

Predictors of Adult Learning Outcomes Among Teacher Education Students in Philippine Local College

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Abstract

This study examined the predictive influence of functional literacy and community engagement on adult learning outcomes among teacher education students at Trece Martires City College. Anchored on John Dewey's Theory of Education and Democracy and Robert Putnam's Social Capital Theory, the study investigated how these variables contribute to the cognitive, psychomotor, and affective domains of adult learning. A quantitative descriptive-correlational research design was employed involving 433 teacher education students selected through convenience sampling. Data were collected using a researcher-developed questionnaire that underwent content validation and reliability testing. Weighted mean, standard deviation, Pearson Product-Moment Correlation, and Multiple Linear Regression Analysis were used to analyze the data. The findings revealed that the respondents demonstrated proficient functional literacy, a great extent of community engagement, and positive adult learning outcomes, with affective outcomes receiving the highest ratings. Functional literacy exhibited a strong positive and statistically significant relationship with adult learning outcomes, while community engagement showed a moderate positive and statistically significant relationship. Regression analysis further established that both variables significantly predicted adult learning outcomes, with functional literacy emerging as the strongest predictor. The study also identified opportunities to strengthen higher-level communication skills, applied numeracy, leadership, and active participation in community organizations. Based on these findings, the study proposed the Civic-Pedagogical Integration Program (CPIP) to enhance communicative competence, applied numeracy, leadership, and community engagement among teacher education students. The study concludes that strengthening functional literacy together with meaningful community engagement can improve the professional preparation and lifelong learning of future educators. The study supports Sustainable Development Goal (SDG) 4: Quality Education, SDG 11: Sustainable Cities and Communities, and SDG 17: Partnerships for the Goals by promoting quality education, community participation, and collaborative educational initiatives. Its findings contribute to educational, institutional, and community sustainability by supporting evidence-based curriculum enhancement and community-based learning.

Keywords: Adult Learning Outcomes, Community Engagement, Functional Literacy, Higher Education, Teacher Education Students, Trece Martires City College

1. Introduction

Functional literacy and community engagement are essential components of adult learning, particularly among teacher education students who are expected to apply academic knowledge in professional and community settings. Although literacy rates remain relatively high, concerns persist regarding learners' ability to utilize knowledge and skills in addressing real-world challenges. This study examines how functional literacy and community engagement predict adult learning outcomes among teacher education students at Trece Martires City College. Grounded in contemporary literature and established theoretical perspectives, the study emphasizes the importance of practical literacy, civic participation, and experiential learning in developing competent future educators. By examining these variables within the local context, the study seeks to generate empirical evidence that can support curriculum enhancement, community engagement initiatives, and evidence-based educational policies while strengthening adult learning and sustainable educational development.

1.1 Functional Literacy, Community Engagement, and Adult Learning Outcomes among Teacher Education Students

Functional literacy extends beyond the ability to read and write by encompassing the application of knowledge, numeracy, comprehension, and problem-solving skills to everyday personal, professional, and community situations (UNESCO, 2022). These competencies enable individuals to participate effectively in society and contribute to socio-economic development. Despite improvements in educational access, a continuing gap exists between acquiring formal education and applying learned competencies in real-world settings. The World Bank (2024) emphasizes that adult learning outcomes are influenced not only by formal instruction but also by community support systems that facilitate the practical application of knowledge. In the Philippine context, the persistence of a learning crisis demonstrates that high literacy rates do not necessarily translate into functional competence. According to the Philippines Statistics Authority (PSA, 2024), the country's functional literacy rate among individuals aged 10 to 64 is approximately 70.8%. The Second Congressional Commission on Education (EDCOM II, 2026) further explains that educational pathways often fail to cultivate higher-order thinking and practical competencies necessary for community participation and lifelong learning. Likewise, Santos and Reyes (2024) note that adult learners frequently encounter institutional and social barriers that hinder the application of classroom knowledge to meaningful civic participation. Teacher education students represent a particularly important population because they are expected to become educators capable of transferring knowledge while addressing community needs. Their professional preparation therefore requires both functional literacy and meaningful community engagement to support effective teaching practice and responsible citizenship.

