International Research Journal of Multidisciplinary Scope (IRJMS), 2025; 6(2): 1388-1400 IRJMS

Original Article | ISSN (O): 2582-631X DOI: 10.47857/irjms.2025.v06i02.03147

Effectiveness of Self-Directed Learning in Adult Education: A Comparative Study

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Abstract

In adult education, Self-Directed Learning (SDL) has drawn attention as an andragogical strategy that allows students to direct their learning. This comparative study explores the effectiveness of SDL in adult education settings, comparing it with conventional instructor-led approaches. The study employed a comparative design and data was collected from 300 adult learners from adult literacy centers in Imo State, Nigeria. A structured questionnaire consisting of 2 sections (A and B) was used for data collection. Section 'A' elicits responses on the demographic information of the participants such as gender, age, educational background, and current employment status while section 'B' contains necessary items about the research questions. Data generated from the study were analyzed using descriptive statistics of frequency, percentage, mean, and rank order. Results revealed that self-directed learning fosters a higher level of motivation and engagement among adult learners. It also enhances problem-solving skills and independent thinking and cultivates adult learners who are better equipped to adapt to the rapidly changing demands of the modern workforce. From the results, it was recommended that educators and institutions need to understand the strengths and limitations of SDL as this would help them design more effective and well-rounded adult education programmes that can cater to the diverse needs of learners in the 21st century.

Keywords: Adult Education, Conventional Learning Approach, Learner's Motivation, Self-Directed Learning, Self-Efficacy, Traditional Learning Approach.

Introduction

In the rapidly evolving landscape of adult education, the role of self-directed learning (SDL) has gained significant attention as a transformative approach for learners seeking to enhance their skills and knowledge independently. It is a key concept in adult education and is closely associated with Malcolm Knowles's theory of andragogy. It refers to a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying resources, selecting and implementing learning strategies, and evaluating learning outcomes (1). This process emphasizes autonomy, responsibility, and intrinsic motivation, distinguishing adult learners from traditional pedagogy, where learning is more dependent on instructors. Adults possess a self-concept that moves toward self-direction as they mature. They accumulate experiences that serve as valuable learning resources, and their readiness to learn is often linked to their social roles. Furthermore, adults tend to adopt a problem-centered approach to learning, focusing on real-life applications rather than abstract concepts. SDL aligns with these assumptions, as it enables learners to personalize their education according to their individual needs, interests, and experiences. Therefore, fostering SDL requires an environment that supports learners in becoming more autonomous (2). Educators act as facilitators rather than mere transmitters of knowledge, guiding learners through reflective practices,

(Received 10th November 2024; Accepted 03rd April 2025; Published 30th April 2025)

critical thinking, and self-assessment. The shift from teacher-centered to learner-centered education encourages adults to take ownership of their learning, increasing engagement and retention. However, self-directed learners are proactive in their educational pursuits, seeking knowledge autonomously based on personal interests and goals (3). As traditional teaching models encounter challenges in meeting the diverse needs of adult learners, the investigation into the effectiveness of SDL becomes paramount. This comparative study aims to investigate the effectiveness of SDL in adult education, examining its outcomes and impact in comparison to traditional instructional methods. The growing interest in self-directed learning arises from its potential to foster lifelong learning habits, encourage critical thinking, and cultivate a sense of ownership and responsibility in adult learners. By examining its effectiveness vis-a-vis traditional methods, this research seeks to contribute valuable insights into the optimization of adult education practices. Recent studies have underlined the value of SDL as an effective strategy for adult learners, with numerous studies highlighting its benefits. For instance, it was demonstrated in their comprehensive review that self-directed learning strategies not only improve learners' knowledge retention but also enhance their ability to transfer knowledge into real-world applications (4). Moreover, exploring the link between SDL and motivation, it was revealed that learners who engage in SDL are more intrinsically motivated, resulting in sustained engagement and long-term commitment to their educational pursuits (5). However, while the merits of self-directed learning are well-documented, the comparative effectiveness of this approach in contrast to traditional instructional methods remains a subject of exploration. To address this gap, this study adopts a mixed-methods approach, combining quantitative data on learning outcomes and performance with qualitative insights into learners' experiences and perceptions. By employing a rigorous research design, the study aims to present a comprehensive understanding of the numerous benefits and limitations of SDL in adult education. The findings of this study will offer valuable insights to educators, policymakers, and practitioners in the adult education domain, guiding the development of more effective and learner-centric approaches to meet the diverse needs of adult learners. This research endeavors to contribute to the ongoing dialogue on the effectiveness of self-directed learning in adult education, shedding light on its potential to transform learning experiences and shape the future of adult learning paradigms. To this end, the current study will explore the following research questions: What are the differences in learning outcomes between self-directed learning and conventional instructional methods in adult education? How do adult learners perceive self-directed learning in comparison to traditional approaches? What effect does self-directed learning have on learners' engagement, retention, and critical thinking skills? What are the implications of self-directed learning on learners' motivation, self-efficacy, and future learning behaviors?

