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**Evaluating the Effectiveness of Problem-Based Learning (PBL) in Accounting Education: A Study of Pre-Service Teachers in Colleges of Education in Southeast Nigeria**

**Amaugo Ernest Nkwachi**

Department of Business Education, Nwafor Orizu College of Education, Nsugbe Anambra State, Nigeria, [amaugoernest170@gmail.com](mailto:amaugoernest170@gmail.com)  
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**ABSTRACT**

*This study evaluated the effectiveness of Problem-Based Learning (PBL) in accounting education, involving 200 pre-service teachers from two Colleges of Education in Southeast Nigeria. The findings revealed that PBL has a significant impact on pre-service teachers' learning outcomes, particularly in terms of developing problem-solving skills (80%, n=160) and critical thinking abilities (70%, n=140). The study also found that PBL implementation in accounting education is faced with several challenges, including limited resources and infrastructure (60%, n=120), inadequate training and support for lecturers (50%, n=100), and difficulty in assessing student learning outcomes (45%, n=90). Despite these challenges, the benefits of PBL implementation, such as improved student engagement and motivation (90%, n=180), developed problem-solving and critical thinking skills (88%, n=175), and enhanced collaboration and teamwork (83%, n=165), outweigh the challenges. The study highlights the need for increased investment in resources and infrastructure, training and support for lecturers, and the development of effective assessment strategies to measure student learning outcomes. The study provides recommendations for improving the effectiveness of PBL implementation in accounting education, including investing in resources and infrastructure, providing training and support for lecturers, and encouraging collaboration and teamwork among students. The findings of this study have implications for improving the quality of accounting education in Colleges of Education.*

**Keywords:** Problem-Based Learning (PBL), Accounting Education, Pre-Service Teachers, Learning Outcomes, Critical Thinking Skills

**INTRODUCTION**

The traditional lecture-based approach to teaching accounting has been criticized for its inability to equip students with the necessary skills and competencies required in the profession (Adusei, 2015). In response, educators have turned to innovative teaching methods, such as Problem-Based Learning (PBL), to enhance student learning outcomes and promote deeper understanding of accounting concepts. PBL is a student-centered approach that involves presenting students with real-world problems to solve, encouraging them to develop critical thinking, problem-solving, and collaboration skills (Barrows, 1996). In Nigeria, the education sector has been undergoing reforms aimed at improving the quality of education and preparing students for the demands of the 21st century (Federal Ministry of Education, 2013). As part of these reforms, there has been a growing interest in adopting innovative teaching methods, such as PBL, in Colleges of Education. However, despite the potential benefits of PBL, its implementation in accounting education in Nigeria is still in its infancy, and there is a need for research to evaluate its effectiveness in this context.

The Southeast region of Nigeria has been identified as a key area for educational development, with the government investing heavily in education infrastructure and initiatives (National Bureau of Statistics, 2020). Evaluating the effectiveness of PBL in accounting education in Colleges of Education in this region is crucial to inform policy and practice, ensuring that pre-service teachers are equipped with the necessary skills and competencies to teach accounting effectively in secondary schools. This study aims to contribute to the existing body of knowledge on PBL in accounting education by investigating its

effectiveness in Colleges of Education in Southeast Nigeria. By exploring the benefits and challenges of PBL implementation, this research will provide valuable insights for educators, policymakers, and stakeholders seeking to improve the quality of accounting education and prepare pre-service teachers for the demands of the 21<sup>st</sup> century classroom.

## **LITERATURE REVIEW**

### ***Problem-Based Learning (PBL)***

Problem-Based Learning (PBL) is a student-centered teaching approach that involves presenting students with real-world problems to solve, encouraging them to develop critical thinking, problem-solving, and collaboration skills (Barrows, 1996). In PBL, students work in groups to identify learning gaps, develop solutions, and present their findings, promoting a deeper understanding of the subject matter. This approach has been widely adopted in various fields, including medicine, engineering, and business education, due to its potential to enhance student learning outcomes and prepare students for the demands of the 21st-century workplace (Hmelo-Silver, 2004). PBL has several benefits, including the development of critical thinking, problem-solving, and communication skills, as well as promoting student motivation and engagement (Savery, 2006). By working on real-world problems, students can develop a deeper understanding of the subject matter and its practical applications, making learning more relevant and meaningful. Additionally, PBL encourages students to take ownership of their learning, developing self-directed learning skills and promoting lifelong learning.

Despite its benefits, PBL also presents several challenges, including the need for significant faculty training and support, as well as the potential for uneven student participation and engagement (Hung, 2011). To overcome these challenges, educators must carefully design and implement PBL curricula, providing clear guidance and support for students. By doing so, PBL can be a powerful tool for promoting student learning and preparing students for success in their chosen careers.

PBL is a powerful teaching approach that has the potential to enhance student learning outcomes and prepare students for the demands of the 21st-century workplace. By providing students with real-world problems to solve, PBL promotes critical thinking, problem-solving, and collaboration skills, making learning more relevant and meaningful. As educators continue to explore innovative teaching methods, PBL remains a valuable approach for promoting student-centered learning and preparing students for success.

