

Exploring the Impact of Self-Directed Learning Approaches on Academic Achievement from the Perspective of University Educators in Libya

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Abstract

The purpose of this study is to investigate the impact of SDL on the academic performance of college students in higher education institutions from the viewpoint of lecturers in universities, particularly the Libyan educational system. The methodology employed for this research is a systematic literature review (SLR) based on PRISMA 2020 standards, which involves systematic identification, screening, eligibility, and inclusion of articles. Data collection was conducted from six reliable scientific sources, namely Scopus, Web of Science, ScienceDirect, ERIC, PubMed, and Google Scholar, for publications from 2021 to 2026. A total of 20 scientific articles were selected for analysis through thematic synthesis techniques. The findings suggest that SDL significantly impacts the academic performance of students in higher education positively and consistently. It enhances self-regulation, motivation, self-efficacy, time management skills, and engagement in academic activities. Besides, the effectiveness of SDL can be affected by psychological aspects like motivation and self-efficacy and environmental aspects of learning, such as lecturer support and digital learning technology. Additionally, the results suggest that SDL is more successful when used in adaptive and technology-enhanced learning approaches such as online learning and AI-powered learning. Self-directed learning contributes significantly to enhancing the quality of learning in higher education through promoting independent learning and academic success. The research provides theoretical insights into developing a theory of self-regulated learning while offering practical insights into developing self-regulated learning approaches among lecturers and educational policymakers.

Keywords: *Academic Achievement, Higher Education, PRISMA, Self-Directed Learning, Systematic Review*

Introduction

The current educational paradigm in the world has experienced remarkable changes as a result of technological changes and new developments in pedagogy. This means that there has been a move away from traditional forms of learning towards learner-based forms of learning characterized by high levels of engagement, self-regulation, and reflection (Shen, 2008). Self-directed learning (SDL) represents one of such methods used under the umbrella of learner-centred approaches. Under SDL, learners play an active part in determining their learning needs, establishing their own learning goals, selecting learning materials, and reflecting on their achievements (Knowles, 1975). The theoretical framework for SDL revolves around the core principles of humanistic education based on

learners' autonomy and self-responsibility (Rogers, 1983; Dewey, 1916; Freire, 1998). The growing recognition of SDL has been prompted by its benefits for enhancing motivation, critical thinking and lifelong learning and also its positive influence on academic performance in disciplines such as English language learning (Song & Hill, 2007; Loyens et al., 2008; Cazan & Schiopca, 2014; Lee et al., 2014). Despite all of these benefits, the actual use of this technique remains limited within a number of developing countries, wherein higher education still uses traditional methods of learning based on memorization and thus does not promote development of learners' independence and critical thinking abilities (UNESCO, 2022; Al-Abbar, 2011).

Moreover, there are several barriers to education reform in Libya such as lack of institutional support, weak infrastructure and insufficient development of the trainers (Abu Shadid & Al-Habal, 2014), which have hindered application of the learner-centered approach within higher education. Taking into account crucial importance of trainers in the formation of SDL-positive environment (Pontis et al., 2020), it is essential to evaluate their perspective in this regard. However, the literature review revealed that there are few studies concerning this matter in relation to the situation in Libya (Jha, 2015). Therefore, this paper aims at analyzing the opinions of university trainers about self-directed learning, its effects on academic achievement, role of trainers in SDL promotion, and potential obstacles.

Review of Related Literature

Previous studies consistently demonstrate that self-directed learning (SDL) significantly improves students' academic achievement. Siswanto (2024) found that students in the SDL-based learning group achieved higher post-test scores, showing greater independence in setting goals, managing strategies, and evaluating progress. Similarly, Yang et al. (2025) reported that integrating SDL within structured frameworks enhances both self-efficacy and academic performance. Research by Eluemuno et al. (2025) further highlights SDL's strong positive influence in digital learning environments, where students adapt more effectively. Finn et al. (2024) emphasized that SDL effectiveness depends on curriculum design, institutional support, and learning environments. Moreover, studies reveal that SDL readiness, self-management, and autonomy contribute significantly to academic success (Mbeau-ache et al., 2021; Kim & Park, 2024). Strategies such as self-testing, reflection, and goal setting, supported by AI-based systems, further enhance learning outcomes and engagement.

Objectives

This paper is derived from the theoretical phase of an ongoing PhD research project entitled: **"Exploring the Impact of Self-Directed Learning Approaches on Academic Achievement from the Perspective of University Educators in Libya"**. The systematic literature review presented here constitutes the foundational framework for the subsequent empirical phase of the doctoral study, which is still in progress.

Methodology

The approach used in this research was the systematic literature review, following the PRISMA 2020 guidelines for conducting systematic reviews and meta-analyses. This approach was applied to identify, analyze, and synthesize previous scientific research studies related to the effect of SDL on student academic performance from the perspective

of university lecturers in Libya. The reason for selecting PRISMA 2020 is that it ensures high transparency in the process of selecting scientific research papers.