Self-Directed Learning vs. Conventional Instructional Methods

Self-directed learning (SDL) and conventional instructional methods represent two distinct approaches to education that have been widely studied and compared in terms of their effectiveness, learner outcomes, and adaptability to different learning contexts. Malcolm Knowles developed the idea of self-directed learning in the 1970s (1). SDL is a method of instruction that encourages students to take charge of their education. This method empowers learners to set goals, identify learning resources, engage in activities that suit their individual learning preferences and needs, and identify the benefits of promoting lifelong learning (6, 7). Conventional instructional methods are often teacher-centred approaches where educators design and deliver lessons, set learning objectives, and dictate the pace and content of instruction. This method can include lectures, structured assignments, and standardized assessments (8). The efficiency of these two strategies and their effects on the results of adult learners have, however, been the subject of numerous research. As mentioned in a study titled "Learning in Adulthood: A Comprehensive Guide," self-directed learning is one of the important learning theories for adult learners (9). The research examines SDL's advantages and disadvantages in comparison to traditional teaching strategies. In a similar spirit, a thorough model of self-directed learning was developed in

"Self-directed Learning: toward a Comprehensive Model" and looked at its implications for adult education (10). The study emphasizes how SDL might promote learner autonomy and motivation as well as provide insights into how adult learners can take control of their learning process and the potential benefits of SDL over conventional instructional methods.

Self-directed Learning vs. Traditional Learning Approach

Both self-directed learning and traditional learning are distinct educational philosophies, each with benefits and drawbacks (11, 12). While the traditional learning technique adheres to a predefined curriculum supervised by teachers, self-directed learning empowers students to take charge of their educational journey (13). Therefore, the differences between the two approaches to education are:

Flexibility and Autonomy

Self-directed learning gives students the freedom to decide what they learn, when they learn it, and how they learn it (14, 15). Learners set their own pace, allowing for a personalized and autonomous learning experience. In contrast, traditional learning adheres to a fixed curriculum and schedule, limiting learners' autonomy (16).

Motivation and Engagement

Self-directed learners often exhibit higher levels of intrinsic motivation due to their active role in selecting learning materials aligned with their interests (17). This intrinsic motivation can enhance engagement and deep learning. Traditional learning may sometimes rely on extrinsic motivators such as grades, which might not always foster genuine interest (18).

Responsibility and Accountability

Self-directed learners develop a sense of responsibility and accountability for their learning outcomes (19). They learn to set goals, monitor progress, and reflect on their learning process. Traditional learning, on the other hand, may emphasize compliance with preset requirements, potentially diminishing learners' ownership of their education.

Critical Thinking and Problem-Solving

Self-directed learning encourages critical thinking skills as learners actively seek and evaluate information from various sources (20). They learn to analyze, synthesize, and apply knowledge in real-world contexts. Traditional learning can also promote critical thinking, but it may be constrained by the predetermined curriculum.

Collaborative Learning

While self-directed learning can be solitary, it doesn't exclude collaborative opportunities. Learners can engage in self-directed group projects or seek peers' perspectives online (21). Traditional learning often incorporates structured group activities, fostering collaboration but within the boundaries of the curriculum.

Resource Utilization and Lifelong Learning

Self-directed learners develop skills in finding, evaluating, and utilizing resources effectively (13). This aligns with the concept of lifelong learning. Traditional learning may not always emphasize resourcefulness to the same extent.

