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A Systematic Review on University Students' Learning Approaches for Accounting Courses

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Abstract

The present study conducted a systematic literature review and presented the themes on the approaches adopted by university students in learning accounting courses. The review was carried out based on the review protocol, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses, PRISMA 2020 statement. The articles included in the review were selected from two leading databases namely Scopus and Web of Science (WoS) published in the journals in English language from the year 2021 to 2025. Based on the thematic analysis carried out with the assistance of ChatGPT, there were five themes developed namely (1) collaborative and cooperative learning; (2) active learning; (3) blended learning; (4) self-directed or self-regulated learning; and (5) deep vs surface learning. This study makes significant contributions to the body of literature on the accounting education as well as for practical purposes in which lecturers and students could apply for better and effective teaching and learning, hence, improved academic performance.

Keywords: Learning Approach, Accounting course, University Student, Systematic Review, Adopt

Introduction

Accounting education has evolved significantly over times. This evolvement occurred as a result of the demand of the market and employers towards accounting graduates. Accounting graduates are expected to be academically good to meet the demand. Students' academic performance is significantly affected by the way they learnt, that is learning approaches used for their study. The learning approaches are commonly selected by students based on the nature of curriculum and assessments requirements of a particular course (Dinsmore, 2017; English et al., 2004). At the introductory level of accounting course at university, students are usually required to understand and grasp basic accounting principles which usually learned through conventional way, that is, lecturers' explanation in classroom. Meanwhile, the intermediate and higher level of accounting courses require approaches beyond the explanation in the classroom. Students are not solely relied on the conventional way of learning where they received inputs from educators in classroom, but other several learning

approaches could be used together to suit the needs of the course, hence, create effective learning environment.

The combined use of several learning approaches calls for effective learning environment. In order to create effective learning environment, Kruger (2019) pointed out the importance of students selecting the right learning methods or approaches along with the educators' teaching method. In other words, the effective learning environment is created by both educators and learners i.e. the students. There are several justifications for applying the right learning approaches in accounting courses particularly at university level. First, the university is committed to produce high quality accounting graduates with important skills such as problem-solving and critical thinking skills (Papageorgiou, 2023) to meet the demand of potential employers (Betakan et al., 2024). Second, the learning approaches used in accounting education would improve academic performance, shaping and enhance students' competence (Sari et al., 2025). Third, right learning approaches adopted for different curriculum and assessments ensure that students grasp the understanding of accounting knowledge at all level.

There are noticeable significant benefits contributed by the selecting the right approaches for accounting education acknowledged in past studies. Although there were numerous studies on learning approaches adopted by university students, however, the efforts to review these studies are still limited. The systematic review of literature in relation to the education conducted in prior studies have different focus than students' learning approaches for accounting courses, for instance, focus only on active learning approach in classroom (Sari et al., 2025), factors for success in business and accounting education (Botha et al., 2025), AI in education (Wang et al., 2024), and teachers' efficacy (Ramakrishnan and Mohamad Salleh, 2018).

This study addresses the gap by conducting a systematic literature review focuses on learning approaches employed by university students particularly for accounting courses. The systematic review was guided by the research question: 'What are the approaches adopted by university students in learning accounting courses?'. This systematic review offers a novel synthesis of empirical evidence from past researches in relation with the learning approaches in university, particularly on accounting education. Furthermore, this systematic review has utilized the AI namely ChatGPT as a tool to enhance the review process and for themes development.

Methodology

Review Protocol – PRISMA

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement. PRISMA 2020 consists of 27 checklist which can be modified depending on the needs of the review (Page et al., 2021). PRISMA allows the author to conduct a transparent, complete and accurate systematic review.

Formulation of Research Question

The research question of this study was formulated based on the PICo (population, interest, context) mnemonic, the idea of Lockwood et al. (2015) which has been increasingly applied

in the systematic literature review. Based on the three concepts in PICo and references to related studies, the author included these keywords for the review, university students (population), accounting course (interest), and learning approaches (context). The selected keywords guided the author to formulate the research question: What are the approaches adopted by university students in learning accounting courses?

Systematic Searching Strategies

Three main processes were undertaken in the systematic searching strategies namely identification, screening and eligibility (refer to Figure 1).