1.2 Themes and Insights on Functional Literacy, Community Engagement, and Adult Learning Outcomes

Existing literature consistently identifies functional literacy as a fundamental determinant of lifelong learning and adult educational success. Hanemann and Robinson (2022) describe literacy as a continuous process that extends beyond formal schooling and contributes to sustainable development through critical thinking, adaptability, and practical competencies. Similarly, Adewale and Afolabi (2020) emphasize that functional literacy enables learners to perform everyday responsibilities effectively while improving problem-solving skills and independence. Their findings further suggest that contextualized and practical learning approaches are more effective than traditional instructional methods in strengthening functional literacy. Demirbilek and Keser (2023) further explain that functional literacy requires the practical application of knowledge within social, cultural, and economic contexts. They highlight that learner-centered instruction and contextualized educational practices enhance the effectiveness of functional literacy programs. Likewise, UNESCO (2023) underscores that literacy encompasses functional, digital, and lifelong learning competencies supported by inclusive educational policies that address diverse linguistic, cultural, and social contexts. Within the Philippine setting, Bernardo (2020) explains that literacy development results from the interaction of cognitive processes and learners' sociocultural environments. Boco (2025) further emphasizes that contextual barriers, including limited access to learning resources and environmental constraints, may hinder the development and application of functional literacy among educators and adult learners. Contextualized instruction that reflects learners' everyday experiences strengthens comprehension, retention, and meaningful application of knowledge. Community engagement likewise plays an important role in enhancing adult learning outcomes. Belete et al. (2022) identify Community Learning Centres as valuable spaces that integrate literacy, vocational training, health education, citizenship development, and lifelong learning while responding to community needs. Similarly, Brozmanová Gregorová et al. (2025) demonstrate that service-learning and volunteering programs strengthen critical thinking, intercultural competence, and social responsibility through reciprocal partnerships between educational institutions and communities. Singh, Bhagwan, and Singh (2025) likewise argue that embedding community engagement into higher education enables students to apply academic knowledge in authentic community settings while promoting civic responsibility and collaborative learning. Merriam and Brockett (2021) further observe that learners who actively participate in community activities demonstrate stronger academic performance, practical competencies, motivation, confidence, and civic awareness. Likewise, Oluwakemi Sakirat and Emmanuel M. Deniran (2025) emphasize that collaboration among educators, families, community leaders, and local stakeholders strengthens educational programs by integrating classroom learning with real-life community experiences. Research also highlights the importance of adult learning systems that integrate institutional support, community participation, and lifelong learning opportunities. Boeren and Rubenson (2022) note that effective monitoring and evaluation systems are essential for improving adult learning, while Kisusi (2025) emphasizes that community-based educational programs strengthen literacy, vocational skills, and lifelong learning through active community participation. Broek, Kuijpers, Semeijn, and van der Linden (2024) further identify governance, funding, partnerships, supportive learning environments, and learner-centered interventions as critical factors influencing successful adult learning systems. In the Philippine context, Orozco and Berame (2022) stress the importance of flexible, context-based instructional resources that enhance planning, implementation, and learner engagement in adult education programs. Mercado and Villenas (2024) similarly conclude that sustainable adult education depends on institutional commitment, curriculum alignment, stakeholder collaboration, and continuous program improvement. Collectively, these studies indicate that functional literacy, community engagement, institutional support, and contextualized learning contribute significantly to improved adult learning outcomes.

1.3 Global, National, and Local Context of Functional Literacy, Community Engagement, and Adult Learning Outcomes among Teacher Education Students

Globally, educational institutions increasingly recognize that functional literacy and community engagement are essential foundations of lifelong learning, workforce readiness, democratic participation, and sustainable development. International organizations such as UNESCO (2022; 2023) and the World Bank (2024) advocate educational systems that equip learners with practical competencies applicable to rapidly changing social and economic environments. These perspectives highlight that meaningful adult learning extends beyond academic achievement to include the effective application of knowledge within communities. Nationally, the Philippines continues to face challenges in translating basic literacy into functional literacy. Despite maintaining relatively high literacy rates, the Philippines Statistics Authority (PSA, 2024) reports that functional literacy remains substantially lower than basic literacy. EDCOM II (2026) characterizes this situation as a learning crisis, emphasizing the need to strengthen higher-order thinking skills and practical competencies that enable meaningful civic participation and lifelong learning. Santos and Reyes (2024) likewise identify institutional and social barriers that limit learners' ability to apply educational knowledge within their communities. Locally, Trece Martires City reflects these national concerns as a rapidly urbanizing educational and governmental center. Teacher education students at Trece Martires City College are expected to possess functional literacy and community engagement competencies necessary for professional practice and civic leadership. However, institutional assessments within the Department of Education – Division of Cavite (2026), the Trece Martires City Planning and Development Office (2026), the Department of Education - Department of Education – Division of Cavite (2026), and studies by Lontoc and Magsino (2026) and Baco and Himang (2026) indicate continuing challenges in applying theoretical knowledge to authentic community, governance, and educational settings. Consequently, localized evidence remains necessary to determine how functional literacy and community engagement influence adult learning outcomes among future educators and to inform interventions that support both educational quality and community development.