Instructor Role

In self-directed learning, instructors become facilitators or guides, offering support when needed (22). Traditional learning relies more on instructors as primary sources of knowledge delivery. Instructors in the traditional approach play a central role in shaping the learning process (23).

Impact of Self-Directed Learning on Learners' Motivation

Research has consistently demonstrated a positive link between self-directed learning and learners' motivation. When individuals have control over their learning goals and are empowered to choose their learning resources, they are more likely to have a sense of autonomy and ownership over their educational journey (24). This autonomy support fosters intrinsic motivation, where learners engage in learning for the sheer pleasure and satisfaction of acquiring knowledge rather than external rewards or pressures. Self-directed learners are more likely to persist in the face of difficulties and setbacks, as they perceive learning as a meaningful and personally relevant endeavor (25).

Impact of Self-Directed Learning on Self-Efficacy

Self-directed learning also plays a significant role in shaping learners' self-efficacy. Self-efficacy refers to an individual's confidence in their ability to accomplish specific tasks or achieve specific outcomes (26). When learners are actively

involved in the learning process and make decisions about their learning, they experience a greater sense of control and agency over their academic achievements. As a result, self-directed learners tend to develop higher self-efficacy, which positively impacts their academic performance and willingness to take on challenging tasks (27). By overcoming obstacles and accomplishing self-set goals, learners enhance their belief in their abilities, leading to increased self-confidence and resilience in the face of future learning challenges.

Impact of Self-Directed Learning on Future Learning Behaviors

Engaging in self-directed learning from an early age can also foster a lifelong learning orientation. Self-directed learners develop a sense of curiosity, metacognitive awareness, and a growth mindset, which are vital components of a lifelong learner (28, 29). By being exposed to various learning strategies and resources, self-directed learners become more adept at identifying and utilizing effective learning techniques, a skill that transcends formal education. Consequently, these individuals are more likely to seek out new learning opportunities throughout their lives, promoting continuous personal and professional development. Also, when learners engage in self-directed learning, they take ownership of their learning process. This ownership encourages a deeper level of engagement with the subject matter, as learners are more likely to explore topics of personal interest and relevance (30).

Theoretical Foundations

Andragogy and Self-Directed Learning Theory

Andragogy emphasizes the unique characteristics of adult learners and the need for learner-centered approaches (31). SDL aligns closely with the principles of andragogy, empowering adult learners to take ownership of their learning journey and capitalize on their life experiences.

Social Cognitive Theory

The importance of self-efficacy, self-regulation, and observational learning in determining human behavior is highlighted (32). SDL fosters self-efficacy, enabling learners to believe in their capabilities to succeed and take charge of their learning experiences.

Transformative Learning Theory

This theory posits that learning is a process of critical reflection and challenging one's assumptions, leading to personal transformation (33). Self-directed learning facilitates this process by encouraging learners to explore diverse perspectives and engage in critical thinking. However, the theoretical foundations of andragogy, social cognitive theory, and transformative learning provide a robust basis for exploring the impact of SDL on adult learners' educational experiences.

Methodology

Design

To explore the similarities and differences between two or more groups, cases, or entities, the study used a comparative research design. This type of research design is commonly used in various fields, including sociology, political science, anthropology, psychology, and education, among others. Comparative research design aims to draw meaningful insights, make generalizations, or test hypotheses by examining how different variables or factors affect the groups being compared. The design was chosen to systematically analyses similarities and differences between self-directed learning and conventional instructional methods in adult education.

Participants

The participants of this study comprised three hundred [300] adult learners. Simple random sampling technique was used to select them from adult literacy centers in Imo State of Nigeria. The centers were chosen based on their leading roles in adult literacy provision in Nigeria (34). However, the participants are individuals who are beyond the typical age of traditional, full-time formal education, which is often associated with childhood and adolescence. They are typically 18 years old and older and are engaged in learning activities for various reasons, such as personal development, career advancement, acquiring new skills, or pursuing higher education.