Identification

The main keywords developed based on the research question were enriched by looking for for the synonyms, related terms and variations. The identification process relied on keywords suggested thesaurus.com, keywords suggested by the Artificial Intelligence (AI) such as ChatGPT and Deepseek, keywords used in past studies, keywords suggested by Scopus, and keywords suggested by experts. The author enriched the keywords by utilizing the full search string including the use of Boolean Operators, Truncation, Wildcards, Field Codes, and phase searching on Scopus and Web of Science (see Table 1). After the full search string was performed on the two databases, the author retrieved a total of 585 articles during the identification stage.

Table 1
Search Strings performed

Database	Search strings
Scopus	TITLE-ABS-KEY (("learning approach*" OR "learning strateg*" OR "study strateg*" OR "instructional method*" OR "learning method*" OR "learning technique*" OR "cognitive strateg*" OR "metacognitive strateg*" OR "learning style*" OR "study method*") AND (accounting OR "accounting course*" OR "accounting education" OR "accounting class*" OR "accounting subject*" OR "accounting program*" OR "accounting curricul*") AND ("university student*" OR "college student*" OR "higher education student*" OR "undergraduate*" OR "tertiary student*" OR "post-secondary student*" OR "higher institution student*"))
WoS	TS=(("learning approach*" OR "learning strateg*" OR "study strateg*" OR "instructional method*" OR "learning method*" OR "learning technique*" OR "cognitive strateg*" OR "metacognitive strateg*" OR "learning style*" OR "study method*") AND (accounting OR "accounting course*" OR "accounting education" OR "accounting class*" OR "accounting subject*" OR "accounting program*" OR "accounting curricul*") AND ("university student*" OR "college student*" OR "higher education student*" OR "undergraduate*" OR "tertiary student*" OR "post-secondary student*" OR "higher institution student*"))

Screening

During the screening process, the author established the criteria for articles inclusion in the systematic review, as summarized in Table 2. The first inclusion criterion was the type of document, as recommended by Linares-Espinos et al. (2018), to retrieve the article journals because the articles had gone through a rigorous review process to ensure it is of quality. Secondly, the articles selected must be in English language only in order to avoid misunderstanding and confusion. Furthermore, the articles published between 2021 until

2025 were included for review. This timeline was chosen because it is considered as up-to-date, hence suitable for the systematic review. After the consideration of inclusion criteria and duplication of articles, 475 articles were removed and the remaining 110 articles were considered for the eligibility process.

Table 2
Screening Criteria

Criteria	**Inclusion**
Document type	Article journal
Language	English
Timeline	2021 to 2025

Eligibility
A total of 110 articles were studied during the eligibility process. In the eligibility process, the author re-screened the articles by reviewing the titles and abstract to include only highly relevant articles to achieve the objective of this study. Hence, 90 articles were excluded due to the focus on non-accounting education and some articles were in the form of review. At the end of this process, the final 20 articles were eligible for quality appraisal.

Quality Appraisal
The quality appraisal process was carried out by the lead author with the assistance of one co-author. The quality of the articles was appraised based on the six Quality Assessments (QAs) for systematic literature review established by Abouzahra et al. (2020) as presented in Table 3. Each criterion must be clearly stated in the article to be given a score of 1, otherwise, 0 would be awarded. The scoring procedure employed to evaluate the QA was Yes (Y) = 1, Partly (P) = 0.5 or No (N) = 0, in which the articles considered to be at a good quality if the score is equal to or more than 3 (QA $\geq$ 3). The final results of the process lead to all 20 articles that passed the eligibility process considered for systematic review. These articles satisfied the criteria as quality articles with the QA score of more than 3.

Table 3
Quality Assessments Criteria

QA1. Is the purpose of the study clearly stated?
QA2. Is the interest and the usefulness of the work clearly presented?
QA3. Is the study methodology clearly established?
QA4. Are the concepts of the approach clearly defined?
QA5. Is the work compared and measured with other similar work?
QA6. Are the limitations of the work clearly mentioned?

Source: Abouzahra et al. (2020)

