

Skills Developed Through Problem-Based Learning Approach and its Benefits to Auditing Students in Higher Institutions in Developing Countries: A Literature Review

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Abstract: Teaching approaches play a pivotal role in students' performance. Students' performance is not only measured by throughput but also by the skills they possess to perform tasks relating to their disciplines. Problem-based learning (PBL) has been widely used in other disciplines such as medicine, science, and engineering. However, the adoption thereof in accounting education is limited. With PBL, students are presented with unstructured real-life problems and work in teams. The ability to ask further questions from the facilitator and relevant additional information form part of PBL. This study found through a literature review that skills associated with PBL that can benefit Auditing Students include problem-solving, teamwork, communication, critical thinking, and self-regulated learning. It is recommended that Auditing educators consider implementing PBL for Auditing Students to develop various skills and improve students' performance. PBL is recommended as a pedagogical approach that equips students with various skills and can be used to enhance students' performance.

Keywords: Accounting education, Auditing, Problem-based learning, Students' performance

1. Introduction

Problem-based learning (PBL) has its origin in medical education in Canada and United States in the 1950s and 1960s and has successfully been adopted in various other disciplines, such as nursing, engineering, social work, law, management, science, business, economics, and accounting (Barrow, 1996; Stanley & Marsden, 2013; Ahmed & Kannaiah, 2018; Wyness & Dalton, 2018). Despite its long origin, the use of PBL in accounting education is limited (Stanley & Marsden, 2012; Ahmed & Kannaiah, 2018; Wyness & Dalton, 2018). Changes in audit education require effective and efficient teaching approaches that motivate students to adopt deep learning (Barac, Kirstein, Kunz & Beukes, 2016). Therefore, this study will review the literature on PBL to determine if the skills developed can benefit Auditing Students.

1.1 Problem-Based Learning

Problem-based learning forms part of the taxonomy of teaching and learning approaches (Barrows, 1996). PBL is broadly explained as a teaching approach that is student centred, and provides multidisciplinary scenarios and problems for groups to research and present their recommendations (Stanley & Marsden, 2012; Ahmed & Kannaiah, 2018; Wyness & Dalton, 2018). In PBL, learning outcomes are linked

to problems that need to be solved by students (Suryanti & Nurhuda, 2021). PBL allows students to think about a problem and integrate it with prior knowledge, a key to the learning process (Wyness & Dalton, 2018). In PBL, students direct their own learning and work in groups to develop the skills and knowledge required to solve the problems, while the instructors take the role of facilitator (Bergstrom *et al.*, 2016; Terblanche & De Clercq, 2020; Oosthuizen, De Lange, Wilmshurst & Beatson, 2021). PBL uses a problem-solving approach involving the interaction between facilitators and students to form a learning process, requiring students to solve unstructured problems (Fauzi & Respati, 2021). Since the adoption of PBL in accounting education is limited, it is essential to determine if skills developed through PBL can benefit Auditing Students. Therefore, this study will review literature on PBL and assess its beneficence to Auditing Students at undergraduate level.

1.2 Attributes of Problem-Based Learning

Stanley and Marsden (2012) argue that the PBL approach should comprise the following attributes:

- The learning process starts with a problem.
- The problem should be real life, unstructured, and probe for additional information.

- The problem should be multidisciplinary with the integration of other modules.
- Students must obtain additional information from other sources.
- Students work in smaller groups and exposed to self-regulated learning.
- Students existing knowledge, attitudes, and competencies are challenged, providing a platform for new learning.
- Concludes with the evaluation of students' experience to the learning process.

1.3 The Benefits and Challenges of Problem-Based Learning

Skills developed in PBL include questioning, research, critical thinking, communication, leadership, dealing with conflict and group dynamics, research, linking theory to practice, report writing, and reflection (Stanley & Marsden, 2012; Stanley & Marsden, 2013; Bergstrom *et al.*, 2016; Ahmed & Kannaiah, 2018; Wyness & Dalton, 2018). Despite these great benefits, teaching problem-solving skills tends to be more challenging to train than content. Material for teaching problem-solving skills needs to be developed by educators, which requires more time, effort, and creativity (Stanley & Marsden, 2013). Moreover, challenges relating to group work, such as conflict and free riders, should not be overlooked. Ahmed and Kannaiah (2018) argue that the benefits of PBL are unlikely to be met through traditional pedagogical approaches. Challenges that may be experienced in PBL include discomfort and pullback from students who are more comfortable with traditional teaching and learning approaches (Yew & Yong, 2014). Despite the great benefits of PBL, the fear to change hampers its implementation (Barut *et al.*, 2016). Therefore, educators should look at all sides of the coin in deciding to implement PBL approach to teaching and learning.