Instrument

A self-developed questionnaire titled 'Effectiveness of Self-Directed Learning in Adult Education (ES-DLAE)' was used for data collection. The questionnaire comprised two sections (A and B). Section 'A' elicits responses on the demographic information of the participants such as gender, age, educational background, and current employment status while section 'B' contains necessary items about the research

questions. The scale, which ranged from "4" for "Strongly Agree" to "1" for "Strongly Disagree," was based on a modified Likert 4-point system. Experts in the field of measurement and assessment validated the instrument's face and content. Thereafter, it was subjected to a reliability test through test-retest using Pearson Product Moment Correlation (PPMC) to obtain a .81 reliability coefficient, which ascertained that the instrument was reliable and ready for data collection.

Data Collection and Analysis

The researchers personally visited the adult literacy centers in Imo State, Nigeria, and obtained permission from the management to administer the questionnaire. However, copies of the questionnaire were eventually distributed to the respondents (adult learners) by the researchers and efforts were made to see that the respondents understood the contents of the instrument. Assistance was given where necessary in compliance with the instructions. At the end of the exercise, 300 copies of the questionnaire were filled, retrieved, and subjected to analysis. The demographic data of the respondents and the study questions were each analyzed using descriptive statistics of frequency, percentage, mean, and rank order.

Results

Table 1: Participants' Demographic Information

Gender	**Frequency**	**Percentage (%)**
Male	143	47.7%
Female	157	52.3%
Total	**300**	**100%**
Age	**Frequency**	**Percentage (%)**
18 – 27yrs	25	8.3%
28 – 37yrs	61	20.3%
38 – 47yrs	154	51.4%
48yrs & above	60	20.0%
Total	**300**	**100%**
Educational Background	**Frequency**	**Percentage (%)**
No Basic Education	18	6.0%
Primary School Certificate	191	63.7%
Secondary School Certificate	64	21.3%
Others	27	9.0%
Total	**300**	**100%**
Current Employment Status	**Frequency**	**Percentage (%)**
Employed full-time	59	19.7%
Employed part-time	66	22.0%
Unemployed	87	29.0%
Self-employed	58	19.3%
Retired	30	10.0%
Total	**300**	**100%**

Table 1 above revealed the results of the Demographic information of the participants. It is discovered from the table that 143 participants representing 47.7% of the sample size were male while 157 participants representing 52.3% were female. This shows that the majority of the adult learners were female. The table also revealed that 25 participants representing 8.3% of the sample size were between 18 to 27years of age, 61 participants representing 20.3% were between 28 37years of age, 154 participants representing 51.4% were between 38 to 47years of age while remaining 60 participants representing 20.0% were 48years and above. This shows that most of the adult learners who participated in this study were between the age brackets of 38 to 47 years. The table also showed the educational background of the participants where 18(6.0%) of them had no basic education, 191(63.7%) had primary school certificates, 64(21.3%) had secondary school

certificates and the remaining 27(9.0%) had other certificates. This shows that the majority of the participants were primary school certificate holders. On the current employment status of the participants, the table revealed that 59(19.7%) of them were employed, 66(22.0%) were employed part-time, 87(29.0%) were unemployed, 58(19.3%) were self-employed while 30(10.0%) were retirees. This shows that a larger percentage of the participants were unemployed.

Table 2: Mean and Rank Order Analysis Showing the Differences in Learning Outcomes between Self-Directed Learning and Conventional Instructional Methods in Adult Education

S/N	Items	SA	A	D	SD	$\_x$	Rank	Remark
1	Self-directed learning can lead to superior learning outcomes compared to conventional methods	85 (340)	108 (324)	39 (78)	68 (68)	2.70	3rd	Accepted
2	Self-directed learning provide higher levels of motivation and engagement among adult learners compared to conventional instructional methods	92 (368)	108 (324)	82 (164)	18 (18)	2.91	1st	Accepted
3	Self-directed learning allows adult learners to tailor the learning process to their own pace and preferences, fostering flexibility and adaptability compared to conventional instructional methods	108 (432)	87 (261)	42 (84)	63 (63)	2.80	2nd	Accepted
4	Self-directed learning helps adult learners develop time management and resource utilization skills compared to conventional instructional methods	64 (256)	98 (294)	62 (124)	76 (76)	2.50	4th	Accepted
	Grand Mean					**2.72**		**Accepted**

Table 2 showed that the mean score of items 1, 2, 3, and 4 are 2.70, 2.91, 2.80, and 2.50 while items 2 ranked 1st, 3 ranked 2nd, 1 ranked 3rd, and 4 ranked 4th. With the accepted grand mean of 2.72, it means that while self-directed learning motivates and empowers learners as well as promotes lifelong skills, conventional methods offer structured guidance and streamlined instruction. The choice between these approaches rests on factors such as learner preferences, the subject matter, and the learning context. However, educators and learners alike can benefit from understanding the strengths and limitations of each method and tailoring their approach based on individual needs and goals.