1.4 Theoretical and Conceptual Basis of Functional Literacy, Community Engagement, and Adult Learning Outcomes

This study is anchored on John Dewey's Theory of Education and Democracy and Robert Putnam's Social Capital Theory, which collectively explain how functional literacy and community engagement contribute to adult learning outcomes among teacher education students. Dewey (1916) viewed education as a continuous social process in which learning extends beyond classroom instruction to real-life experiences. Within this perspective, functional literacy enables learners to apply knowledge, develop social intelligence, and actively participate in democratic communities. For teacher education students, literacy therefore serves not only as an academic competency but also as a foundation for fulfilling professional and civic responsibilities. Complementing Dewey's perspective, Putnam's (2000) Social Capital Theory emphasizes the value of social networks, civic participation, and mutual cooperation in promoting individual and collective success. The theory suggests that community engagement provides opportunities for learners to apply, reinforce, and expand their knowledge through meaningful interaction with society. For teacher education students, participation in community activities facilitates knowledge exchange, strengthens professional competencies, and supports improved adult learning outcomes by connecting academic learning with authentic social experiences. The study's conceptual framework further illustrates that functional literacy and community engagement function as the independent variables influencing adult learning outcomes, the dependent variable. Functional literacy encompasses communication skills, functional numeracy, and problem-solving skills, while community engagement includes civic participation, social involvement, and civic advocacy. Adult learning outcomes are assessed across the cognitive, psychomotor, and affective domains. The framework proposes that improvements in literacy and engagement contribute directly to enhanced learning outcomes by developing well-rounded, competent, and socially responsible future educators. Rather than presenting the framework as a figure, it describes a direct predictive relationship in which both independent variables collectively influence multidimensional learning outcomes.

1.5 Research Gaps and Rationale on Functional Literacy, Community Engagement, and Adult Learning Outcomes among Teacher Education Students

Although previous studies have established the importance of functional literacy, community engagement, and adult learning, much of the existing literature has examined these variables independently or within broader educational settings. International studies emphasize functional literacy as a determinant of lifelong learning (Hanemann and Robinson, 2022; Adewale and Afolabi, 2020; Demirbilek and Keser, 2023), while others highlight the contribution of community engagement and service-learning to academic achievement and civic responsibility (Belete et al., 2022; Brozmanová Gregorová et al., 2025; Singh, Bhagwan, and Singh, 2025; Merriam and Brockett, 2021; Oluwakemi Sakirat and Emmanuel M. Deniran, 2025). Similarly, research on adult learning systems has underscored the importance of institutional support, community participation, governance, and contextualized instructional practices (Boeren and Rubenson, 2022; Kisusi, 2025; Broek, Kuijpers, Semeijn, and van der Linden, 2024; Orozco and Berame, 2022; Mercado and Villenas, 2024). Despite these contributions, limited evidence specifically examines the combined predictive influence of functional literacy and community engagement on adult learning outcomes among teacher education students within Philippine local colleges. Existing literature also provides limited localized evidence from Trece Martires City regarding how future educators apply

functional literacy and civic engagement to address professional and community challenges. Institutional reports further indicate that teacher education students continue to encounter difficulties in translating theoretical knowledge into practical competencies required for community-based educational practice, local governance, and professional responsibilities (Trece Martires City Planning and Development Office, 2026; Department of Education - Division of Cavite, 2026; Lontoc & Magsino, 2026; Baco & Himang, 2026). Accordingly, this study addresses these gaps by investigating the predictive relationships among functional literacy, community engagement, and adult learning outcomes among teacher education students at Trece Martires City College. By generating localized empirical evidence, the study aims to provide data-driven insights that can support curriculum enhancement, institutional planning, community-based interventions, and educational policymaking. The findings are intended to contribute to strengthening adult education by promoting practical literacy, meaningful community engagement, and improved professional preparation for future educators.

1.6 Alignment of the Study with Relevant Sustainable Development Goals (SDGs)

This study aligns with several Sustainable Development Goals (SDGs) by examining the contribution of functional literacy and community engagement to adult learning outcomes among teacher education students. SDG 4 – Quality Education is the primary SDG supported by this study. The research focuses on strengthening functional literacy, promoting lifelong learning, and enhancing cognitive, psychomotor, and affective learning outcomes among future educators. The emphasis on contextualized learning, practical competencies, and community engagement reflects the goal of ensuring inclusive, equitable, and quality education while preparing learners for professional practice and lifelong learning (UNESCO, 2022; UNESCO, 2023). The study also supports SDG 8 – Decent Work and Economic Growth by highlighting the importance of functional literacy as a foundation for employability, professional competence, and workforce readiness among future teachers. Developing communication, numeracy, and problem-solving skills contributes to graduates' capacity to perform effectively in educational institutions and respond to the evolving demands of the teaching profession. In addition, the study aligns with SDG 11 – Sustainable Cities and Communities by emphasizing community engagement, civic participation, social involvement, and civic advocacy among teacher education students. These competencies encourage future educators to become active contributors to local development, community literacy initiatives, and civic responsibility within Trece Martires City. Strengthening the relationship between educational institutions and local communities also supports more inclusive and resilient communities. Furthermore, the study relates to SDG 17 – Partnerships for the Goals by recognizing the importance of collaboration among higher education institutions, local government units, community organizations, and other stakeholders in improving adult learning outcomes. The literature emphasizes that institutional support, community partnerships, and collaborative educational practices are essential for strengthening lifelong learning and community-based educational initiatives.