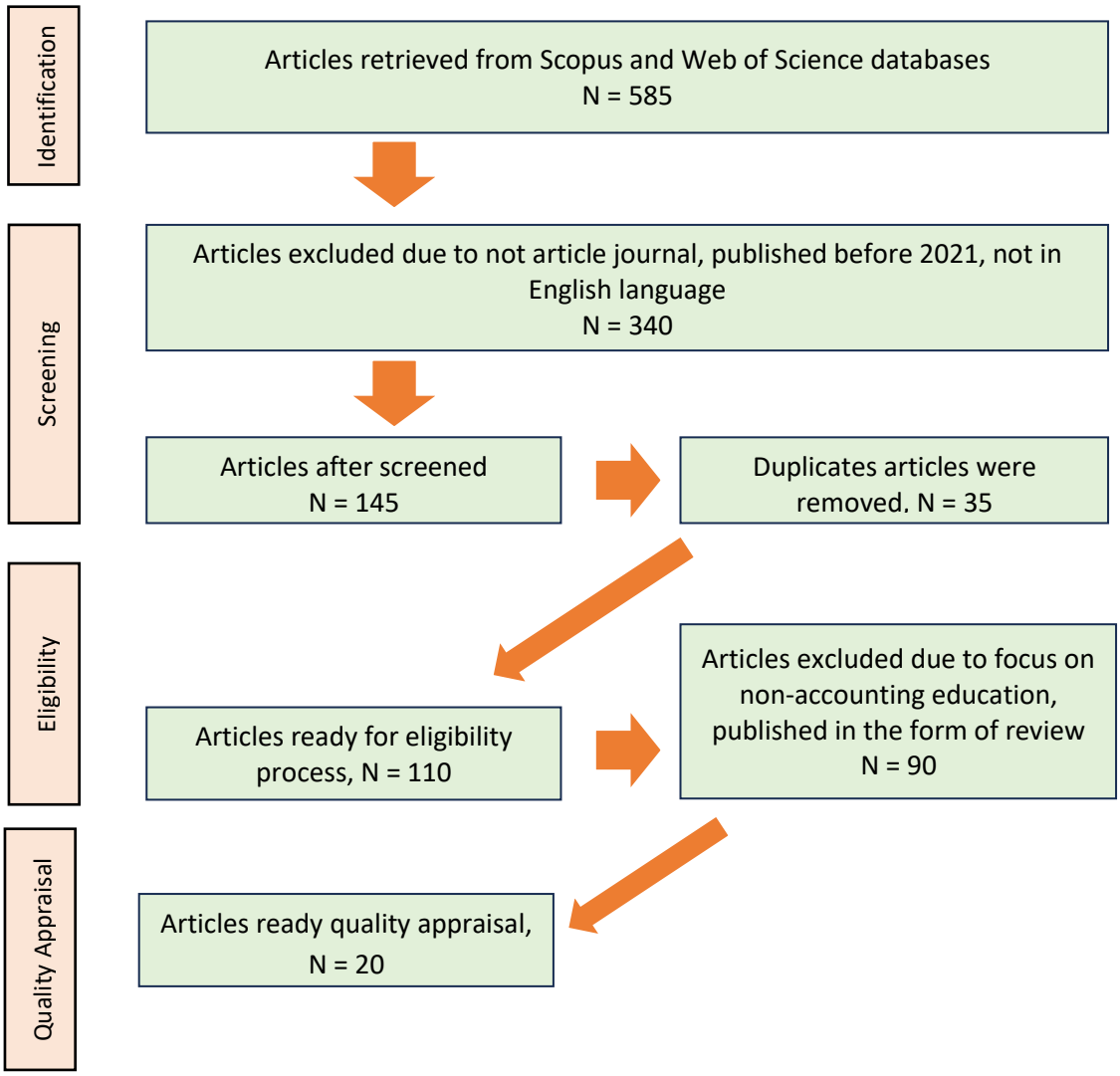

Figure 1: Flow Diagram of three processes in systematic review
(adapted from Shaffril et al., 2024)

Data Abstraction and Analysis

The analysis of data extracted from the articles was guided by the inductive thematic analysis approach as proposed by Naeem et al. (2025) using AI, particularly ChatGPT. Naeem et al. (2025, p.15) asserted that "AI can analyse extensive sets of data, helping recognise patterns, keywords, and themes that would otherwise be missed or take an inordinate amount of time to uncover". This indicated that AI only serves as a tool that supplement and enhance the thematic analysis processes, not to take over the task of the researcher. Naeem et al. (2025, p.15) further added that "the researcher needs to be fully involved in the process, repeating any stages of the analysis and providing additional details to AI to achieve the research aim".

In the study by Naeem et al. (2025), the authors introduced six steps involved in thematic analysis for systematic literature review using ChatGPT, together with the suggested ChatGPT prompts. This study is nonetheless has adapted the first four out of six steps for the analysis. The four steps considered to be sufficient to achieve and answer the research objective and research question. The ChatGPT prompts used in step 1 until step 3 of the analysis are presented in Table 4. In step 1, ChatGPT was familiarized with the background and the general

idea of this study by including the objective of systematic review and research question in the prompt. Also, ChatGPT was requested to extract the data in association with learning strategies. The extracted data was compiled in which later, in step 2, ChatGPT was requested to develop the initial codes of the thematic analysis. During this process, the extracted data was grouped based on quotes with similarities or connections without any specific themes. In step 3, ChatGPT re-analyzed the initial codes data to develop themes, where, at this stage, 6 themes were developed. Finally, in step 4 (validation), the developed themes were checked by the authors for its relevancy to the study and validated by expert, resulted in only 5 themes acknowledged related to learning strategies.