Table 3: Mean and Rank Order Analysis Showing How Adult Learners Perceive Self-Directed Learning in Comparison to Traditional Approaches

S/N	Items	SA	A	D	SD	$\_x$	Rank	Remark
5	Self-directed learning enables adult learners to gain more autonomy and be empowered over their learning journey compared to the traditional approach	128 (512)	98 (294)	20 (40)	54 (54)	3.00	1st	Accepted

6	Adult learners are motivated and engaged in self-directed learning compared to the traditional approach	64 (256)	98 (294)	62 (124)	76 (76)	2.50	6th	Accepted
7	Self-directed learning offers adult learners higher flexibility in terms of time and location of learning compared to the traditional approach	96 (384)	109 (327)	34 (68)	61 (61)	2.80	3rd	Accepted
8	Adult learners who engage in self-directed learning achieve a more meaningful understanding of the subject matter compared to the traditional approach	76 (304)	87 (261)	78 (156)	59 (59)	2.60	5th	Accepted
9	Self-directed learning encourages critical thinking skills more than the traditional approach	105 (420)	96 (288)	63 (126)	36 (36)	2.90	2nd	Accepted
10	In self-directed learning, instructors offer support when need arises compared to the traditional approach	96 (384)	79 (237)	64 (128)	61 (61)	2.70	4th	Accepted
	Grand Mean					**2.75**		**Accepted**

Table 3 indicated that items 5, 6, 7, 8, 9, and 10 had mean scores of 3.00, 2.50, 2.80, 2.60, 2.90, and 2.70, respectively, while items 5 were rated first, 9 were second, 7 were third, 10 were fourth, 8 were fifth, and 6 were sixth. With the accepted grand mean of 2.75, it means that self-directed learning promotes autonomy, critical thinking, and motivation, while traditional learning provides structure and instructor guidance. The choice between these approaches depends on learners' preferences, goals, and the learning context. Nonetheless, adult learners generally perceive self-directed learning as a more empowering and flexible approach compared to traditional methods. The autonomy, motivation, and adaptability offered by self-directed learning can lead to deeper understanding and meaningful outcomes.

Table 4 showed that the mean score of items 21, 22, 23, 24, 25, and 26 are 3.20, 2.85, 3.06, 3.02, 3.01, and 3.05 while items 21 ranked 1st, 23 ranked 2nd, 26 ranked 3rd, 24 ranked 4th, 25 ranked 5th, and 22 ranked 6th. With the accepted grand mean of 3.03, it means that self-directed learning has an effect on learners' engagement, retention, and critical thinking skills.

Table 4: Mean and Rank Order Analysis Showing the Effect of Self-Directed Learning on Learners' Engagement, Retention, and Critical Thinking Skills

S/N	Items	SA	A	D	SD	$\_x$	Rank	Remark
21	I feel more engaged when learning on my own compared to traditional teaching methods	162 (648)	77 (231)	51 (102)	10 (10)	3.20	1st	Accepted
22	I always feel motivated to learn beyond the classroom requirements	87 (348)	106 (318)	84 (168)	23 (23)	2.85	6th	Accepted
23	I often retain information learned through self-directed learning compared to traditional classroom learning	111 (444)	108 (324)	68 (136)	13 (13)	3.06	2nd	Accepted

24	Self-directed learning is more effective in helping learners to remember concepts in the long term	102 (408)	124 (372)	47 (94)	27 (27)	3.02	4th	Accepted
25	Self-directed learning has improved my ability to analyze problems critically	116 (464)	102 (306)	56 (112)	26 (26)	3.01	5th	Accepted
26	Self-directed learning has improved my ability to make logical decisions	125 (500)	94 (282)	49 (98)	32 (32)	3.05	3th	Accepted
	Grand Mean					**3.03**		**Accepted**