1.4 Problem-Based Learning in Accounting Education

Despite previous literature extensively debating the benefits of PBL, the adoption thereof within accounting education is limited (Stanley & Marsden, 2013; Bergstrom *et al.*, 2016; Hsu, Yen, & Lai, 2016). The major subjects in accounting education

include auditing, financial accounting, management accounting, and taxation. Wyness and Dalton (2018) argued that the shortfalls of PBL include not being transferable to other disciplines. Therefore, this paper aims to review the literature on PBL and identify skilled developed. Thereafter the skills developed will be assessed to determine if they can benefit undergraduate Auditing Students in institutions of higher learning in developing countries.

1.5 Problem-Based Learning and Skills Developed

There are some concerns that accounting students lack lifelong and self-directed learning, which is fundamental to succeed in their profession (Bergstrom, Pugh, Phillips & Machlev, 2016; Ahmed & Kannaiah, 2018). The lack of professional skills necessitated a call for academics to move from traditional teaching and learning to teaching approaches that actively encourage students to learn by doing (Bergstrom *et al.*, 2016; Apostolou *et al.*, 2017; Ahmed & Kannaiah, 2018). PBL, which allows students to learn by doing, is highly recommendable for accounting education (Stanley & Marsden, 2012; Ahmed & Kannaiah, 2018). This is because PBL can be used to achieve greater knowledge and understanding (Barut *et al.*, 2016). As such, this study will determine if skills developed through PBL are transferable to Auditing Students. Decisions regarding alternative curriculum structures are essential in accounting education to achieve relevant knowledge and students' performance (Ahmed & Kannaiah, 2018). Students' performance is judged not only by acquiring specific knowledge relating to their subjects but also through various skills and competencies relating to their profession (Gómez-Ortega & Macías-Guillén, 2022). Acquiring the necessary competencies that define each qualification requires students to learn by doing (Johnstone & Biggs, 1998; Gómez-Ortega & Macías-Guillén, 2022). Therefore, the PBL approach may be used to improve student performance.

The poor performance of students in accounting education may be partly attributable to the traditional teaching approaches. Challenges that come with traditional teaching and learning include passive students and limited student activity (Barut *et al.*, 2016; Sasson, Yehuda & Malkinson, 2018). Barut *et al.* (2016) and Suryanti (2016) argue that if nothing is done to change the traditional teacher-centered approaches, students will continue to be passive students and memorize concepts taught in lectures.

Therefore, accounting graduates exposed to traditional teaching and learning approaches show limited skills in analyzing, problem-solving, communicating, and giving opinions (Suryanti, 2016). On the other side, it is argued that the learning process should empower students to think, analyze and interact (Stanley & Marsden, 2012; Suryanti, 2016). Dolce, Emanuel, Cisi & Ghislieri (2019) found that accounting graduates lack various skills such as teamwork, communication, time management, and problem-solving skills, which are important in their professional space. Accounting curricula should find a way to instill an attitude of lifelong learning and information search and analysis skills in their teaching and learning processes to enhance students' performance (Ahmed & Kannaiah, 2018; Bergstrom *et al.*, 2016).

1.6 Problem-Based Learning and Skills Developed

The accounting field can benefit immensely through the introduction of PBL (Barut *et al.*, 2016). Given the increasing market demand for students who possess communication, collaboration, critical thinking, problem-solving, and self-learning skills, educators are under increasing pressure to re-think traditional approaches that rely primarily on information delivery (Pike *et al.*, 2017). Team work, communication, adaptability, time management, and self-management are among crucial skills required by accounting graduates to meet the challenges of today's diverse workplace (Plant, Barac & Sarens, 2019; Jackson & Meek, 2021). The accounting profession is challenged to develop problem solving, communication, and leadership skills through active learning instead of traditional passive learning approaches to achieve improved learning outcomes (Riley & Ward, 2017; Stephenson, 2017; Jackson & Stephanie, 2020). Therefore, this study will assess the skills developed through PBL and their applicability to Auditing Students. The limited studies conducted on PBL in accounting education and a lack of professional skills provides an opportunity to review literature on PBL and identify various skills developed. The skills developed through PBL will then be assessed to determine their transferability and benefits to Auditing Students.