1.7 Importance of the Study to Multidisciplinary Sustainability in Teacher Education

The study contributes to educational sustainability by providing empirical evidence on how functional literacy and community engagement influence adult learning outcomes among teacher education students. The findings can support curriculum enhancement, instructional improvement, and community-based learning initiatives that strengthen lifelong learning and professional preparation for future educators. The research also promotes socio-economic sustainability by emphasizing functional literacy as an essential competency for employability, professional effectiveness, and active participation in society. Strengthening communication, numeracy, and problem-solving skills enables future teachers to respond more effectively to workplace demands and contribute to community development. From the perspective of community sustainability, the study highlights the value of civic participation, social involvement, and civic advocacy in fostering responsible citizenship and stronger relationships between educational institutions and local communities. By encouraging meaningful community engagement, the research supports collaborative efforts that address local educational and social needs while promoting civic responsibility among future educators. The study likewise contributes to institutional sustainability by providing evidence that can guide higher education institutions in developing policies, extension programs, and instructional practices that integrate functional literacy with community engagement. The findings may assist Trece Martires City College, local government units, and community stakeholders in designing evidence-based interventions that strengthen adult education and professional development. Finally, the research supports policy and governance sustainability by generating localized evidence that can inform educational planning, curriculum development, and community-based educational programs. Through its focus on the predictors of adult learning outcomes, the study contributes to evidence-informed decision-making that strengthens educational quality, community participation, and lifelong learning within the local context of Trece Martires City.

2. Material and methods

2.1 Research Design

The study utilized a descriptive-correlational research design. The descriptive component was employed to determine the perceived level of functional literacy, the extent of community engagement, and the level of adult learning outcomes among teacher education students at Trece Martires City College. The correlational component examined the significant relationships among these variables and determined the predictive influence of functional literacy and community

engagement on adult learning outcomes. This design provided a comprehensive understanding of how the study variables interact within the target population.

2.2 Locale of the Study

The study was conducted at Trece Martires City College in Cavite, Philippines. The institution served as the research setting because it offers a teacher education program whose students constitute the target population of the study. The investigation focused on the local context of the college to examine the relationship between functional literacy, community engagement, and adult learning outcomes among future educators within the institution.

2.3 Respondents of the Study

The respondents were teacher education students currently enrolled at Trece Martires City College who were 18 years old and above. Eligible participants were enrolled in the teacher education program and had experience or involvement in community-based activities relevant to the study. Students on an official leave of absence, those enrolled in non-education elective courses, and individuals without prior or current participation in community-based programs were excluded to ensure that respondents possessed the experiences necessary to assess functional literacy, community engagement, and adult learning outcomes.

2.4 Sample and Sampling Procedure

The study determined the required sample size using the Raosoft online sample size calculator, which computed a sample of 433 teacher education students based on the total student population, a 5% margin of error, a 95% confidence level, and a 50% response distribution. This approach ensured that the sample was statistically adequate and representative of the target population. Respondents were selected through convenience sampling due to the institution's hybrid learning setup, allowing the researchers to efficiently reach students who were accessible and willing to participate during the data collection period. Inclusion criteria required participants to be currently enrolled in the teacher education program, at least 18 years of age, and involved in community-based activities relevant to the study, while those on official leave, enrolled in non-education elective courses, or without community engagement experience were excluded.

2.5 Research Instrument

Data were collected using a self-constructed structured questionnaire developed from an extensive review of related literature and the study's conceptual framework. The instrument measured three major variables: functional literacy, community engagement, and adult learning outcomes. Functional literacy was assessed through communication skills, functional numeracy, and problem-solving skills; community engagement through civic participation, social involvement, and civic advocacy; and adult learning outcomes through the cognitive, psychomotor, and affective domains. Responses were measured using a four-point Likert scale to quantify participants' perceptions. To establish content validity, the questionnaire underwent expert evaluation using the Content Validity Index (CVI), including assessment of both item relevance and clarity. The instrument achieved an acceptable Scale-level Content Validity Index (S-CVI) and was further examined for face validity to ensure that its format and language were appropriate for teacher education students. A pilot test involving respondents outside the final sample was subsequently conducted to refine ambiguous items and determine the instrument's reliability. Internal consistency was assessed using Cronbach's Alpha, with all constructs exceeding the acceptable threshold of 0.70, confirming that the instrument was both valid and reliable for data collection.

2.6 Data Gathering Procedure

Prior to data collection, the researchers secured approval from the College Administrator and the Dean of the Teacher Education Department of Trece Martires City College through a formal letter requesting permission to conduct the study. After obtaining the necessary authorization, the researchers coordinated with program coordinators, academic advisers, and student council representatives to facilitate the distribution of the research instrument. Considering the institution's hybrid learning environment and the study's timeframe, data were collected online using Google Forms and disseminated through official academic networks, student portal groups, and other digital communication platforms utilized by teacher education students. Before completing the questionnaire, respondents were presented with an informed consent form outlining the study's purpose and instructions. Participants were given sufficient time to accomplish the questionnaire independently, while the researchers remained available through digital platforms to provide clarification when necessary without influencing responses. After the survey period, responses were reviewed for completeness, and incomplete or invalid submissions were excluded to ensure data quality. The finalized dataset was then organized and prepared for statistical analysis in accordance with the study objectives.