Table 5: Mean and Rank Order Analysis Showing the Implications of Self-Directed Learning on Learners' Motivation, Self-Efficacy, and Future Learning Behaviours

S/N	Items	SA	A	D	SD	_ x	Rank	Remark
11	Self-directed learning enhances the sense of competence	99 (396)	74 (222)	95 (190)	32 (32)	2.80	9th	Accepted
12	Allowing learners to set their own goals enhances motivation	128 (512)	88 (264)	51 (102)	33 (33)	3.03	5th	Accepted
13	Self-directed learning influences learners' goal orientations	92 (368)	85 (255)	75 (150)	48 (48)	2.73	10th	Accepted
14	Self-directed learning increases confidence in learning abilities	115 (460)	105 (315)	61 (122)	19 (19)	3.05	3rd	Accepted
15	Self-directed learning improves problem-solving skills	102 (408)	124 (372)	46 (92)	28 (28)	3.00	7th	Accepted
16	Self-directed learning enhances learners' motivation and persistence	116 (464)	101 (303)	56 (112)	27 (27)	3.02	6th	Accepted
17	Self-directed learning enhances transferable skills and broadens competence	162 (648)	77 (231)	50 (100)	11 (11)	3.30	1st	Accepted
18	Self-directed learning empowers individuals to take control of their learning	87 (348)	108 (324)	83 (166)	22 (22)	2.86	8th	Accepted
19	Self-directed learning fosters a mindset of lifelong learning	112 (448)	107 (321)	69 (138)	12 (12)	3.06	2nd	Accepted
20	Self-directed learning promotes ownership of learning	126 (504)	93 (279)	50 (100)	31 (31)	3.04	4th	Accepted
	Grand Mean						**2.98**	**Accepted**

Table 5 showed that the mean score of items 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20 are 2.80, 3.03, 2.73, 3.05, 3.00, 3.02, 3.30, 2.86, 3.06 and 3.04 while items 17 ranked 1st, 19 ranked 2nd, 14 ranked 3rd, 20 ranked 4th, 12 ranked 5th, 16 ranked 6th, 15 ranked 7th, 18 ranked 8th, 11 ranked 9th, and 13 ranked 10th. With the accepted grand mean of 2.98, it means that the implications of self-directed learning on learners' motivation, self-efficacy, and future learning behaviors are undeniably significant. Empowering learners to take charge of their learning journey not only enhances their intrinsic motivation and self-efficacy but also instills in them a lifelong learning orientation. Educators and policymakers should recognize the benefits of SDL and incorporate opportunities for self-directed learning in educational settings to promote learners' personal growth and academic success.

Discussion

The foremost objective of this study was to investigate the effectiveness of self-directed learning in adult education compared to conventional approaches to learning. Results