Table 4
ChatGPT prompts

Steps	Explanation
Step 1: Familiarization with background information and quote selection	The prompts used in step 1 as proposed by Naeem et al. (2025): *I am conducting a systematic review titled [research title].* *Objective of the systematic review is [research objective].* *Research question: [main research question].* *Based on the attached article, extract key sentences from the results/findings section that show [the intended quotes from articles].*
Step 2: Coding (initial codes)	The prompts used in step 2 as proposed by Naeem et al. (2025): *Based on the extracted data, group quotes with similarities or connections. Each quote must include a citation.*
Step 3: Themes development	The prompts used in step 3 as proposed by Naeem et al. (2025): *Based on the attached file, please generate themes (include a definition for each theme) together with representative excerpts that you have extracted. The extracted data must be accompanied by citations.*

Results and Discussion

This section consists of two parts namely, (1) background of selected articles; and (2) the developed themes. The first part of the section summarizes the background of 20 articles included in the thematic analysis based on geographical location, research method, and year of publication. The second part discusses each of the five developed themes in association with the learning strategies adopted by university students in accounting courses.

Background of Selected Articles

This systematic review includes 20 articles whereby the articles had studies conducted in Indonesia (2 articles), Portugal (2 articles), Nigeria (2 articles), and others (1 article each from Sri Lanka, Saudi Arabia, Spain, Ghana, Egypt, Belgium, Colombia, Australia, South Africa, Japan, Brazil, Malaysia, the US, and multi-countries). In term of research method, 15 articles utilized quantitative, 4 qualitative, and 1 mixed-method studies. Of the 21 articles analyzed, 2 articles were published in 2025, 5 articles were published in 2024, 6 articles were published in 2023, 3 articles were published in 2022, and 4 articles were published in 2021.

The Developed Themes

Based on the thematic analysis, there were 5 themes identified with regards to learning strategies adopted by university students in learning accounting courses. The themes are: (1)

collaborative and cooperative learning; (2) active learning; (3) blended learning; (4) self-directed or self-regulated learning; and (5) deep vs surface learning;

Table 5
The Developed Themes

Authors and Year	Country	Method of Research	CCL	AL	BL	SL	DVSL
Abeysekera et al. (2024)	Sri Lanka	Quantitative			√		
AlRasheed and AlGhamdi (2023)	Saudi Arabia	Qualitative		√		√	
Awashreh et al. (2025)	Multi-country	Quantitative			√		
Betakan et al. (2024)	Indonesia	Quantitative					√
Cunningham et al. (2023)	United States	Quantitative		√			
Diez-Busto et al. (2023)	Spain	Mixed methods		√			
Dominic and Kwarteng (2023)	Ghana	Quantitative	√				
Elmasree et al. (2023)	Egypt	Quantitative	√	√	√	√	
Everaert et al. (2024)	Belgium	Quantitative		√	√	√	
Gaviria et al. (2022)	Colombia	Quantitative	√	√	√	√	
Natoli et al. (2022)	Australia	Quantitative	√	√			√
Okougbo and Okike (2021)	Nigeria	Quantitative	√	√			
Pius and Chukwuka (2023)	Nigeria	Quantitative		√			
Rodrigues and Morais (2021)	Portugal	Qualitative	√			√	
Rodrigues (2022)	Portugal	Qualitative		√	√	√	
Rudman and Sexton (2025)	South Africa	Quantitative	√		√	√	
Sugahara and Cilloni (2021)	Japan	Quantitative	√	√	√	√	√
Warsono et al. (2024)	Indonesia	Quantitative		√	√	√	
Wohlemberg et al. (2024)	Brazil	Qualitative	√	√	√	√	
Zainal et al. (2021)	Malaysia	Quantitative		√			√

CCL = Collaborative and cooperative learning; AL = Active learning; BL = Blended learning; SL = Self-directed learning; DVSL = Deep vs surface learning.