The sources of data used in this study were extracted from scholarly articles found in internationally recognized scientific journals, which were gathered from several databases, such as Scopus, Web of Science, ScienceDirect, ERIC (Education Resources Information Center), PubMed, and Google Scholar. Only articles published between 2019 and 2026 were considered to guarantee that the articles chosen were fresh and recent and could be applicable to the existing research trends in higher education. The search method for gathering relevant literature was conducted using several keywords including "self-directed learning," "independent learning," "student achievement," "academic performance," "higher education," "university lecturers' perception," and "Libya education system." In addition, Boolean operators were used to conduct the search process. For instance, the search process involved ("self-directed learning" OR "independent learning") AND ("student achievement" OR "academic performance") AND ("higher education" OR "university lecturers").

Reputable journal articles that were indexed by Scopus or Web of Science within 2020 and 2026 were selected as inclusion criteria for this research project. They should be dealing with self-directed learning at university or other educational institutions and include data on students' academic performance or achievement. It is important to note that the sources used might be of qualitative, quantitative, or mixed method in terms of their research type. On the contrary, exclusion criteria included the following elements: inaccessible sources of information (articles that are only abstracts or have no full text), sources that do not deal with SDL topic, sources about self-directed learning at primary and secondary educational institutions, duplicates, and sources of information that are non-scientific (such as opinion papers). Finally, thematic synthesis was selected as a data analysis technique, which involved grouping scientific data into several topics, including the impact of SDL on students' achievements, effective SDL, lecturers' role in promoting SDL, and others.

Validity and reliability of data were ensured by employing credible scientific databases, utilizing the PRISMA method for selecting literature, triangulating sources from different international journals, and repeating the search procedure to guarantee consistent results. In addition, the study employed the PRISMA 2020 flow chart for selection of literature, which comprises the processes of identification, screening, eligibility, and inclusion of research sources.

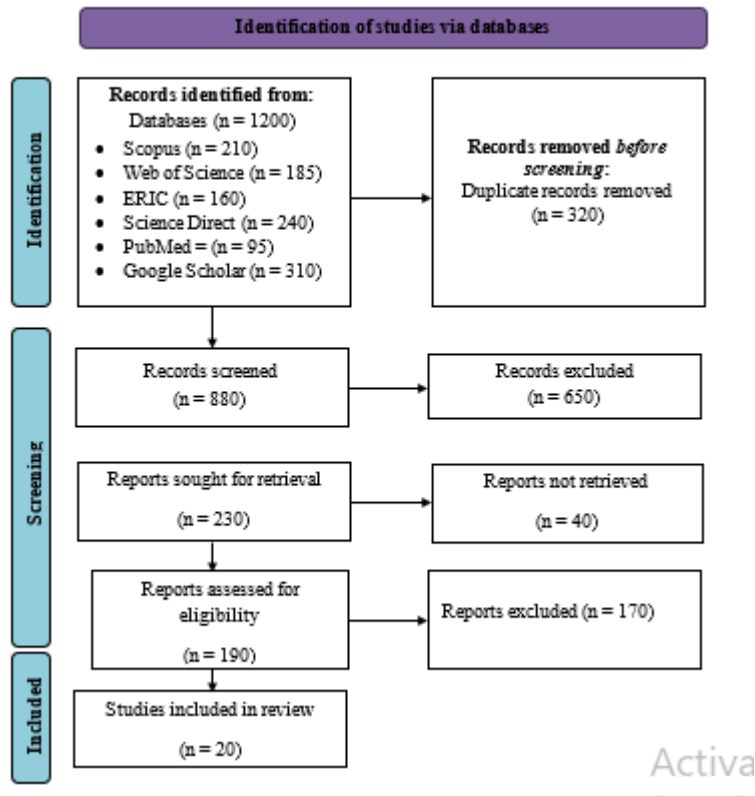


Figure 1. PRISMA

Analysis

Based on the selection results using the PRISMA 2020 method, 20 scientific articles met the inclusion criteria. These articles were analyzed using a thematic synthesis approach to identify key patterns related to the influence of Self-Directed Learning (SDL) on student achievement in higher education.

No	Author	Research Design	Research Result
1	Siswanto (2024)	Experimental	SDL significantly improves students' academic achievement by increasing learning independence, goal-setting ability, and self-regulated learning behavior. Students in the experimental group showed higher post-test scores compared to the control group.
2	Yang et al. (2025)	Quasi-experimental	The integration of SDL within the BOPPPS teaching model significantly enhances students' self-efficacy and academic achievement. Students demonstrated improved learning engagement and higher test performance after intervention.