2. Literature Review

There have been various calls for accounting education to move away from content-based knowledge to the development of professional skills and lifelong

learning skills to improve student performance (Stanley & Marsden, 2013; Bergstrom *et al.*, 2016). Despite PBL's potential benefits to accounting students, accounting educators ignore implementing it in their teaching and learning process (Stanley & Marsden, 2012). Wyness and Dalton (2018) argue that PBL is not a panacea, and its limitations include a lack of transferability in other disciplines. As such, this study assesses if skills developed through PBL skills can be transferable to Auditing Students.

Stanley and Marsden (2012) adopted a PBL for third-year accounting students in Queensland University of Technology (QUT) Australia by developing a FIRDE (Facts, Ideas, Research, Decide, Execute) model. The students in question have already acquired two years of accounting technical knowledge and were placed in groups of 4-5 for the whole semester. The PBL was run on a pilot and voluntary basis for three consecutive semesters (2006 & 2007). The project became compulsory for all students in the 2008 and 2009 semesters. The students were provided with unstructured accounting problems, requiring further research and additional information from the educator. The facilitator documented all questions asked by groups and responses to avoid future clashes. Students were later asked to submit written reports and make oral presentations. The study found that the PBL approach influenced problem-solving, questioning skills, and teamwork development. This study will assess if the skills developed through PBL can be beneficial to Auditing Students.

To expand their study Stanley and Marsden (2013) used PBL to deliver an accounting capstone at the Queensland University of Technology (QUT) in Australia. Using PBL in accounting capstone, individual subjects and content were integrated into a project covering real-life accounting problems. This was done to bring the subjects together and bridge the silo approach adopted throughout the accounting undergraduate qualification. The empirical results indicate that PBL integrates students' technical knowledge to unstructured multi-disciplinary problems and enhances professional skills. The development of professional skills may be key in Auditing students. Barut, Soares, de Araujo and Kanet (2016) found that PBL assists students in acquiring knowledge, problem-solving, communication skills, and becoming more self-confident. Additionally, Bergstrom *et al.* (2016) found that PBL is advocated because it supports various essential outcomes such as collaboration, self-regulated learning, student

engagement, and critical thinking. These skills are fundamental to Auditing Students.

Gerstein, Winter and Hertz (2016) used PBL for college accounting students with a group of 7-8 students and concluded that PBL could be used to teach ethics to accounting students. The study found that various skills essential for understanding ethics were developed through the PBL approach, such as flexible thinking, problem-solving, self-directed learning, collaboration, and intrinsic motivation. The development of ethics through PBL may be what Auditing Students need, given that the auditing profession is often on the spotlight for unethical behaviour. Hsu, Yen, and Lai (2016) assessed the influence of PBL on the learning outcomes of accounting students registered for the intermediate accounting course at a private university in northern Taiwan. The study adopted experiential learning whereby one group were taught on PBL and the other on traditional teaching approach. The study found that PBL enhanced the students thinking skills and ability to learn independently. These results are supported by Sugeng and Suryani (2020), who used the same methodology (a combination of PBL and traditional approach) to assess the learning outcomes of Financial Management students and found an improvement in critical thinking and self-regulated learning in students exposed to PBL. Critical thinking skills and the ability to learn independently are paramount to Auditing Students.

Suryanti (2016) conducted a study at Riau Islamic University (UIR) to determine if PBL differs from Drill Model. Two groups of accounting education students were used in 2014/2015, whereby one was exposed to PBL and the other to a conventional teaching approach. Suryanti (2016) found no difference in learning outcomes between students who were taught using PBL Model and Drill Model. The findings may be partly attributable to the lack of curiosity, creativity, and inability to search for knowledge in students exposed to PBL. Critical thinking skills are important because Auditing Students who possess such skills may be able to solve social and practical problems facing them.

Ahmed and Kannaiah (2018) analysed the status of PBL in accounting education by reviewing articles peculiar to PBL from 1998 to 2017 and found that although PBL is picking momentum in accounting education, it is done in countries such as the USA, Canada, Australia, Taiwan, and Malaysia. The study

concluded that major skills mentioned in the articles that implemented PBL include communication, problem-solving, teamwork, analytical skills, critical thinking, pleasure in learning, presentation, leadership, knowledge integration, and technology usage skills. The limited research in the South African context necessitates a need to assess if PBL can be transferable to Auditing Subjects. Wyness and Dalton (2018) assessed the value of PBL in introducing the sustainability concept for third-year accounting students at the University of South West, England. One of the key questions was whether students consider PBL a vehicle for learning sustainability accounting. The project was run on a voluntary basis for a group of students (34) throughout a semester. Students found PBL to be beneficial and requested that this method be adopted for the current curriculum. However, some students still felt the PBL should be combined with traditional lectures and guest speakers. This study found that skills developed include problem-solving, collaborative working, conflict management, research, report writing, and presentation skills. Again, these skills are considered essential for Auditing Students.