2.7 Data Analysis Techniques

The collected data were analyzed using descriptive and inferential statistical techniques appropriate to the research objectives. Weighted mean and standard deviation were employed to describe the respondents' perceived level of functional literacy, extent of community engagement, and level of adult learning outcomes. The weighted mean determined the average responses for each variable, while the standard deviation measured the consistency and variability of the

respondents' ratings. To determine the significant relationships between functional literacy and adult learning outcomes, as well as between community engagement and adult learning outcomes, the study utilized the Pearson Product-Moment Correlation Coefficient (Pearson r). Prior to correlation analysis, the assumptions of normality and linearity were examined to ensure the appropriateness of the statistical procedure. To determine whether functional literacy and community engagement significantly predicted adult learning outcomes, Multiple Linear Regression Analysis was performed. This technique examined both the individual and combined influence of the independent variables on the dependent variable. The results of these statistical analyses also served as the empirical basis for developing the proposed community-based intervention program. All statistical computations were conducted using appropriate statistical software to ensure the accuracy and reliability of the findings.

3. Results and Discussion

3.1 Functional Literacy of Teacher Education Students

3.1.1 Communication Skills

The findings indicate that the respondents demonstrated a proficient level of communication skills. They reported the greatest confidence in understanding and interpreting complex instructions and official documents, followed by expressing ideas clearly and summarizing information from different sources. Comparatively lower ratings were observed in writing formal letters or digital messages and in speaking confidently during group discussions or public presentations, although these competencies remained within the proficient level. Overall, communication skills reflected consistent perceptions among the respondents. These findings suggest that teacher education students possess adequate communication competencies necessary for academic and professional tasks but may still require greater confidence in formal written communication and public speaking. Such results are consistent with the view that functional literacy extends beyond basic reading and writing by emphasizing the practical application of communication skills in real-life contexts, as discussed by Hanemann and Robinson (2022), Adewale and Afolabi (2020), Demirbilek and Keser (2023), UNESCO (2023), and Bernardo (2020).

3.1.2 Functional Numeracy

The respondents also demonstrated an overall proficient level of functional numeracy. Basic mathematical operations received the highest rating, indicating strong competence in performing fundamental computations. Other numeracy skills, including personal financial management, interpreting numerical information, calculating percentages and interest rates, and estimating practical measurements, were likewise rated as proficient, although practical estimation and financial computations obtained relatively lower ratings. The results indicate that the respondents possess practical mathematical competencies that support everyday and professional decision-making, while more complex applied numeracy skills may benefit from further enhancement. These findings support the literature emphasizing that functional literacy enables individuals to perform practical daily tasks and solve real-world problems effectively through contextualized learning experiences (Adewale and Afolabi, 2020; Demirbilek and Keser, 2023).

3.1.3 Problem-Solving Skills

The findings reveal that the respondents attained a proficient level of problem-solving skills across all indicators. The highest ratings were obtained in applying logical reasoning and critical thinking to everyday situations, followed by evaluating alternative solutions and adapting strategies when initial approaches proved ineffective. Identifying the root cause of problems and remaining calm during unexpected situations received comparatively lower ratings but were still interpreted as proficient. Overall, respondents exhibited consistent perceptions regarding their ability to solve practical problems systematically. These findings indicate that teacher education students have developed practical reasoning and decision-making skills that support effective learning and future professional practice. The results reinforce previous studies highlighting that functional literacy strengthens critical thinking, adaptability, and the application of knowledge in authentic situations, thereby contributing to improved adult learning outcomes (Hanemann and Robinson, 2022; Adewale and Afolabi, 2020; Bernardo, 2020).

3.1.4 Overall Functional Literacy

Overall, the respondents demonstrated a proficient level of functional literacy. Among the three dimensions, problem-solving skills obtained the highest overall rating, followed by functional numeracy, while communication skills received the lowest mean despite remaining within the proficient level. The consistently low variability of responses indicates a high degree of agreement among respondents regarding their functional literacy competencies. The overall findings indicate that teacher education students possess the practical competencies needed to apply knowledge in academic, professional, and community settings. These results support the study's premise that functional literacy serves as a critical foundation for lifelong learning and professional competence, consistent with the perspectives presented by UNESCO (2022), UNESCO (2023), and the related literature on functional literacy.