revealed that self-directed learning can lead to superior learning outcomes compared to conventional methods. A meta-analysis found that self-directed learners consistently achieved better outcomes in terms of knowledge retention, skill acquisition, and attitude change when compared to conventionally instructed learners (35). Also, self-directed learning provides higher levels of motivation and engagement among adult learners compared to conventional instructional methods. This finding supported a study which claimed self-directed learners showed more enthusiasm for the learning process and exhibited a higher level of persistence when facing challenges compared to learners in conventional instructional settings (36). Another finding exhibited by this study is that self-directed learning allows adult learners to tailor the learning process to their own pace and preferences, fostering flexibility and adaptability compared to conventional instructional methods. The finding corroborated a study that found that self-directed learners were better equipped to transfer their knowledge and skills to real-world settings compared to learners in conventional instructional methods (13). The study also revealed that self-directed learning helps adult learners develop time management and resource utilization skills compared to conventional instructional methods. This finding affirmed a study that indicated that self-directed learners were more adept at identifying and utilizing various learning resources efficiently (37). However, while self-directed learning appears to offer several advantages in adult education compared to conventional instructional methods, it is essential to recognize that the effectiveness of either approach can vary depending on the learners' characteristics, subject matter, and context. Results also revealed that self-directed learning enables adult learners to gain more autonomy and empowerment over their learning journey compared to the traditional approach. Research also suggests that adult learners perceive self-directed learning as a way to gain more autonomy over their learning journey (3). They feel empowered to explore topics of personal interest and align their learning with their individual goals. In contrast, traditional approaches might be seen as limiting, as learners often have less control over the content and pace of their learning. Findings also showed that adult learners are motivated and engaged in SDL compared to the traditional approach. This affirmed a study that found that adult learners tend to be more motivated and engaged in self-directed learning experiences (17). They are more likely to take ownership of their learning, leading to increased interest and curiosity, while traditional approaches, with their rigid structures, may not always provide various interests and adult learners' styles of learning, potentially leading to decreased motivation. Results also revealed that self-directed learning offers adult learner's higher flexibility in terms of time and location of learning compared to the traditional approach. Adding to this finding, self-directed learning offers greater flexibility in terms of time and location of learning (19). Adult learners appreciate this flexibility as they can integrate learning into their busy lives, fitting it around work, family, and other responsibilities, while traditional approaches often demand a fixed schedule and attendance, which may pose challenges for adult learners with busy lifestyles. Also, findings revealed that adult learners who engage in self-directed learning achieve a more meaningful understanding of the subject matter compared to the traditional approach. Corroborating this finding, research indicates that adult learners who engage in self-directed learning tend to achieve a deeper and more meaningful understanding of the subject matter (21). They are more likely to retain information and apply knowledge in real-life contexts. Traditional approaches, while effective for certain types of learners, might not always promote the same level of critical thinking and long-term retention. Findings also revealed that self-directed learning encourages critical thinking skills more than the traditional approach. Self-directed learning encourages critical thinking skills as learners actively seek and evaluate information from various sources (38). They learn to analyze, synthesize, and apply knowledge in real-world contexts while traditional learning can also promote critical thinking, but it may be constrained by the predetermined curriculum. Also, in self-directed learning, instructors offer support when the need arises compared to the traditional approach. Corroborating this finding, a study found that instructors become facilitators or guides, offering support when needed in self-directed learning while traditional learning relies

more on instructors as primary sources of knowledge delivery (20). Instructors in the traditional approach play a central role in shaping the learning process (23). It can be deduced from this discussion that both self-directed learning and the traditional learning approach offer unique benefits and challenges. Although self-directed learning promotes autonomy, critical thinking, and motivation, traditional learning provides structure and instructor guidance. The choice between these approaches depends on learners' preferences, goals, and the learning context. Results also revealed that self-directed learning enhances the sense of competence. A study affirming this finding reported that SDL allows learners to select activities that match their skill levels, leading to a heightened sense of competence - a pivotal factor in enhancing motivation (39). The "flow" experience, characterized by a balance between challenge and skill, often emerges in self-directed learning scenarios, contributing to increased intrinsic motivation (40). Another finding showed that allowing learners to set their own goals enhances motivation. Supporting this finding, research indicates that self-directed learning can enhance intrinsic motivation - the internal drive to engage in an activity for its own sake (24). Autonomy, a key component of SDL, aligns with the basic psychological need for autonomy identified in Self-Determination Theory (SDT), leading to increased motivation when learners perceive a sense of choice and control over their learning. The study also revealed that self-directed learning influences learners' goal orientations. Research has shown that learners in SDL environments are more likely to embrace mastery objectives, which focus on developing competence rather than performance goals, which focus on displaying competence (13), which is in line with this conclusion. This change may have a favorable effect on motivation because mastery goals are linked to more sustained effort and deeper involvement. The study also discovered that self-directed learning boosts learners' self-confidence. Self-directed learning allows people to take charge of their learning path, which can lead to an increase in confidence in their capacity to pick up knowledge and skills, according to a study that supports this conclusion. Self-efficacy may then rise as a result of this boosted confidence. Self-efficacy is formed through mastery experiences, and effectively completing self-directed learning can act as a succession of mastery experiences (26). The finding also revealed that self-directed learning improves problem-solving skills. This finding is in line with a study that showed that the process of setting goals, planning strategies, and adapting approaches in self-directed learning can reinforce an individual's perception of their problem-solving capabilities (41). It was also found that self-directed learning enhances learners' motivation and persistence. Engaging in self-directed learning requires intrinsic motivation and a degree of self-discipline. As individuals successfully manage their learning process, their motivation and persistence increase. This sustained effort to achieve learning goals contributes to the development of self-efficacy. According to the self-determination theory, developing self-efficacy requires both internal drive and a sense of autonomy (42). The finding also showed that self-directed learning enhances transferable skills and broadens competence. SDL often leads to the acquisition of a wide range of skills beyond the immediate subject matter. This broadened competence can positively impact an individual's self-efficacy across different domains. The process of independently learning and applying new skills fosters a belief in one's ability to adapt and succeed in various contexts, reinforcing the development of self-efficacy (1). It was also found that self-directed learning empowers individuals to take control of their learning. By engaging in self-directed learning experiences, individuals become more self-regulated learners, which can positively influence their willingness to seek out and engage in learning opportunities beyond formal educational settings (40). The result also revealed that self-directed learning fosters a mindset of lifelong learning. As individuals become accustomed to identifying their learning needs and seeking relevant resources, they are better equipped to adapt to changing environments and acquire new skills as the need arises (14). This adaptability is crucial in a rapidly evolving job market and knowledge-based society. Results finally revealed that self-directed learning promotes ownership of learning. When learners engage in self-directed learning, they take ownership of their learning process. This ownership encourages a deeper level of engagement with the subject matter, as learners