Collaborative and Cooperative Learning

The first theme developed is collaborative and cooperative learning (CCL). Of 20 articles, 9 articles concluded that CCL is one of the effective learning strategies adopted by undergraduate students for accounting and non-accounting courses. The CCL is an approach whereby students working in groups (Elmasree et al., 2023) or partaking in peer-to-peer sessions (Gaviria et al., 2022) in order to achieve the learning objective of a particular course. The CCL is commonly applied by students in completing group assignments, where, the group members are assigned with specific task, research either individually or as a group, gathering and analyzing the input, and finally submitting the task as group task.

The CCL offers several benefits. The CCL emphasizes the importance of peer supports i.e. peer-tutorial and peer-evaluation for knowledge sharing and to build collective understanding about a particular subject (Cunningham et al., 2023; Diez-Busto et al., 2023;

Dominic and Kwarteng, 2023; Gaviria et al., 2022; Sugahara and Cilloni, 2021). Also, Elmasree et al. (2023), Natoli et al. (2022), Rodrigues and Morais (2021), and Okougbo and Okike (2021) added that the CCL promotes greater teamwork due to diverse background of the team members which significantly enhance their understanding of complex accounting topics.

Active Learning

The second theme developed from the thematic analysis is the active learning (AL). The significant impact of AL strategy for education has been increasingly acknowledged in prior studies as evidenced by the results of the 14 out of 20 articles that mentioned about the AL (refer to Table 5). However, this method is considered by AlRasheed and AlGhamdi (2023) as 'still new' method of learning in Saudi Arabia's university students. The strategy includes the active participation of students in project-based learning (PBL), case studies, game-based activities, simulations and discussions rather than passively receiving information from lecturers.

Wohlemberg et al. (2023), Pius and Chukwuka (2023), Elmasree et al. (2023), and Sugahara and Cilloni (2021) highlighted the positive impact of the AL method through gamification in accounting courses. Students who utilize the active learning through gamification are more likely to achieve higher academic performance. In addition, Wohlemberg et al. (2023) suggested that the AL methods such as PBL, case studies and simulations allow students to engage in a healthy argument to achieve consensus and perceived to be more effective way to develop problem solving skills through interactive discussions (Warsono et al., 2024; Wohlemberg et al., 2023), debates and reflection of results (Diez-Busto et al., 2023).

The AL requires students to plan, design and execute activities, apply communication and presentation skills (Diez-Busto et al., 2023). The activities conducted in the AL such as game-based and simulation activities capture the interest of the students to engage (Wohlemberg et al., 2023) notwithstanding they are challenging. Students are more motivated to do the activities, hence, resulting in a better knowledge retention (Pius and Chukwuka, 2023) when corroborated with the traditional learning method as it is considered by Wohlemberg et al. (2023, p.16) as "more effective for the learning context in certain situations". The AL also helps develop competencies and serve as preparation for the real working world.

Blended Learning

The blended learning (BL) is the third theme. The strategy refers to a learning approach that combines the elements of traditional and digital learning which offers flexibility and interactivity in learning (Awashresh et al., 2025; Inusah and Debrah, 2021). 10 articles included in the systematic review mentioned about blended learning strategy adopted in learning accounting courses. Awashresh et al. (2025) refers blended learning or hybrid learning as an effective and engaging learning that improves students' problem-solving skills at both undergraduate and postgraduate level of studies.

In BL strategy, Wohlemberg et al. (2024) asserted that traditional learning is not completely abandoned replaced but supplemented by the use of digital learning. Abeysekera et al. (2024) and Gaviria et al. (2022) refers the digital learning as online learning or virtual learning that composed the elements of content, learning activities, and contextualization. Higher institutions that implemented the online platform called learning management system (LMS)

as a medium of communication, giving instructions, and sharing learning materials between lecturers and students perceived it as a helpful, easy-to-use, and up-to-date learning platform (Abeysekera et al., 2024). The use of LMS improves students' learning quality and satisfaction due to its user-friendly feature where lecturers can easily update learning materials when necessary.

The importance of digital learning and its skills had been greatly highlighted after the Covid-19 (Rodrigues, 2022), especially with the advancement of technologies and the rise of AI. Learning has gradually shifted from only traditional, in-person classroom sessions to blended learning. The traditional learning strategy emphasizes memorization of facts which Warsono et al. (2024) believed that it may hinder students' development of critical thinking skills. By incorporating the digital learning into the learning approaches which often not adequately taught in accounting curriculum, it becomes a value-added factor that complements students' accounting knowledge required by employers (Rodrigues, 2022).