3	Eluemuno et al. (2025)	Survey	SDL positively influences academic performance in digital learning environments. Students with higher SDL levels showed better adaptability to online learning and higher academic achievement scores.
4	Finn et al. (2024)	Scoping review	SDL effectiveness is influenced by curriculum structure, instructor support, and learning environment. SDL improves clinical reasoning and academic performance in health education contexts.
5	Mbeau-ache et al. (2021)	Quantitative	SDL readiness is positively correlated with academic achievement. Students with higher readiness levels perform better in structured academic tasks and independent learning activities.
6	Zhao et al. (2023)	Quantitative	Self-management skills and SDL significantly improve academic achievement through better time management, planning, and cognitive regulation.
7	Sánchez-Élez et al. (2024)	Experimental	SDL-based self-testing strategies significantly improve retention, understanding, and academic performance compared to traditional learning methods.
8	Mao (2025)	Conceptual	AI-supported SDL enhances personalized learning, adaptive feedback, and student autonomy, which ultimately improves learning effectiveness and academic performance.
9	Zhang et al. (2023)	Quantitative	SDL has a significant positive effect on GPA. Students with higher SDL show better academic consistency and higher final grades.
10	Kim & Park (2024)	Quantitative	Learning autonomy significantly predicts academic success. SDL increases students' responsibility for learning and improves achievement outcomes.
11	Lopez et al. (2023)	Mixed methods	SDL strategies (goal setting, self-monitoring, reflection) significantly improve student learning outcomes and engagement in higher education.
12	Rahman et al. (2023)	Quantitative	SDL has a strong positive relationship with academic success. Students with higher SDL demonstrate better problem-solving and academic performance.
13	Nguyen et al. (2023)	Quantitative	SDL is more effective in digital learning environments, where flexibility and access to resources enhance student performance.

14	Johnson et al. (2022)	Quantitative	SDL readiness significantly influences academic performance. Students with higher readiness are more successful in independent learning tasks.
15	Lee et al. (2022)	Quantitative	Learning motivation strengthens SDL behavior, leading to improved academic achievement and sustained learning engagement.
16	Hidayat et al. (2022)	Quantitative	SDL significantly improves student learning outcomes in Indonesian higher education institutions through increased autonomy and discipline.
17	Garcia et al. (2022)	Experimental	SDL-based instructional models significantly improve student achievement compared to conventional teaching methods.
18	Chen & Huang (2022)	Quantitative	Self-efficacy mediates the relationship between SDL and academic achievement, strengthening students' learning confidence and performance.
19	Thompson et al. (2021)	Review	SDL improves critical thinking skills, academic engagement, and overall student achievement in higher education settings.
20	Sari et al. (2022)	Quantitative	SDL increases academic engagement, which directly contributes to improved academic achievement and classroom participation.

The findings from the selected studies indicate that Self-Directed Learning (SDL) consistently exerts a positive influence on student academic achievement in higher education. Across the 20 reviewed articles, SDL is shown to enhance students' ability to regulate their own learning processes, improve academic performance, and strengthen engagement in learning activities.

Findings and Discussion

The experimental study conducted by Siswanto (2024) revealed that SDL significantly improves students' academic achievement. The results demonstrated that students in the SDL-based learning group achieved higher post-test scores compared to those in the control group. This finding indicates that SDL fosters students' independence in learning, particularly in setting learning goals, managing learning strategies, and evaluating their academic progress. Similarly, Yang et al. (2025) found that integrating SDL within the BOPPPS instructional model significantly enhances both self-efficacy and academic achievement. These findings suggest that SDL is more effective when embedded within structured pedagogical frameworks, as this combination enables students to actively construct knowledge while still receiving appropriate instructional guidance. Furthermore, the study by Eluemuno et al. (2025) highlighted that SDL has a strong positive influence on academic performance in digital learning environments. Students with higher SDL abilities tend to adapt more effectively to online learning systems, which

subsequently leads to improved academic outcomes. This emphasizes the increasing relevance of SDL in contemporary digital education contexts.

In addition, the scoping review conducted by Finn et al. (2024) explained that the effectiveness of SDL is influenced by curriculum design, institutional support, and the learning environment. The study emphasizes that SDL does not solely depend on individual student capability, but also on the extent to which the educational system facilitates independent learning. This finding underscores the importance of a supportive academic ecosystem for successful SDL implementation. The correlational study by Mbeau-ache et al. (2021) found that SDL readiness is significantly associated with academic achievement. Students with higher readiness for self-directed learning tend to perform better academically. This suggests that factors such as discipline, responsibility, and time management play a crucial role in determining SDL effectiveness.

Moreover, Zhao et al. (2024) demonstrated that self-management skills significantly contribute to academic success. SDL enhances students' ability to manage time effectively, organize learning tasks, and regulate cognitive processes, all of which directly improve academic performance and learning efficiency. The experimental study by Sánchez-Élez et al. (2024) showed that self-generated learning strategies, such as self-testing and reflection, significantly improve knowledge retention and academic performance. This finding confirms that SDL promotes active learning processes that contribute to long-term academic achievement.

