



Exploring Ghanaian Distance Learners' Views of Self-Regulated Learning Strategies and Academic Performance

RESEARCH ARTICLE

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ABSTRACT

This study explores final year Distance Education learners' self-regulated learning strategies in a blended learning environment at Ghanaian higher education institutions. This exploratory interpretivist study adopted a qualitative research approach, using a multiple case study design. The study sampled 12 purposively selected Distance Education learners across three universities. Data were collected through semi-structured interviews, transcribed and analysed following the thematic analysis process. The findings showed that the participants employed self-regulated learning strategies that pertained to cognitive, metacognitive, and resource management strategies to learn at a distance. Furthermore, factors that influenced distance education learners' academic performance were self-directed strategies, instructor-related factors, blended mode of instruction, collaborative learning, motivation, and availability of learning resources. Time management constraints mitigated the effective use of the learning strategies. Future research is needed to investigate whether there is a correlation between the pedagogical mode of delivery and academic performance.

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KEYWORDS:

self-regulated learning;
academic performance;
distance education; higher
education; Ghana; COVID-19;
blended learning; adult
learners; learning strategy;
distance learning

TO CITE THIS ARTICLE:

Kayi, E. A., & van Wyk, M. M. (2025). Exploring Ghanaian Distance Learners' Views of Self-Regulated Learning Strategies and Academic Performance. *Open Praxis*, 17(2), pp. 376–393. DOI: <https://doi.org/10.55982/openpraxis.17.2.783>

Globally, the declaration of the COVID-19 pandemic in March 2020 resulted in a significant transformation in the educational sector (UNESCO, 2020). For most higher educational institutions (HEIs), this global emergency meant a transition from conventional academic activities particularly, instructional delivery to innovative remote and online teaching and learning. The sudden emergency nature that characterised teaching and learning has been described by some scholars as emergency remote education (ERE) or emergency remote teaching (ERT) (Hodges et al., 2020). Extensive evidence from different contexts indicates that despite the downsides of ERE (Adarkwah, 2021; Adedoyin & Soykan, 2023; Oliveira et al., 2021; Rasheed et al., 2020; Watermeyer et al., 2021), ERE was essential to promoting and sustaining the quality of teaching and learning via the deployment of digital technologies as it provided several affordances (Oliveira et al., 2021; Rasheed et al., 2020; Watermeyer et al., 2021).

Before the COVID-19 pandemic, the instructional mode of delivery for learners enrolled in the Distance Education (DE) programme in nearly all public Ghanaian HEIs was mainly face-to-face (FTF). Tutors facilitated learning sessions or tutorials at scheduled times or periods, whereas the online platforms were mostly used for course assessments and dissemination of course materials asynchronously. However, the pandemic orchestrated a pedagogical transition from predominantly FTF to blended learning (BL) and online learning (Kayi, 2024; Mensah et al., 2021; Minadzi & Segbenya, 2024). Blended learning involves a combination of F2F and online teaching via technology-mediated platforms such as WhatsApp, Moodle as a learning management system (LMS), Google Meet, Telegram, and Zoom. A plethora of studies which were conducted during the pandemic in Ghana shows that the pedagogical shift had positive and negative outcomes (Mensah et al., 2021; Van Wyk & Amponsah, 2022). Positive outcomes were reflected in improved student-lecturer engagement, competency development in information technology use, access to learning resources, and flexibility with learning (Antwi-Boampong, 2021; Agbaglo & Bonsu, 2022; Kayi, 2024; Mensah et al., 2021). On the other hand, internet connectivity challenges, infrastructural deficits, lack of digital devices/gadgets, and social distractions were reported as the main challenges associated with the transition (Antwi-Boampong, 2021; Mensah et al., 2021). Though these studies, which were mostly conducted among traditional/regular students provide evidence of the impact of the educational transformation, there remains a paucity of literature on distance learners' use of self-regulation strategies in blended learning contexts.

Digitalisation in Ghana's higher education (HE) sector is not a new phenomenon. In 2009, the National Information and Communication Technology (ICT) policy, titled ICT4 AD policy was implemented by the government in response to accelerating technology adoption and integration in the higher education (HE) sector. The primary goal of this policy was to enhance educational delivery and improve the quality of teaching and learning as per strategies based on the UNESCO Sustainable Development (UNESCO, 2015) and African Agenda 2063 (African Union Commission, 2015; Ministry of Education, 2003, 2015). However, technology integration in the Ghanaian HE sector is still in its infancy due to high cost, limited Information Communication and Technology (ICT) infrastructure, and contextual issues associated with effective implementation (Adarkwah & Huang, 2023; Ministry of Education, 2015). Thus, there has been minimal progress made as of 2022. Nevertheless, Biney (2021) asserts that DE, has taken a "giant leap" with an inclusive ICT process. Nearly all the public tertiary institutions offering DE programmes in Ghana are digitised with courses and shifted toward an accelerated digitalisation process of delivered teaching and learning via a learning management system (LMS) or course management system (CMS).