3.2 Community Engagement of Teacher Education Students

3.2.1 Civic Participation

The findings show that the respondents demonstrated a great extent of civic participation. The highest levels of participation were observed in complying with community rules and regulations and exercising the right to vote in local and national elections. Respondents also reported staying informed about local government policies and participating in government-led feedback activities. Attendance at barangay assemblies and community consultations received the lowest rating, although it remained within the great extent category. Overall, the responses indicate consistent engagement in civic activities. These findings suggest that teacher education students actively fulfill civic responsibilities, particularly those associated with responsible citizenship and compliance with community regulations. However, lower participation in community assemblies indicates opportunities to strengthen direct involvement in local governance. The results support previous studies emphasizing that community engagement enhances civic responsibility, experiential learning, and meaningful participation in society (Belete et al., 2022; Brozmanová Gregorová et al., 2025; Singh, Bhagwan, and Singh, 2025; Merriam and Brockett, 2021; Oluwakemi Sakirat and Emmanuel M. Deniran, 2025).

3.2.2 Social Involvement

The respondents likewise exhibited a great extent of social involvement. They reported greater participation in volunteer activities, collaboration with neighbors to address community concerns, and contributions to charitable initiatives. Participation in organizing community events was also rated positively. In contrast, serving as an active member or officer of local organizations received the lowest rating and was the only indicator interpreted at a moderate extent. Despite this, the overall level of social involvement remained high. These results indicate that teacher education students are generally willing to participate in community service and collaborative activities but demonstrate less involvement in formal leadership roles within community organizations. This finding reinforces the literature suggesting that community-based learning experiences foster practical learning, civic engagement, and social responsibility while highlighting the importance of institutional support in encouraging active participation and leadership (Belete et al., 2022; Merriam and Brockett, 2021; Oluwakemi Sakirat and Emmanuel M. Deniran, 2025).

3.2.3 Civic Advocacy

The findings reveal that respondents demonstrated a great extent of civic advocacy. Educating peers and family members about their rights and responsibilities received the highest rating and was interpreted as a very great extent. Respondents also reported encouraging others to participate in social issues, using social media to promote community improvements, advocating causes related to environmental and health awareness, and participating in peaceful campaigns, although involvement in policy-related campaigns obtained the lowest rating. Overall, respondents consistently demonstrated positive civic advocacy. These findings indicate that teacher education students recognize their role in promoting civic awareness and community responsibility. Their willingness to educate others and advocate for community improvement reflects the application of learning beyond the classroom. The results are consistent with studies emphasizing that community engagement strengthens civic awareness, collaborative learning, and socially responsible behavior through active participation in community initiatives (Brozmanová Gregorová et al., 2025; Singh, Bhagwan, and Singh, 2025; Merriam and Brockett, 2021).

3.2.4 Overall Community Engagement

Overall, the respondents demonstrated a great extent of community engagement. Civic participation obtained the highest overall rating, followed by civic advocacy, while social involvement recorded the lowest mean despite remaining within the great extent category. The low variation among responses indicates a high level of consistency in the respondents' perceptions of their community engagement. The overall findings suggest that teacher education students actively participate in community-related activities and possess the civic competencies needed to apply their learning within real-world settings. These results support the study's premise that community engagement complements functional literacy by providing authentic learning experiences that contribute to improved adult learning outcomes. The findings likewise reinforce the literature emphasizing the importance of community participation, institutional collaboration, and experiential learning in strengthening lifelong learning and professional development (Belete et al., 2022; Brozmanová Gregorová et al., 2025; Singh, Bhagwan, and Singh, 2025; Merriam and Brockett, 2021; Oluwakemi Sakirat and Emmanuel M. Deniran, 2025).

3.3 Adult Learning Outcomes among Teacher Education Students

3.3.1 Cognitive Outcomes

The findings indicate that the respondents demonstrated a positive level of cognitive learning outcomes, with the overall results interpreted as agree. The highest ratings were obtained for relating newly acquired knowledge to previous life experiences and improving critical thinking and analytical abilities. Respondents also agreed that they had acquired applicable theoretical knowledge, could recall essential concepts, and were able to synthesize information to develop a better understanding of various subjects. Overall, the results reflect consistent cognitive development among the respondents. These findings suggest that teacher education students have developed cognitive competencies necessary for

lifelong learning and professional preparation. Their ability to connect new knowledge with prior experiences and apply critical thinking reflects meaningful learning beyond knowledge acquisition. The findings support previous literature emphasizing that adult learning is strengthened through contextualized instruction, practical application of knowledge, and learner-centered educational experiences (Hanemann and Robinson, 2022; Bernardo, 2020; Boeren and Rubenson, 2022; Broek, Kuijpers, Semeijn, and van der Linden, 2024).