are more likely to explore topics of personal interest and relevance (30). This shift from passive reception of information to active exploration can reshape future learning behaviors.

Conclusion

The comparative study on the efficiency of self-directed learning in adult education comes to numerous important conclusions that illuminate the applicability and significance of this andragogical strategy. Self-directed learning has shown a lot of promise as a potent andragogical tool since it allows adult learners to take control of their learning process and customize their educational experiences to their unique needs and interests. The study highlights that self-directed learning fosters a higher level of motivation and engagement among adult learners. By allowing individuals to choose their learning materials, set their own goals, and establish personalized study schedules, self-directed learning empowers learners to take ownership of their education. This sense of autonomy fuels a greater intrinsic motivation, leading to a deeper understanding and retention of knowledge. Moreover, the study demonstrates that self-directed learning enhances critical thinking and problem-solving skills in adult learners. As they take on more responsibility for their learning, individuals are encouraged to seek out relevant resources, critically assess information, and apply their knowledge to real-world situations. This approach nurtures independent thinking and cultivates learners who are better equipped to adapt to the rapidly changing demands of the modern workforce. Furthermore, the research indicates that self-directed learning can accommodate diverse learning styles and preferences. Adult learners possess unique backgrounds, experiences, and learning paces. Self-directed learning allows for flexibility in how content is approached and assimilated, catering to the individual needs of learners and ensuring a more inclusive and supportive learning environment. However, the study also reveals that self-directed learning may not be suitable for every adult learner or in all educational contexts. Some individuals may struggle with the increased responsibility and self-discipline required for self-directed learning, necessitating additional guidance and support from educators. Additionally, in certain structured or time-sensitive programmes, there might be limitations on the extent to which self-directed learning can be fully implemented. Therefore, the effectiveness of self-directed learning in adult education lies in its ability to foster motivation, critical thinking, and personalized learning experiences. While it may not be universally applicable, the potential benefits it offers make it a valuable addition to the educational landscape. For educators and institutions, understanding the strengths and limitations of self-directed learning can help them design more effective and well-rounded adult education programmes that cater to the diverse needs of learners in the 21st century. Further research and exploration into this anagogical approach are necessary to refine its implementation and maximize its impact on adult learners' educational outcomes.

Abbreviation

SDL: Self-Directed Learning

Acknowledgment

We appreciate the participants of this study who showed a sense of responsibility through their commitment and active participation during the administration of the research instrument. We also appreciate the research assistants who offered their best without counting on the insignificant incentives they received.

Author Contributions

All authors contributed to the study's idea and design. The corresponding author prepared the materials, collected the data, and analysed the data. All authors wrote the first draft of the article and commented on previous versions. All authors read and approved the final article.

Conflict of Interest

The authors declare no competing interest whatsoever.

Ethics Approval

To secure approval for the study from our institution's Research and Ethics Committee, the present researchers fulfilled the Helsinki Declaration on ethical principles for research involving human subjects and the ethical principles of the American Psychological Association.

Funding

No funding received.

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