Research shows that navigating learning environments, including distance learning contexts requires several competencies, skills and self-regulated behaviours for effective educational outcomes (Broadbent, 2017; Ejubović & Puška, 2019). Self-regulated learning (SRL) is an essential learner characteristic that helps learners become responsible for monitoring, organising, motivating, and evaluating their learning for specific educational outcomes (Brockett & Hiemstra, 2018). According to Zimmerman (2008), SRL is a self-directive process that enables learners to transform their mental abilities into academic performance skills. Based on the constructivist learning model, self-regulated learners are metacognitive, motivationally and behaviourally active participants in their learning process (Zimmerman, 1989). Literature shows that learners employ SRL strategies in both traditional and online contexts to direct and initiate

their own learning for academic success (Everaert et al., 2017; Pascoe et al., 2018; Street et al., 2017). Moreover, SRL is viewed as important and necessary in promoting lifelong learning as it is related to motivation, self-evaluation, metacognition, and self-efficacy which collectively influence learners to achieve academic success (Li et al., 2018).

From a Ghanaian perspective, DE learners who are mostly adult learners experienced a ‘new’ type of learning, namely blended learning during the pandemic. This meant that they had to adopt and utilise self-regulatory strategies to continue online and FTF academic activities. Adult learners are typically mature individuals whose educational experiences are constrained by personal, family, work, and social commitments making them less exposed to technology and the rudiments of online learning than young students (Tomas et al., 2015). Studies show that adult learners face many challenges in navigating academic work in DE contexts such as isolation and alienation, lack of metacognitive self-regulation skills, lack of support, and programme-related challenges (Choi & Kim, 2017; Kara et al., 2019). Regarding self-regulation in online contexts, studies show that learners experience difficulties compared to other learning environments and are less effective and successful with goal accomplishment (Lajoie & Azevedo, 2006; Lee et al., 2008; Samruayruen et al., 2013). While the findings of a flurry of research on students’ experiences during ERE in Ghana highlight a myriad of self-regulatory behaviours and skills used by students to navigate online learning (Adarkwah, 2021; Addae et al., 2022; Agbaglo & Bonsu, 2022; Kayi, 2024), less attention has focused on the self-regulatory strategies employed by DE learners in blended learning contexts. Also, considering that individual characteristics differ and competing contextual circumstances influence each learner’s learning strategy, it is not clear the extent to which adult learners applied their diverse learning strategies to achieve their learning goals during the pandemic.

Moreover, during the pandemic, it was essential for Ghanaian adult learners to improve their academic performance as they had access to a variety of course materials in different formats through the DE space. The availability of recorded lecture videos could be advantageous due to the online and FTF dimensions’ flexibility. Regarding whether SRL influences academic performance, recent studies conducted in Ghana show mixed results (Aheto et al., 2024; Mahama et al., 2022; Mensah et al., 2021). Apart from other African scholars, recently Aheto et al. (2024) reported a relationship between self-regulation skills, satisfaction and perceived learning among DE students. However, previous studies have paid less attention to adult learners’ self-regulated behaviours that affect academic performance in blended learning contexts. Given that the pandemic presented an opportune time for adult learners to experience a new instructional approach in a technology-mediated context, the study sought to investigate whether SRL influences academic performance at three universities in Ghana. Three research questions guided the present study:

SQR1. How do adult students enrolled on a DE programme regulate their learning during COVID-19 in a blended learning context?

SQR2. How does SRL affect adult learners’ academic performance on a course?

SQR3. What challenges do adult learners face with their learning strategies?

LITERATURE

THEORY OF SELF-REGULATED LEARNING

Barry Zimmerman (2001) extended the theory of SRL from the seminal text of Boekaerts and Niemivirta (2000) as a multi-dimensional concept and framework that continues to receive attention from educators and researchers alike. The theory of SRL is a self-directive process whereby learners transform their mental abilities into academic skills (Zimmerman, 2002). Self-regulation refers to self-generated thoughts, feelings, and behaviours aimed at attaining goals (Boekaerts & Niemivirta, 2000; Zimmerman, 2001). Self-regulated learners possess specific characteristics such as self-motivation, self-awareness, and goal setting and are task-oriented, making them proactive in their learning. Also, self-regulated learners self-monitor their behaviours and practice self-reflection to enhance effective goal setting, self-satisfaction, and motivation. Such learners tend to succeed academically because of their high motivation and adaptive learning techniques. Zimmerman (2002) avers those self-regulated individuals

use specifically adapted processes to achieve learning tasks. These regulatory processes involve self-adapted skills including goal setting, goal attainment, self-monitoring of performance, restructuring personal, physical and social context to ensure goal compatibility, time management, self-evaluation, attributing causation to results, and adapting future methods.