### ***Accounting Education***

Accounting education is a critical component of the accounting profession, providing students with the knowledge, skills, and competencies required to succeed in the field (Albrecht & Sack, 2000). Accounting education encompasses a broad range of topics, including financial accounting, managerial accounting, taxation, auditing, and financial management. The primary goal of accounting education is to equip students with a deep understanding of accounting concepts, principles, and practices, as well as the skills and competencies required to apply them in real-world contexts. The accounting education landscape has undergone significant changes in recent years, driven by advances in technology, changes in the business environment, and evolving stakeholder expectations (IFAC, 2019). As a result, accounting educators are increasingly focusing on developing students' critical thinking, problem-solving, and communication skills, as well as their technical knowledge and competencies. This shift in emphasis is reflected in the adoption of innovative teaching methods, such as case studies, simulations, and project-based learning, which aim to provide students with a more engaging and effective learning experience.

Despite these efforts, accounting education continues to face several challenges, including the need to balance technical knowledge with professional skills and competencies, and the importance of incorporating emerging issues, such as sustainability and technology, into the curriculum (Watty et al., 2016). To address these challenges, accounting educators must stay up-to-date with the latest developments in the field, incorporating relevant and timely content into their courses and programs. Accounting education plays a vital role in shaping the next generation of accounting professionals, providing them with the knowledge, skills, and competencies required to succeed in the field. By staying abreast of the latest developments and innovations in accounting education, educators can equip students with the skills and competencies required to meet the demands of the 21st-century accounting profession.

### ***Pre-Service Teachers***

Pre-service teachers are individuals who are undergoing training to become teachers, typically through a teacher education program at a university or college (Darling-Hammond, 2006). These individuals are preparing to enter the teaching profession and are learning the skills, knowledge, and practices necessary to become effective teachers. Pre-service teachers are crucial to the future of education, as they will shape the minds and experiences of future generations.

Pre-service teachers play a vital role in the education system, as they bring new ideas, enthusiasm, and energy to the classroom (Zeichner, 2010). Through their teacher education programs, pre-service teachers learn about teaching methods, classroom management, lesson planning, and assessment techniques. They also gain practical experience through student teaching or practicum placements, where they work alongside experienced teachers to develop their teaching skills.

The quality of pre-service teacher education is critical to ensuring that new teachers are well-prepared for the demands of the teaching profession (Cochran-Smith & Zeichner, 2005). Effective pre-service teacher education programs provide pre-service teachers with a strong foundation in subject matter knowledge, pedagogical knowledge, and practical experience. By focusing on the development of pre-service teachers, educators and policymakers can help ensure that new teachers are equipped to provide high-quality instruction and support student learning. Pre-service teachers are essential to the future of education, and their preparation is critical to ensuring that they are equipped to meet the demands of the teaching profession. By providing pre-service teachers with high-quality education and training, educators and policymakers can help ensure that new teachers are well-prepared to provide effective instruction and support student learning.

### **Theoretical Framework**

Problem-Based Learning (PBL) is a student-centered approach to learning that emphasizes the development of problem-solving skills, critical thinking, and collaboration (Barrows, 1996). In the context of accounting education, PBL can be a particularly effective way to prepare pre-service teachers for the complexities of teaching accounting in a rapidly changing business environment. This study will draw on the theoretical frameworks of constructivism and social constructivism to evaluate the effectiveness of PBL in accounting education.

Constructivism posits that learners construct their own knowledge and understanding through experience and interaction with their environment (Piaget, 1967). PBL is consistent with this theory, as it encourages students to take an active role in their learning, working in groups to identify and solve problems. By doing so, students develop a deeper understanding of accounting concepts and principles, as well as the skills and competencies required to apply them in real-world contexts.

Social constructivism, on the other hand, emphasizes the role of social interaction and collaboration in the learning process (Vygotsky, 1978). PBL provides opportunities for students to engage in collaborative learning, sharing their knowledge and expertise with peers and learning from one another. This approach can be particularly effective in accounting education, where teamwork and communication skills are essential for success in the profession.

The Self-Determination Theory (SDT) can also be applied to this study, which posits that motivation is influenced by autonomy, competence, and relatedness (Deci & Ryan, 2000). PBL can promote autonomy by allowing students to take ownership of their learning, competence by developing problem-solving skills, and relatedness by fostering collaboration and teamwork.

### **Statement of the Problem/Justification**

The traditional teaching methods used in accounting education in Nigeria have been criticized for their inability to equip pre-service teachers with the necessary skills and competencies required to teach accounting effectively (Adusei, 2015). Despite the growing interest in Problem-Based Learning (PBL) as an innovative teaching approach, there is a dearth of research on its effectiveness in accounting education in Colleges of Education in Southeast Nigeria. This knowledge gap makes it challenging for educators and policymakers to determine the impact of PBL on pre-service teachers' learning outcomes and teaching practices. This study is justified by the need to evaluate the effectiveness of PBL in accounting education, particularly in the context of Colleges of Education in Southeast Nigeria. By investigating the benefits and challenges of PBL implementation, this research will provide valuable insights for stakeholders seeking to improve the quality of accounting education and prepare pre-service teachers for the demands of the 21st-

century classroom (Barrows, 1996). The study's findings will also contribute to the existing body of knowledge on PBL in accounting education, informing policy and practice in this area.

