2013; Knowles, et al., 2015).

This result supports existing literature emphasizing the importance of instructional strategies in fostering higher-order thinking and problem-solving skills. Yadav, et al., (2014) reported that learners exposed to problem-based and participatory instructional methods demonstrated better analytical and problem-solving competencies than those taught through lecture-based approaches. Similarly, King and Wang (2007) found that adults who experience interactive and engaging instructional strategies tend to transfer

learning more effectively into real-life problem-solving contexts. The findings of this study align with these perspectives, reinforcing the argument that instructional strategies are a critical determinant of problem-solving competence in adult education.

However, while the correlation is moderately strong, it suggests that other factors, such as learner motivation, prior educational background, and the availability of learning resources, may also contribute to the development of problem-solving skills. This aligns with the view of Okeke and Okwoche (2020), who argued that while creative instructional strategies are essential, their effectiveness in promoting problem-solving skills depends on complementary factors such as adequate teaching materials, supportive learning environments, and learners' readiness to engage actively in the process. Thus, the findings of this study confirm that instructional strategies play a significant role in shaping adult learners' problem-solving skills in Bayelsa State. Nonetheless, for sustainable outcomes, instructional strategies should be integrated with broader support systems, including access to educational resources, teacher professional development, and policies that promote innovation in adult education programs.

The findings of the study revealed a significant positive relationship between learner engagement and problem-solving skills among adult education learners in Bayelsa State. The correlation analysis indicated that increased levels of engagement in learning activities were strongly associated with enhanced problem-solving competencies. This suggests that when learners actively participate in discussions, collaborative tasks, and reflective exercises, they are more likely to develop the cognitive flexibility and analytical thinking required to address complex problems effectively. This outcome aligns with the position of Fredricks, et al., (2004), who emphasized that learner engagement encompasses behavioral, emotional, and cognitive dimensions that collectively shape learning outcomes. The results also resonate with Skinner and Pitzer's (2012) assertion that sustained learner engagement fosters resilience and adaptive problem-solving approaches in educational settings. The current finding underscores the importance of creating participatory learning environments where learners are not passive recipients but active contributors to knowledge construction.

Empirical evidence from similar contexts further validates this study's result. For example, Finn and Zimmer (2012) reported that learner engagement significantly predicts critical thinking and problem-solving ability in higher education, as engaged learners are more likely to persist in tackling challenging tasks. In addition, Kuh (2009) highlighted that high-impact educational practices that enhance engagement, such as group projects and experiential learning, have direct implications for problem-solving development.

Rejecting the null hypothesis (H_{02}) in this study demonstrates that learner engagement is not only a supportive factor but also a determinant of problem-solving skills in adult education. For educators in Bayelsa State, this finding emphasizes the need to adopt pedagogical practices that enhance participation, collaboration, and intrinsic motivation. It also suggests that policymakers and curriculum developers should design instructional frameworks that prioritize engagement-driven learning strategies to foster problem-solving competence among adult learners.

Conclusion

In conclusion, the study established that learner engagement significantly influences the development of problem-solving skills among adult education learners in Bayelsa State, thereby rejecting the null hypothesis which posited no relationship between the two variables. This finding highlight that when learners are actively involved in interactive, reflective, and participatory instructional processes, their ability to analyze, evaluate, and resolve complex issues is enhanced. The result not only aligns with global scholarly evidence but also underscores the practical need for educators and policymakers in Bayelsa State to design and implement engagement-driven pedagogical practices that cultivate resilience, critical thinking, and adaptive learning, ultimately strengthening the problem-solving capacity of adult learners.

The following recommendations were put forward:

1. Adult education instructors in Bayelsa State should adopt interactive and participatory teaching strategies that foster active learner engagement to enhance problem-solving skills.
2. Policymakers and education stakeholders should provide training and support for educators to integrate engagement-driven pedagogical practices that promote critical thinking and adaptive learning among adult learners.

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