Self-regulation occurs through a dynamic and cyclical three-stage phase. These phases are the forethought or preparatory, performance, and self-reflection or self-appraisal (Zimmerman, 2002). The forethought phase describes all pre-learning efforts and consists of task analysis and self-motivating beliefs. The performance phase characterises processes that occur during the implementation of specific behaviours and consists of self-control and self-observation. In the third phase, students cognitively engage with their learning materials, regulate their learning strategies and allocate resources efficiently while self-reflecting.

Students utilise different strategies to regulate their learning. These strategies are broadly classified as cognitive, metacognitive, and resource management. Cognitive strategies facilitate information processing, acquisition of information, and organising and integrating new information into existing knowledge structures. Also, it comprises other strategies such as rehearsal, elaboration, and organisation (Pintrich et al., 1991). On the other hand, metacognitive strategies are second-order cognitions that serve to monitor and control how cognitive strategies are applied (Pintrich et al., 1991). Metacognitive strategies are applicable in all phases or aspects of learning and encompass goal setting and planning, monitoring and reflection, which typifies the appraisal phase. Resource management strategies involve the regulation of internal and external resources (Pintrich, 1999). The internal resources relate to attention, concentration, effort or motivation, while the external resources pertain to the learning environment, time and study management. Resource management strategies typically minimise distractions and avoid procrastination while maintaining learning processes (Corno, 2006; Pintrich, 1999; Wolters, 2003).

SELF-REGULATED LEARNING AND ACADEMIC PERFORMANCE

Academic performance is generally observed in academic achievement scores that students receive on formal or summative assessments. There are nuances associated with the meaning of academic performance which accounts for how it is measured in different contexts. For instance, according to Hellas et al. (2018), academic performance refers to the extent to which an institution, a teacher or a student achieves short or long-term educational goals. While some studies rely on the actual cumulative grade point average (CGPA) obtained from the university system as a measure of students' academic performance (Hellas et al., 2018; Junco, 2012a), other studies relied on students' self-reports (Al-Yafi et al., 2018; Junco, 2015; Rosli et al., 2012).

SRL is one of the critical 21st learning skills in education because of the role it plays in enhancing students' learning behaviours and outcomes. In Ghana, for example, SRL and its linkages with other variables such as academic performance, motivation, academic resilience and engagement have been studied to some extent among different category of students with mixed results (Adubea, 2023; Dake, 2023; Kitson, 2023; Kwakye et al., 2020; Nyatsikor et al., 2022; Weyage & Adade, 2024). In one study to examine whether entry behaviour, motivation and self-regulation predicts tertiary student's academic performance, results showed a significant relationship between self-regulation and academic performance (Weyage & Adade, 2024). Similarly, other Ghanaian researchers found through quantitative studies that SRL predicts students' academic performance (Dake, 2023; Kitson, 2023; Kwakye et al., 2020; Nyatsikor et al., 2022). However, Anane's (2014) mixed-method study of pre-service teachers' motivational orientations and the impact of SRL on their academic achievement showed a contradictory result. He found that the pre-service teachers' SRL strategies did not predict academic performance. In addition, Aheto and colleagues (2024) examined distance learners' online self-regulation skills and their perceived learning in an open distance learning context. Their study found that online self-regulation skills predicted perceived learning. These reviewed studies which were mostly quantitatively designed highlight the fact that students have a high tendency to adopt self-regulatory skills/strategies to learn and achieve learning tasks. These studies reveal a gap in the literature pertaining to the learning context, type of students (or learners), and a qualitative exploration to provide in-depth understanding of SRL and academic performance.