In addition, Mao (2025) highlighted the role of artificial intelligence in supporting SDL. AI-based learning systems provide adaptive feedback and personalized learning pathways, which further enhance students' autonomy and academic performance. This indicates that technological innovation is becoming an increasingly important factor in strengthening SDL effectiveness. The quantitative study by Zhang et al. (2023) confirmed that SDL has a significant positive effect on GPA. Students with higher SDL tendencies demonstrate greater consistency in academic performance and achieve higher overall academic results, reinforcing the direct relationship between SDL and academic success. Furthermore, Kim and Park (2024) found that learning autonomy significantly predicts academic success. SDL increases students' responsibility for their own learning processes, which ultimately leads to improved academic outcomes. This finding highlights autonomy as a core component of SDL effectiveness. The study by Lopez et al. (2023) indicated that SDL strategies such as goal setting, self-monitoring, and reflection significantly improve learning outcomes and student engagement. These strategies enable students to become more aware of their learning processes, thereby enhancing academic performance.

Similarly, Rahman et al. (2023) confirmed that SDL has a strong positive relationship with academic success, particularly in improving problem-solving abilities and critical thinking skills among students. In the context of digital learning, Nguyen et al. (2023) found that SDL is more effective in online learning environments, where students have greater flexibility in accessing learning materials and managing their study time independently. The study by Johnson et al. (2022) emphasized that SDL readiness significantly influences academic achievement. Students with higher levels of readiness are more successful in completing independent learning tasks and academic assessments. Additionally, Lee et al. (2022) demonstrated that learning motivation strengthens SDL behaviour, which subsequently leads to improved academic achievement. Motivated

students are more consistent in applying SDL strategies throughout their learning process. The Indonesian study conducted by Hidayat et al. (2022) found that SDL significantly improves learning outcomes in higher education institutions by fostering discipline and academic responsibility among students.

The experimental study by Garcia et al. (2022) also confirmed that SDL-based instructional models are more effective than conventional teaching methods in improving student academic performance. Furthermore, Chen and Huang (2022) demonstrated that self-efficacy acts as a mediating factor in the relationship between SDL and academic achievement. Students with higher self-efficacy are more confident in applying SDL strategies, which leads to better academic outcomes. The systematic review by Thompson et al. (2021) concluded that SDL enhances critical thinking skills and academic engagement, both of which contribute significantly to improved student achievement. Finally, Sari et al. (2021) found that SDL increases academic engagement, which directly influences student performance in higher education settings.

As a part of an ongoing PhD research project, and in light of the current SLR undertaken under the PRISMA 2020 methodology, which has analysed 20 articles written between 2021 and 2025, the following conclusions can be drawn regarding the effect of SDL on student academic performance within the context of higher education. In particular, the results of thematic synthesis prove that students with a higher degree of SDL competence perform more efficiently in academic terms, have a higher level of learning autonomy and exhibit better self-regulatory skills in the process of learning. At the same time, it should be noted that the efficiency of SDL is dependent upon multiple interconnected factors, including psychological factors such as self-efficacy and motivation, behavioural factors such as engagement with the learning process, and situational factors related to digitalized learning.

In regards to the contributions that this research makes in theory, the study builds on the knowledge base of SDL through the inclusion of evidence from new research and further cementing the principles of Andragogy Theory and Constructivist Learning Theory. In addition, the study makes significant contributions to a more in-depth understanding of SDL by highlighting four influential factors, which include direct academic influence, psychological influence, learning influence, and digital learning environment. In terms of practical implications, the research has significant implications for universities, lecturers, students, and policymakers. Universities are advised to incorporate SDL-based learning approaches in their curricula, lecturers must be facilitators in the learning process, students are required to master self-regulated learning abilities, and policymakers need to enhance digital learning environments.

Conclusion

However, there are some limitations associated with this research paper. Firstly, the literature review will be conducted based on 20 articles that have been selected randomly. It is uncertain whether these selected articles will cover all aspects of SDL in the world. Secondly, the study will be confined to articles published between 2021 and 2025. Therefore, there is a possibility that some important articles published before the stipulated time frame will be overlooked. Thirdly, there might be differences in research methods applied in different articles, which could limit comparability during the synthesis phase.

Considering these constraints, further studies are recommended to include larger databases as well as greater periods of publications. Moreover, future studies are encouraged to use quantitative meta-analytic approaches to quantify the impact size of SDL. Future research may be conducted to investigate SDL within emerging areas such as AI-supported environments, hybrid learning systems, and cross-cultural education. Empirical investigations within such domains will add to our knowledge of SDL in higher education.

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