### Research Questions

1. What is the impact of PBL on pre-service teachers' learning outcomes in accounting education?
2. How does PBL affect pre-service teachers' problem-solving skills and critical thinking abilities in accounting education?
3. What are the challenges and benefits of implementing PBL in accounting education in Colleges of Education?
4. What strategies can be employed to improve the effectiveness of PBL implementation in accounting education?

### Specific Objectives

1. Investigate the impact of PBL on pre-service teachers' learning outcomes in accounting education.
2. Examine the effect of PBL on pre-service teachers' problem-solving skills and critical thinking abilities in accounting education.
3. Identify the challenges and benefits of implementing PBL in accounting education in Colleges of Education.
4. Develop recommendations for improving the effectiveness of PBL implementation in accounting education.

### Research Methodology

The study employed a survey research design to investigate the effectiveness of PBL in accounting education. The study was conducted in two Colleges of Education in Southeast Nigeria, namely Nwafor Orizu College of Education, Nsugbe Anambra State, and Enugu State College of Education. A questionnaire was used to collect data from a sample of 200 pre-service teachers selected through a stratified random sampling technique. The questionnaire was designed to gather data on pre-service teachers' perceptions and experiences with PBL implementation, its impact on their learning outcomes, and the challenges faced in its implementation. The data collected was analyzed using descriptive statistics, such as frequency counts, percentages, and mean scores, to identify trends and patterns in the participants' responses. The findings provided valuable insights into the effectiveness of PBL in accounting education and inform stakeholders on how to improve the quality of accounting education in Colleges of Education.

### Data Presentation and Analysis

The study evaluated the effectiveness of problem-based learning (PBL) in accounting education: a study of pre-service teachers in colleges of education in southeast Nigeria, involving 200 pre-service teachers. The survey research design was employed to gather data.

**Table 1: Impact of PBL on Pre-Service Teachers' Learning Outcomes**

Impact of PBL	Frequency	Percentage
Improved understanding of accounting concepts	150	75%
Enhanced critical thinking skills	140	70%
Developed problem-solving skills	160	80%
Improved academic performance	120	60%

**Table 2: Effect of PBL on Pre-Service Teachers' Problem-Solving Skills and Critical Thinking Abilities**

Effect of PBL	Frequency	Percentage
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Developed ability to analyse complex problems	170	85%
Improved ability to think critically	155	78%
Enhanced ability to solve problems independently	165	83%
Developed ability to evaluate information	145	73%

**Table 3: Challenges of Implementing PBL in Accounting Education**

Challenges of PBL Implementation	Frequency	Percentage
Limited resources and infrastructure	120	60%
Inadequate training and support for lecturers	100	50%
Difficult in assessing student learning outcomes	90	45%
Resistance to change from traditional teaching methods	80	40%

**Table 4: Benefits of Implementing PBL in Accounting Education**

Benefits of PBL Implementation	Frequency	Percentage
Improved student engagement and motivation	180	90%
Developed problem-solving and critical thinking skills	175	88%
Enhanced collaboration and teamwork	165	83%
Improved academic performance and learning outcomes	155	78%

### Data Analysis

The data analysis reveals that PBL has a positive impact on pre-service teachers' learning outcomes, particularly in terms of developing problem-solving skills and critical thinking abilities. The findings also show that PBL implementation in accounting education is faced with several challenges, including limited resources and infrastructure, inadequate training and support for lecturers, and difficulty in assessing student learning outcomes. However, the benefits of PBL implementation, such as improved student engagement and motivation, developed problem-solving and critical thinking skills, and enhanced collaboration and teamwork, outweigh the challenges.

### Findings

The study found that PBL has a significant impact on pre-service teachers' learning outcomes, particularly in terms of developing problem-solving skills and critical thinking abilities. The study also found that PBL implementation in accounting education is faced with several challenges, but the benefits of PBL implementation outweigh the challenges. The study highlights the need for increased investment in resources and infrastructure, training and support for lecturers, and the development of effective assessment strategies to measure student learning outcomes.

### CONCLUSION

The study highlights the effectiveness of PBL in accounting education, particularly in terms of developing problem-solving skills and critical thinking abilities. While there are challenges to PBL implementation, the benefits of PBL make it a worthwhile investment. The study provides recommendations for improving the effectiveness of PBL implementation in accounting education.

### RECOMMENDATIONS

1. Colleges of Education should invest in resources and infrastructure, such as technology and library resources, to support PBL implementation in accounting education.
2. Lecturers should be provided with training and support to develop their skills in implementing PBL in accounting education.
3. Colleges of Education should develop effective assessment strategies to measure student learning outcomes in PBL.
4. PBL should be designed to encourage collaboration and teamwork among students, to develop their communication and interpersonal skills.
5. The effectiveness of PBL implementation should be continuously monitored and evaluated, to identify areas for improvement and ensure that PBL is achieving its intended goals.

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