Extensive empirical evidence exists on university students use of self-regulated strategies and academic performance in different learning contexts (Broadbent, 2017; Eggers et al., 2021; Ejubovic & Puska, 2019; Onah et al., 2022; Sinkkonen & Tapani, 2024) whilst, other studies have also investigated students' learning strategies during emergency or crises situations such as the COVID-19 pandemic (Dai et al., 2021; Hadwin et al., 2022; Li et al., 2018; Tlili et al., 2022). A study conducted among Australian students showed that online students employed SRL strategies more often than students in blended learning contexts. Yet, academic performance was similar for all students (Broadbent, 2017). Further, in a systematic review conducted by Eggers et al. (2021) to investigate the self-regulation strategies of tertiary students in blended environments, they found that students utilized four main strategies: cognitive, metacognitive, motivational and management strategies. Also, Li et al.'s (2018) meta-analysis study showed that Chinese elementary and university students' self-efficacy, task strategies and self-evaluation were the best SRL strategies that highly predicted academic performance. Cognitive and non-cognitive factors which are components of self-regulation have been shown to play direct and indirect roles in students' academic success and academic performance (Putwain et al., 2019; Richardson et al., 2012; Román-González et al., 2018). Regarding the non-cognitive aspects of SRL strategies, Komarraju et al. (2011) found that openness to experience was relevant in determining academic performance while extraversion, agreeableness, and neuroticism were poorly correlated with academic performance (Poropat, 2009). Conversely, Pérez-González et al. (2022) found that university students' GPAs correlated with SRL strategies and conscientiousness. From the foregoing, these studies demonstrate that SRL strategies reinforces and influences students' learning outcomes. Irrespective of the learning contexts, the evidence across these studies show that students employ different strategies to regulate how they learn to suit their personal learning needs. Also, a combination of SRL strategies could directly and indirectly influence students' academic performance.

Alternately, few recent studies report adverse or a negative relationship between SRL and academic performance (Higgins et al., 2023; Jansen et al., 2019; Oz, 2021; Theobald, 2021). For instance, Dai et al. (2021) investigated Chinese college students' SRL, academic entitlement and academic achievement during the COVID-19 pandemic in an online learning environment. They found that SRL was not associated with academic achievement. Kickert et al. (2019) found a strong association between self-regulation and academic performance among university students, while contrasting results were found in a meta-analysis study by Ohtani and Hisasaka (2018) where SRL poorly predicted academic performance. A longitudinal study conducted among Australian students showed that students' average semester marks did not correlate with SRL (Higgins et al., 2023). Oz's (2021) metanalytic study which assessed the effect of SRL on students' academic achievement showed that SRL had a medium level positive effect on academic achievement. These inconsistent results suggest that self-regulation may not directly predict students' academic achievement. Other internal and external factors could potentially mediate this relationship. Since most of these studies are quantitatively based, qualitative research may prove useful in uncovering these factors.

With the increased technology-infused education, navigating hybrid learning environments requires specialized competencies and self-regulatory skills. Regarding self-regulation in different learning contexts, some studies have explored the challenges that students experience. Onah et al. (2022) examined students' capacity for SRL in a massive open online course blended learning computing course. They found that students experienced challenges with self-evaluation and time management. Similarly, another study investigating the SRL difficulties that adult learners face in online courses showed that adult learners were constrained in managing learning resources such as time, attention, and learning environment (Teich et al., 2024). Also, Kara et al.'s (2019) study showed that adult learners experienced learning challenges in an online DE environment. Furthermore, Bok's (2021) empirical study among distance learners in Malaysia showed that among the many problems similarly reported by Kara et al. (2019), adult learners experienced difficulties in adapting to studying. Moreover, adult learners in Malaysia's Open and Distance Learning programmes reported challenges with time management in studying and completing academic-related activities due to the increasing demands at school (Hussin, 2004). In sum, the literature shows that although SRL is a critical competence that promotes students learning behaviours and accomplishment of learning goals, students still experience problems with their learning strategies. The results evidences that individual, social, and contextual factors potentially account for students challenges in regulating their behaviours in different learning environments.

This study adopts a qualitative approach to explore students' self-regulated behaviours while studying in a blended environment during the COVID-19 pandemic. This approach enables an in-depth understanding of participants' experiences from their worldview (Creswell, 2018). A multiple case study design was used to explore the diverse learning strategies participants utilised at their various institutions and the commonalities of their experiences (Yin, 2018). Given the contextual differences and 'new' instructional delivery during the pandemic, the design was appropriate in exploring the phenomena across multiple cases (participants and institutions).

A semi-structured interview protocol was designed to obtain the participants' responses. The interview protocol was divided into two sections. The first section comprised participants' biographical characteristics such as age, gender, employment, institution of study, programme and year of study. The second section focused on participants' learning strategies, the impact of learning strategies on academic performance, and challenges experienced in utilising the learning strategies.