Gómez-Ortega and Macías-Guillén (2022) assessed whether PBL improves university students satisfaction with complex subjects. The study found that the combination of PBL and Information system Technology (ICT) improves students' motivation and performance relating to the subject. The inclusion of technology in teaching Auditing Students to improve performance will be in line with the Fourth Industrial Revolution. Nurkhin, Kardoyo, Pramusinto, Setiyani and Widhiastuti (2020) used the blended PBL method for the introduction to Accounting course in the first semester of the 2019-2020 academic year for accounting students at the Faculty of Economics, Universitas Negeri Semarang (UNNES). The authors adopted classroom action research and other social media platforms to enhance student understanding and performance. The study found that creativity and critical thinking skills were developed among students, which subsequently improved their performance. Similarly, Fauzi and Respati (2021) and Fitriani, Nurhuda, and Ina (2021) found that the PBL approach improves student's critical thinking skills. Auditing Students that are critical thinkers will be able to face uncertain real world.

3. Theoretical Framework

The constructivism theory guides this study. Constructivism places the learner at the center of

learning, not the teacher as the transmitter of knowledge (Biggs, 1996; Johnstone & Biggs, 1998; Barut *et al.*, 2016; Sasson *et al.*, 2018). PBL, like other experiential learning approaches, such as case-based instruction, project-based learning, and inquiry learning, originates from a constructivist approach to teaching and learning, which encourages students to construct their own knowledge (Bergstrom *et al.*, 2016). Barut *et al.* (2016) argue that group work, which is a major component of PBL, leads to constructive learning compared to teaching, which leads to the transmission of knowledge. This study reviews the literature on PBL, which is a student-centred approach that encourages students to learn by doing other than being transmitters of knowledge (Stanley & Marsden, 2013; Bergstrom *et al.*, 2016). Therefore, the constructivism theory is applicable to this study because it reviews skills acquired through PBL and assesses their transferability to Auditing Students.

4. Research Method

This study followed a qualitative research method through a systematic literature review. This study followed The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) that assist systematic reviewers transparency by reporting the reason for the review, how it was done, and the results from reviews (Page, McKenzie, Bossuyt, Boutron, Hoffmann, Mulrow, Shamseer, Tetzlaff, Akl, Brennan & Chou, 2021). The study objectives are twofold: Firstly, review accounting literature on PBL and note various skills developed. Secondly, assess if skills derived from PBL can benefit auditing

students. This study reviewed accounting education literature from international and local journal articles, and conference proceedings relating to problem-based learning. The word "problem-based learning" and "accounting" has been searched on Google scholar and sorted by relevance. The search displayed showed 777 results. The search was further refined to 10 years (2012 to 2022). Of the 777 results, it was identified that they include other disciplines, such as education, engineering, science, economics, and business management, which were excluded. Other documents on the problem-based method that does not relate to the context of this study were further excluded.

After exclusion, the authors remained with 29 articles to review. When reading literature, journal articles relating to seminal authors such as Biggs (1996) and Johnstone and Biggs (1998) were also reviewed, irrespective of them falling outside the search period. When reviewing the literature on PBL, the focus was on skills developed through PBL and whether those skills can be beneficial to Auditing Students. During the data analysis, skills developed through PBL which were mentioned more than twice in the reviewed literature were grouped into themes that were further assessed for beneficitation relating to Auditing Students.

5. Data Analysis

During the data analysis, common themes were identified through literature. This include skills that are mentioned more than twice in the literature. Refer to Table 1.

Table 1: Common Skills Developed Through PBL

Common Themes/Skills Developed Through PBL	Authors
Problem-solving	(Stanley & Marsden, 2012; Barut <i>et al.</i> , 2016; Gerstein <i>et al.</i> , 2016; Ahmed & Kannaiah, 2018)
Teamwork	(Stanley & Marsden, 2012; Bergstrom <i>et al.</i> , 2016; Gerstein <i>et al.</i> , 2016; Ahmed & Kannaiah, 2018; Wyness & Dalton, 2018)
Communication skills	(Stanley & Marsden, 2012; Barut <i>et al.</i> , 2016; Ahmed & Kannaiah, 2018)
Critical thinking	(Bergstrom <i>et al.</i> , 2016; Hsu <i>et al.</i> , 2016; (Ahmed & Kannaiah, 2018; Nurkhin <i>et al.</i> , 2020; Sugeng & Suryani, 2020; Fauzi & Respati, 2021)
Self-regulated learning	(Bergstrom <i>et al.</i> , 2016; Gerstein <i>et al.</i> , 2016; Hsu <i>et al.</i> , 2016; Sugeng & Suryani, 2020)

Source: Authors

6. Results and Discussion

In the discussion, common skills developed through PBL are unpacked and assessed if they are beneficial to Auditing Students.