3.3.2 Psychomotor Outcomes

The respondents also demonstrated positive psychomotor learning outcomes, with all indicators interpreted as agree. The highest rating was observed in the development of physical and technical skills relevant to work and learning. Respondents likewise agreed that they had improved their ability to perform practical tasks accurately, enhanced their coordination in using tools and technology, mastered relevant equipment and digital tools, and were capable of demonstrating newly acquired skills with minimal errors. The results indicate consistent development of practical competencies. These findings indicate that teacher education students have acquired practical skills necessary for professional practice through their learning experiences. The development of technical competencies supports the application of theoretical knowledge in authentic educational settings and aligns with previous studies emphasizing the value of contextualized instruction, practical learning experiences, and institutional support in enhancing adult learning outcomes (Orozco and Berame, 2022; Mercado and Villenas, 2024; Broek, Kuijpers, Semeijn, and van der Linden, 2024).

3.3.3 Affective Outcomes

The findings reveal that affective outcomes obtained the highest overall rating among the three learning domains and were interpreted as strongly agree. Respondents reported the greatest improvement in demonstrating integrity and empathy, appreciating diverse perspectives and cultures, and maintaining motivation for continued personal and professional development. They likewise agreed that they had developed a more positive attitude toward lifelong learning and greater confidence in contributing meaningfully to society. Overall, the respondents exhibited strong affective development. These findings suggest that teacher education students have developed positive values, attitudes, and professional dispositions essential for effective teaching and community engagement. The strong affective outcomes indicate that learning extends beyond cognitive achievement to include personal growth, ethical responsibility, and commitment to lifelong learning. These results are consistent with literature emphasizing that adult education promotes holistic learner development by integrating knowledge, skills, values, and community participation (Boeren and Rubenson, 2022; Kisusi, 2025; Orozco and Berame, 2022; Mercado and Villenas, 2024).

3.3.4 Overall Adult Learning Outcomes

Overall, the respondents demonstrated positive adult learning outcomes, with the overall level interpreted as agree. Among the three domains, affective outcomes received the highest rating, followed by cognitive outcomes, while psychomotor outcomes obtained the lowest mean, although all domains reflected favorable learning outcomes. The consistency of responses indicates that the respondents generally perceived themselves as having achieved meaningful learning across the cognitive, psychomotor, and affective domains. The overall findings indicate that teacher education students have attained balanced learning outcomes that support both professional competence and lifelong learning. The prominence of affective development highlights the importance of values formation alongside knowledge and skills acquisition. These findings reinforce the study's theoretical foundation that meaningful adult learning results from the interaction of functional literacy, community engagement, and authentic educational experiences, consistent with the literature on adult learning and lifelong education (Boeren and Rubenson, 2022; Kisusi, 2025; Broek, Kuijpers, Semeijn, and van der Linden, 2024; Orozco and Berame, 2022; Mercado and Villenas, 2024).

3.4 Relationship Between Functional Literacy, Community Engagement, and Adult Learning Outcomes

3.4.1 Functional Literacy and Adult Learning Outcomes

The findings revealed a strong positive and statistically significant relationship between functional literacy and adult learning outcomes. The correlation analysis showed that higher levels of functional literacy were associated with improved adult learning outcomes, indicating that better communication skills, functional numeracy, and problem-solving skills corresponded with stronger cognitive, psychomotor, and affective outcomes. The statistical results supported the rejection of the null hypothesis, confirming a significant relationship between the two variables. These findings indicate that functional literacy is a key contributor to adult learning outcomes among teacher education students. Strong literacy skills enable learners to process information, solve problems, and apply knowledge effectively in academic and community contexts. This finding supports the literature emphasizing that functional literacy promotes lifelong learning, critical thinking, and the practical application of knowledge in authentic situations (Hanemann and Robinson, 2022; Adewale and Afolabi, 2020; Demirbilek and Keser, 2023; UNESCO, 2023; Bernardo, 2020).

3.4.2 Community Engagement and Adult Learning Outcomes

The findings also demonstrated a moderate positive and statistically significant relationship between community engagement and adult learning outcomes. Respondents with higher levels of civic participation, social involvement, and

civic advocacy likewise exhibited better learning outcomes. The statistical analysis confirmed that increased community engagement was significantly associated with improved adult learning outcomes, resulting in the rejection of the second null hypothesis. These findings suggest that active participation in community activities enhances adult learning by allowing students to apply classroom knowledge in real-world settings. Community engagement strengthens civic responsibility, practical learning, and collaborative experiences that contribute to holistic learner development. The results are consistent with previous studies emphasizing that community-based learning and institutional partnerships enhance academic achievement, lifelong learning, and social responsibility (Belete et al., 2022; Brozmanová Gregorová et al., 2025; Singh, Bhagwan, and Singh, 2025; Merriam and Brockett, 2021; Oluwakemi Sakirat and Emmanuel M. Deniran, 2025).