This study used multiple sampling techniques – purposive and snowballing – to recruit participants. Four final-year DE students (both post-graduates and undergraduates) across different programmes of study were purposively selected from each of three public/traditional universities to yield a total sample of 12. The purposive selection was based on participants' suitability to address the research questions and inclusion criteria. The inclusion criteria related to the following: i) enrolment on the DE programme in any programme of study such as Bachelor of Business Administration, Bachelor of Science in Nursing, Bachelor of Science in Agriculture, and Bachelor's in Information Technology; ii) currently registered and if the course has been taught in a blended format (FTF and online) since the declaration of the pandemic in March 2020 until the time of the study. On the other hand, the snowballing technique was utilised for two reasons – first, because of the difficulties in physically contacting DE students due to lockdown restrictions and disparities with course delivery schedules, and second, to enable access to multiple networks of participants to expand a broad scale of investigation beyond one social network (Penrod et al., 2003). Support for these sampling techniques has been used in similar studies elsewhere (Oliveira et al., 2021).

Three public universities were purposively selected based on the following criteria:

- Availability and deployment of a learning management system (LMS) to support blended teaching, as well as synchronous and asynchronous teaching and learning
- Blended instructional mode of delivery during the time of the study
- The type of institution is dual-mode or bi-modal, offering both campus-based and distance learning options across several disciplines and programmes of study

RESEARCH PROCEDURES

Before the study was conducted, participants gave consent to participate voluntarily and could withdraw if they felt unconfident before or during the interview sessions. Semi-structured interviews were conducted remotely via phone and Zoom between October 2021 and July 2022. The participants were invited to participate in the research through their programme co-ordinators and course representatives. Each interview took an average of 30 minutes. The interviews were audio recorded following verbal informed consent. In determining data saturation, code meanings were used. This process ensured that saturation ended when no new codes were identified after reviewing the transcripts successively. This strategy to assess saturation has been used in other studies (Hennink et al., 2019; Nascimento et al., 2018). All the interviews were conducted in English. Two trained research assistants transcribed the recorded interviews verbatim concurrently during the data collection.

Braun and Clarke's (2012, 2013) thematic analysis guided qualitative data analysis. The analytical process involved six steps: (i) reading the transcripts multiple times to increase familiarity with the data (ii) identifying and generating initial codes from the data inductively (iii) grouping initial codes into relevant sub-themes and themes to reflect the research questions (iv) reviewing the themes and sub-themes through re-reading the transcripts (v) defining and naming the themes and (vi) producing a report using the themes generated. The themes and

sub-themes that emerged from this inductive and reflexive process reflect the researcher's interpretation of the meanings of the data. It does not contend to provide correct answers (Braun & Clarke, 2019). The coding was done manually.

Member checking was used to establish the trustworthiness and validity of the data (Lincoln & Guba, 1985). To achieve this, the data transcripts were returned via email to the participants to allow them to validate and confirm the accuracy of their responses (original verbatim extracts) and correct any errors. Also, this process allowed them to add on or change their responses after reflecting on the questions asked. No comments or feedback was received on the transcripts. The ethical considerations upheld in the study included informed consent, voluntary participation, privacy and confidentiality. Participation was voluntary, and those who willingly consented were interviewed. Participants could withdraw from the study at any time without any reason. Additionally, participants were anonymised, and pseudonyms were used as unique identifiers during the data collection process. The transcripts were password-protected and stored with unique identifiers. Further, the participants were assured that their institutions would not be linked to their responses. The University of Ghana Ethics Committee for the Humanities (ECH) approved the study with protocol number ECH102/20-21.

FINDINGS AND DISCUSSIONS

Table 1 shows participants biographical characteristics. Regarding gender, seven (58%) females and five (42%) males were interviewed. Most (66.7%) of the participants were final-year undergraduate students, while only four (33.3%) were post-graduates. Less than one-third (16.7%) were unemployed while the majority (83%) were working in the formal sector. The mean age of participants was 30.8 years.

UNIQUE IDENTIFIER CODES	AGE	GENDER	INSTITUTION OF STUDY	YEAR OF STUDY	PROGRAMME OF STUDY	EMPLOYMENT
IDL R3	25	Female	IDL-KNUST	400	BBA (Human Resource)	Unemployed
IDL R6	30	Female	IDL-KNUST	400	BBA (Human Resource)	Employed
IDL R7	25	Female	IDL-KNUST	400	BBA (HR)	Employed
IDL R10	46	Male	IDL-KNUST	400	BSc (Agric)	Employed
UCC R2	29	Female	UCC	Post-graduate	MA (Education)	Employed
UCC R3	29	Male	UCC	Post-graduate	MBA (Finance)	Employed
UCC R6	30	Female	UCC	Post-graduate	MBA	Employed
UCC R4	33	Male	UCC	Post-graduate	MBA (Project management)	Employed
UG R3	28	Male	UG	400	BSc (Public Administration)	Employed
UG R7	41	Female	UG	400	BA	Employed
UG R8	26	Female	UG	400	BSc Public (Administration)	Unemployed
UG R18	28	Male	UG	400	BSc (Nursing)	Employed

Table 1 Participants biographical characteristics.