6.1 Problem-Solving Skill

In a PBL environment, students are offered with problems that are multidisciplinary in nature (Ahmed & Kannaiah, 2018; Jackson & Meek, 2021). Auditing educators can start by designing small unstructured problems in their teaching as a way to embrace PBL. The problems designed can incorporate auditing with other subjects such as accounting, tax, and financial management. Auditing students can benefit from solving unstructured problems presented by educators. This is because auditors require knowledge of other subjects to perform the audit effectively.

6.2 Team Work

Teamwork is a powerful tool that enables different talents, skills, and personalities to gather together to solve a common problem (Oosthuizen *et al.*, 2021). In PBL, students work in smaller groups, and the class looks like a tutorial (Stanley & Marsden, 2012; Stanley & Marsden, 2013; Ahmed & Kannaiah, 2018). This gives an opportunity for students to learn from each other, interact with their peers, and make discussions, and presentations. Problems that come with group work, such as group dynamics, free riders, and allocating marks to groups and individuals should not be overlooked (Wyness & Dalton, 2018). Exposure to teamwork may benefit Auditing Students as professional auditors work in teams.

6.3 Communication Skill

In PBL, discussions are made within the groups and with the facilitator improving verbal communication skills (Stanley & Marsden, 2013; Wyness & Dalton, 2018). PBL also requires students to make written reports and oral presentations (Stanley & Marsden, 2012; Stanley & Marsden, 2013). Communication also happens amongst the team to seek clarity about certain concepts before taking it further with the facilitator. Presentation of task assists students in improving their communication skills (Ahmed & Kannaiah, 2018; Wyness & Dalton, 2018). The development of effective communication skills can be beneficial to Auditing Students. This is because professional auditors communicate with their clients

daily. Therefore, effective communication through written reports or oral presentations is critical in auditing context.

6.4 Critical Thinking Skills

In PBL, students are afforded an opportunity to think critically (Sugeng & Suryani, 2020; Fauzi & Respati, 2021). This may be because they are presented with unstructured problems with no right or wrong answer, which challenges their thought process. Developing critical thinking skills may benefit Auditing Students because auditors are often confronted with problems that have no clear solution.

6.5 Self-Regulated Learning

Students exposed to PBL develop self-regulated learning (Hsu *et al.*, 2016; Sugeng & Suryani, 2020). This can be attributable to more self-confidence (Barut *et al.*, 2016), intrinsic motivation (Gerstein *et al.*, 2016), pleasure in learning (Ahmed & Kannaiah, 2018) noted in students exposed to PBL. Auditing Students can benefit from taking ownership of their own learning rather than waiting for educators to instruct the learning process.

7. Conclusion and Recommendations

This paper reviewed accounting literature on PBL to determine the skills developed and further determined if common skills identified can be beneficial to Auditing Students. Common skills developed through PBL include problem-solving, team work, communication, critical thinking, and self-regulated learning. These skills developed are all considered beneficial to Auditing Students. This is because PBL starts with an unstructured multifaceted real-life problem (Stanley & Marsden, 2013; Ahmed & Kannaiah, 2018; Wyness & Dalton, 2018). This applies to Auditing Students as professional auditors often face complex client's problems and need to bring multifaceted knowledge. Secondly, in PBL students work in smaller teams, and each team member is responsible for performing certain tasks. Individual work gets integrated into the teamwork after review and discussions (Stanley & Marsden, 2013). Learning how to effectively work in teams can benefit Auditing Students. Again, mastering communication skills cut across various disciplines, including Auditing Students. Similarly, developing critical thinking skills may unlock other skills required of Auditing Students. Lastly, students that regulate their own

learning will go a long way in challenging the conventional teaching approaches.

8. Recommendations and Future Research

Based on the results from literature it is highly recommendable that PBL be adopted for Auditing Students. This is because the skills identified through PBL are beneficial to Auditing Students. However, the extra effort, time, and creativity from the educator's side should not be overlooked to make the project successful. Future studies can conduct an empirical study after exposing students to PBL to determine if the skills can indeed be developed in Auditing Students.

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