3.4.3 Predictive Influence of Functional Literacy and Community Engagement on Adult Learning Outcomes

The regression analysis showed that both functional literacy and community engagement significantly predicted adult learning outcomes. Functional literacy emerged as the strongest predictor, indicating that every increase in functional literacy corresponded to a substantial improvement in learning outcomes. Community engagement also had a significant positive effect, although its contribution was smaller than that of functional literacy. Overall, the findings confirmed that both variables are significant predictors of adult learning outcomes, with functional literacy exerting the greater influence. These results demonstrate that functional literacy serves as the primary driver of adult learning outcomes, while community engagement reinforces learning by providing authentic contexts in which knowledge and skills can be applied. The comprehensive discussion further explains that although respondents displayed proficient functional literacy and a great extent of community engagement, improvements are still needed in communicative confidence, active leadership, and practical application of numeracy skills. The findings also indicate that strong affective development complements literacy and community engagement in supporting holistic learning. Overall, the results reinforce that strengthening functional literacy while expanding meaningful community participation can enhance the professional preparation and lifelong learning of future educators, consistent with UNESCO (2023), Putnam (2000), Deweyan (1938), Lucas (2020), Gal (2021), Adler and Goggin (2016), and Mezirow (2018).

3.5 Predictive Influence of Functional Literacy and Community Engagement on Adult Learning Outcomes

3.5.1 Functional Literacy and Community Engagement as Predictors of Adult Learning Outcomes

The multiple regression analysis revealed that functional literacy and community engagement were both significant predictors of adult learning outcomes among teacher education students. Functional literacy emerged as the strongest predictor, indicating that improvements in communication skills, functional numeracy, and problem-solving skills substantially increased adult learning outcomes. Community engagement also significantly contributed to the model, although its predictive influence was comparatively smaller. Together, the two variables significantly explained variations in adult learning outcomes, leading to the rejection of the null hypothesis that functional literacy and community engagement do not significantly predict adult learning outcomes. These findings indicate that adult learning outcomes are strengthened when teacher education students possess both practical literacy skills and meaningful community engagement experiences. While functional literacy serves as the primary driver of learning, community engagement complements this by providing authentic contexts where knowledge and professional competencies can be applied. The combined influence of these variables supports the study's theoretical framework, demonstrating that practical literacy and active participation in the community contribute to holistic learner development and improved professional preparation.

3.5.2 Proposed Community-Based Intervention Program

Based on the findings, the study proposed the Civic-Pedagogical Integration Program (CPIP) as a community-based intervention to strengthen adult learning outcomes among teacher education students. The proposed program focuses on improving communicative competence, applied numeracy, leadership, and community participation by integrating structured learning activities with authentic community experiences. It emphasizes communicative leadership workshops, applied numeracy projects, and collaborative partnerships between the college and local communities to address identified areas for improvement while reinforcing existing strengths. The proposed intervention reflects the study's findings that stronger functional literacy and more active community engagement contribute to improved adult learning outcomes. By creating structured opportunities for students to apply academic knowledge in community settings, the program aims to enhance cognitive, psychomotor, and affective development while promoting leadership, civic responsibility, and professional competence. The intervention also strengthens institutional and community collaboration, providing future educators with meaningful experiential learning opportunities that bridge classroom learning and professional practice.

4. Conclusion & Recommendations

The study concludes that teacher education students at Trece Martires City College demonstrate proficient functional literacy, a great extent of community engagement, and positive adult learning outcomes, particularly in the affective domain. However, despite their strengths in foundational literacy, compliance with community responsibilities, and positive values, they exhibit limitations in higher-level communication skills, leadership, and active participation in community organizations. The findings further establish that both functional literacy and community engagement significantly predict adult learning outcomes, with functional literacy emerging as the strongest predictor. These results indicate that strengthening practical literacy skills while promoting meaningful community engagement can better prepare future educators for professional practice and community involvement.

Based on the findings, Trece Martires City College should strengthen its curriculum by enhancing communicative competence, applied numeracy, and structured community engagement through the proposed Civic-Pedagogical Integration Program (CPIP). Local government units and barangay leaders should provide greater opportunities for teacher education students to participate in leadership, literacy, and community-based initiatives. Teacher education students are encouraged to actively engage in community organizations and continuously develop their communication, leadership, and professional competencies. Future researchers are encouraged to conduct longitudinal and comparative studies to further examine functional literacy, community engagement, and adult learning outcomes across different educational contexts.

The study was limited to teacher education students of Trece Martires City College and focused on their perceived functional literacy, community engagement, and adult learning outcomes within the institution's context. Consequently, the findings may not be generalizable to students from other academic disciplines or higher education institutions. The recommendations for future longitudinal and comparative research also indicate the need to validate the findings across broader educational settings and determine whether the identified patterns extend beyond the present study context.

Compliance with ethical standards

The authors conducted the study in accordance with the approved research procedures of Trece Martires City College. Prior to data collection, permission to conduct the study was obtained from the College Administrator and the Dean of the Teacher Education Department. Eligible teacher education students were provided with an informed consent form explaining the purpose and procedures of the study before participating. Participation was voluntary, respondents completed the questionnaire independently, and only complete and valid responses were included in the analysis. The authors ensured that data collection and processing adhered to the approved research procedures to maintain the integrity and quality of the study.

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