Three themes emerged from the qualitative data analysis. These are learning strategies, factors influencing academic performance, and challenges encountered with utilising learning strategies. The findings around these themes are discussed in the ensuing paragraphs.

LEARNING STRATEGIES

This theme describes the different self-directed learning strategies that participants employed and engaged in to sustain learning and enhance their academic performance. Five sub-themes that reflect the various dimensions of learning strategies emerged from the interviews. These were collaborative learning, time management, consistent learning, development of self-notes, and private tuition from course tutors.

Collaborative learning: This sub-theme was identified in eight (66.7%) responses. According to the participants, learning with peers in a group significantly enabled them to study effectively by equipping them with new information, providing a context to discuss, share and compare notes as well as to clarify complex concepts. Others opined that group learning increased their motivation to learn consistently in preparation for their group meetings virtually via Zoom, telephone, Google Meet or FTF. Additionally, the participants noted that the initiative to form a learning group was underpinned by the difficulty of learning independently amidst the competing demands of work, family and school. A participant stated:

“I created a group of four. We started this group study, and we do this conference call at the end of the day, maybe from eight o’clock to 10 o’clock, two hours, three times in a week. I was a facilitator though. So, we take the courses, go through with them and ask questions, and revise. It helped a lot” – IDL R6

Collaborative learning (CL) with peers emerged as one of the leading learning strategies utilised by DE students in a blended learning context. CL is a Vygotskysian concept rooted in a social constructivist epistemology and focuses on how learning is mediated following the context and experience with peers (Lin, 2015). Several authors have defined CL differently (Dillenbourg, 1999; Lee, 2014; Le et al., 2018). It essentially involves learning between two or more peers together and focusing on the mutual exploration of a subject and solving a problem toward a common goal (Dillenbourg, 1999). Peer learning in a collaborative manner fosters understanding while providing opportunities for problem-solving and seeking assistance for improved performance. CL strategy falls under Pintrich et al.’s (1991) resource management strategy of SRL. Our finding is inconsistent with some aspects of Broadbent’s (2017) study which found that online students utilised SRL strategies more often than blended learning students. Compared to online students, students whose mode of instruction is blended have both advantages with FTF and online. While contextual and individual differences could plausibly account for these results, it is likely that some learners were struggling to adopt strategies to learn autonomously given the blended nature of course delivery. Hence, the need to supplement their learning deficiency with peer-to-peer interactions, support and engagements to attain their learning goals. Additionally, the nature of the course, how the course was delivered, course content, time restrictions, and the teaching style of instructors could have motivated students’ decision to learn collaboratively. Thus, they get the best of both FTF and online interactions with their peers. Furthermore, although learners may individually have their preferred learning styles, CL with peers might be academically motivating and reinforcing to learn as they get to share, reflect, and evaluate their own academic experiences with their peers. Moreover, it is possible that students found group learning to socially network and, at the same time, solve problems, thereby enriching their educational experiences.

Time management: Nearly two-thirds (58.3%) of the participants reported being self-directed, intentional, and disciplined in managing their time for studying. Also, others designed study timetables to regulate and schedule their learning. This practice was deemed necessary due to the several competing tasks and demands of work and family with limited or nearly little time left to study effectively. To them, having a study timetable compelled them to be motivated in achieving the programme goals. A participant stated:

“I have a personal timetable that I use so let’s say at dawn or late into the night, I learn on my own” – UCC R6

Time management characterises the resource management strategy that learners utilize as they learn in different contexts. Managing time is a way of effectively controlling external resources (Pintrich et al., 1991) to accomplish specific tasks or goals within a specified time frame. Further, planning how to utilize time devoted to studying is accompanied by effort regulation or maintaining focus. DE learners must balance the time spent on learning as they juggle with other environmental stressors and responsibilities. This finding is consistent with Broadbent’s study (2017) which showed that online and blended students utilized time management strategies to enhance their academic success.