Self-directed or Self-regulated Learning

The fourth theme established from the analysis is self-directed or self-regulated learning (SSL). 10 out of 20 reviewed articles had pointed out that one of the approaches utilized by students in learning accounting courses was the SSL. Prior studies refer SSL as an approach whereby students take control of their own learning process. In the SLL, students identify their learning needs (Wohlemberg et al., 2024), set their own study goals, manage their own schedule and study time, independently search for their own study resources and monitor the progress of their study (Rudman and Sexton, 2025; Wohlemberg et al., 2024; Rodrigues, 2022).

The use of SSL is not necessarily adopted by students when preparing for examinations, but students are also expected to learn autonomously and independent in completing a particular task in a team for PBL, case studies, and game-based activities (Wohlember et al., 2024; AlRasheed and AlGhamdi, 2023) as well as in the collaboration work with peers. Students are commonly assigned individual task in PBL activities which demand them to be self-taught (Wohlemberg et al., 2024), decide what and how to solve a problem to contribute to what are lacking in the team (Rudman and Sexton, 2025). Likewise, students are nonetheless need to equip themselves with some basic knowledge, hence, self-regulate about certain topic which later could be confirmed by the peers. These indicated that the SSL is one of the important aspects that contribute to effective AL and CCL.

As students have full control over their learning process when utilizing the SSL, students perceived the SSL as an approach with a great freedom without the control of the lecturer. However, it came together with a responsibility to oversee their own learning process (Rudman and Sexton, 2025; Wohlember et al., 2024) outside the classroom. The positive side of the SSL is that students learn best through their own experience and knowledge (Rodrigues and Morais, 2021).

Deep vs Surface Learning

The last theme developed related to learning strategy is deep versus surface learning (DVSL), consists of deep learning and surface learning. Only 4 articles discussed about DSL approach to learning accounting. The studies were carried out by Betakan et al. (2024), Natoli et al.

(2022), Sugahara and Cilloni (2021), and Zainal et al. (2021) to explore the learning approach adopted by undergraduate accounting students. In the DVSL, Betakan et al. (2024) and Zainal et al. (2021) pointed out that different groups of students (deep learning students versus surface learning students) spend different amount of time on learning, and eventually determines how they learn.

Natoli et al. (2022) emphasized that deep learning students (DLS) is more likely attaining high quality learning outcome as the DLS engage with the content, connect new and prior knowledge, attempt to understand and apply concepts and principles in their study. Such a learning approach allows students to develop critical thinking along with improving problem solving skills through assignments and mini projects. The key factor to students adopting deep learning is motivation to achieve a better academic performance (Zainal et al. 2021).

On the other hand, surface learning students (SLS) tend to memorize information and reproduce the gathered information which perceived to be essential for them to progress to higher level (Sugahara and Cilloni, 2021) and for assignment completion (Zainal et al., 2021). The aim of this approach as highlighted in the study of Natoli et al. (2022) is to avoid failure with minimum effort. The SLS were not fully interested in exploring beyond what they were taught in classroom. Natoli et al. (2022) refers the SLS as passive learner who abide by the instructions of the lecturers.

Deep learning is not always better than surface learning as surface learning is a foundation to deep learning. Betakan et al. (2024, p.2) inserted that “by balancing deep and surface learning, strategic learners can perform well in examinations while also developing a robust understanding of accounting”. In other words, the most effective learning involves the combination of both deep and surface learning where the foundation knowledge from the surface learning forms the basis for deeper learning.

Conclusion

This study has systematically reviewed the learning strategies adopted by university students in accounting course. This study offers several significant contributions to the literature and for practical purpose. First, the results can be used as basis for the researchers particularly the academician to carry out action research to investigate which learning strategies are the most effective for accounting courses at university level. Second, from the student’s standpoint, there are several approaches they can choose in learning accounting courses, hence, maximize their learning experience. Students may opt for learning approach(es) that best suits their goals, time, styles and contextual. Third, based on the results generated from the thematic analysis, the lecturer may choose the teaching strategies that complement students’ learning approaches.

Some approaches would be more effective when used together with others. This can be seen from the discussion of the theme that the learning approaches identified can be used together depending on the needs of the course and its assessments to maximize academic performance. For instance, the SSL form the foundation for CCL and AL to complete a problem-based project, in which students are usually required to self-taught a particular sub-topic and finally provide their opinion to the peer or team. This evidenced that several learning approaches could be adopted simultaneously to achieve better learning outcomes.

Hence, future research may incorporate as several learning strategies as variables to identify their impacts on academic performance.

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