Consistent learning: Almost half (42%) of the participants explained that they adopted the practice of learning regularly (and daily) to avoid any rushed or ‘last minute’ learning due to past experiences. In their view, they lacked the skill to learn in ‘bulk’ during preparation for

examinations. Further, others noted that learning in bulk and by rote was cognitively stressful, hence their self-adopted practice of learning daily at regular intervals. A participant explained:

"I don't pile up notes. You know some people will have to wait for last minute and then learn but I don't pile up notes" – UCC R3

"I think its continuous learning. I just kept learning and learning, reading repeatedly. Asking people questions. Involving other people like my siblings, my friends, group studies"– IDL R3

Learning consistently is a cognitive function and goal-oriented strategy that reduces rote learning by allowing ample periods to study over time. This learning strategy aligns with the cognitive strategy of self-regulation (Pintrich et al., 1991). Self-regulating one's learning is underscored in goal or task achievement and planning, where learning is structured. Also, learning consistently is associated with effective effort regulation, self-motivation and time management. Consistent learners are likely to assess and monitor what and how to learn for better outcomes. The results evidence how persistent/continuous learning strategy was borne out of self-examination of one's strengths, abilities, and quality of learning style.

Development of self-notes: Regarding this sub-theme, one-third (33.3%) of the participants reported that they had personally developed the skill of preparing notes from their course materials anytime they studied. Note-taking, according to them facilitated easy recall of what they had learned. They viewed note-taking as critical to effective learning, either during group learning with peers or independent learning. Moreover, they felt that developing one's notes actualised the learning process and increased their confidence in their studies.

"I cannot read from slides. I will have to write it down and then learn from what I wrote. So, I visualise what I have written. That is what helps me to remember. No matter the number of pages of the book I read I must summarise, write it down then I read the summary I have written. That will make me remember what I have written"– UCC R3

Self-development of notes reflects learners' cognitive strategy in regulating their learning. By taking notes during the learning process, learners can outline their thoughts and organise useful and vital information that are central to the topic being studied. Personal note-taking also directly reflects a method of synthesising bulky information into bits or chunks in a way that the learner can understand.

Private tuition from course tutors: A few (16.7%) participants explained that they relied on private tuition from their course tutors to understand aspects of the topics taught in class. To them, the private tuition supplemented what they were taught in class, obtain further understanding and get assistance to complete assignments. On the other hand, others averred that being privately tutored was to compensate for missing lectures. Hence, this alternative was very critical to their academic success.

"Evening classes and other extra classes- our colleagues organised us and got some TAs to teach us, especially with the calculation subjects, for example, accounting. Those who didn't have accounting backgrounds, we organized ourselves, got some TAs and when we made ourselves available, our seriousness also made them avail themselves to help us." – UG R8

FACTORS THAT INFLUENCED ACADEMIC PERFORMANCE

Under this theme, six sub-themes that reflected the various factors influencing participants' academic performance were identified. These include self-directed learning (SDL), instructor-related characteristics, blended mode of instruction, motivation, enhancement of collaborative learning, and availability of learning resources.

Self-directed learning: Eight (67%) participants reported that their self-directed learning strategies/styles impacted their learning and academic performance. Their learning styles ranged from learning consistently, paying critical attention in class, and independent learning through preparing self-notes, solving previous examination questions, and completing assignments timely. Others attributed their academic performance to hard work. A participant said:

“...by looking at my grades and going back to look at what the general grading system is and then I decided to work on it myself. I told myself that I must do something about it. So, I started putting in more effort than before, I started putting in more work, more hours of studies I visited the virtual class more often. Those are things that I did. I do my assignments as early as possible and read a lot and I’m able to make it” – IDL R6

SDL is a 21st-century skill that empowers individuals to own their learning by adopting critical skills for development. Knowles (1975) defines SDL as a process whereby learners manage their learning process from beginning to end. SDL encompasses five key processes, beginning with individuals taking the initiative with or without the help of others in diagnosing learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes (Knowles, 1975). Previous research shows that SDL positively correlates with several education-related outcomes such as performance (Boyer et al., 2014; Edmondson et al., 2012). From the results, most participants were self-directed in their learning experiences by adopting different learning styles and choosing workable learning strategies through their initiatives to achieve their learning goals despite the evolving contextual changes in pedagogy and social conditions at that time. This finding is supported by other studies (Oducado, 2021). As lifelong learning is essential to long-term goal accomplishment and development in all aspects of life, it is crucial that adult learners are provided with an enabling ecosystem to become active, empowered and self-directed learners.

Instructor-related characteristics: Regarding this sub-theme, seven (58%) participants explained that instructors’ engagement and interaction, style of teaching, support with providing explanations of complex concepts offline, and the instructors’ expertise facilitated their understanding of the course. Additionally, participants stated that the virtual engagement with instructors via WhatsApp motivated them to learn consistently. Hence, enabling them to improve their performance. A participant said:

“Fortunately for us, our TAs are very friendly. I am fortunate because I have cordial relationships with most of my TAs so anything I do not understand, I approach them, and they are kind enough to explain. So, I think that has helped” – UG R3

Generally, instructors (lecturers) play critical roles in the educational process through their pedagogic delivery style, competence, subject-knowledge expertise, teaching experience, and attitude towards students. The results of this study show that instructor-related factors influence students’ academic performance, and this is consistent with other studies conducted elsewhere (Coenen et al., 2018; Danisman et al., 2019; Marlina et al., 2021; Olufemi et al., 2018). Instructors, by their training and qualifications, carry some personal power that motivates students to learn and understand.

Blended mode of instruction: Half (50%) of the participants attributed their academic improvement in the programme to the blended mode of instruction. Their explanations centred on the continuous interaction and engagement with instructors online and FTF. They noted that instructors’ teaching online allowed them to access lecture recordings and further engagements virtually, even outside class hours. Thus, the blended instruction approach was complementary as both were beneficial in enhancing their knowledge of the course. A participant reported:

“When I got to level 300, my GPA was going up and the same in level 400, too, because of the online. With every work and assignment, we were given ample time to research and do our work. It did a lot for me because I had the opportunity to get exposed to other stuff, so it really influenced my performance” – UG R8

Blended learning is one of several innovative pedagogical approaches that maximises the advantages of technology-enhanced online learning environments while preserving the benefits of the traditional/lecture-based approach (Rasheed et al., 2020; Xu et al., 2019). Although existing research provides inconclusive results on the impact of blended learning on students’ academic performance, the findings of Bazelais and Doleck (2018), Li et al. (2018) and Vo et al. (2017) are consistent with the present study. Globally, blended learning became a popular instructional methodology during the COVID-19 pandemic shifting academic work to

predominantly online with reduced FTF contacts. From the results, the affordances of blended learning were evident in the flexibility and sustenance of learning, specifically, in the online aspect. It is possible that DE learners gradually became accustomed to the 'new' mode of instruction despite the digital issues with teaching online.

Motivation: Motivation was described by three (25%) participants as important to achieving the course goals and academic excellence. They explained that self-motivation and encouragement from lecturers and peers fuelled their interest in pursuing their programme of choice. To them, being intrinsically motivated sustained their efforts in adopting different strategies to enhance their learning. A participant said:

"It's like you have started something; you entered with a goal so there is no turning back. You must finish what you have started and finish it well. So, this is something that I carry on every day" – UG R18

Motivation is a fundamental concept that underpins several developmental theories. According to Schunk et al. (2014, p.5), academic motivation is "the process whereby goal-directed (academic) activity is investigated and sustained". Students are motivated by internal (intrinsic) and external (extrinsic) factors. Intrinsic factors such as self-efficacy, self-regulation, personal goals, task values, costs, and benefits directly propel students to act in specific ways. From the expectancy theory, learners who envisage or believe that utilising self-directed learning strategies will yield better outcomes are more likely and willing to engage in self-directed behaviours. Alternately, the transformational learning theory states that students' (in this context) commitment to learning is more remarkable when they believe the learning outcomes are rewarding and have control over the learning method (Mezirow, 2000). The results are consistent with other studies which found motivation as a strong predictor of academic performance (Everaert et al., 2017; Kusnierz et al., 2020). The findings indicate that students are each motivated differently in pursuit of academic goals and the sources of their zeal for engaging in particular self-directed and regulated behaviours.

Enhancement of Collaborative Learning: Regarding this sub-theme, a few (25%) participants reported that learning collaboratively with their peers provided an opportunity to clarify their understanding of certain topics in class, equip themselves with new knowledge and learn from their peers. They further explained that they took the initiative to form study groups to discuss aspects of their course and solve past examination questions. Moreover, due to the lockdown restrictions, group discussions were held virtually and FTF to ensure convenience for members to join. A participant said:

"The group discussion I mentioned is helping me a lot. The discussion helps you to absorb and understand whatever is discussed. You even get to understand the lecture notes and the slides better because what you do not understand, maybe someone understands that part very well, so you get to understand it well" – UG R7

Availability of learning resources: During the interviews, participants explained that the availability of course materials to study with helped them to excel academically. They noted that access to relevant course materials was easy to obtain from the instructors virtually via WhatsApp, Telegram, and email or in print. Furthermore, others held that compared to FTF lectures, they could record online lectures at their convenience and playback afterwards. A participant said:

"The slides they give us are quite voluminous. If you compare UG slides to other institutions, you realize the UG slides are detailed. So even if you don't read any other materials, you have an idea about the course. So even when I am in the ward and I face certain technical situations, sometimes I turn back to the same slides to refresh my memory. So, I think the slides is one of the important factors" – UG R18

Availability of learning resources (or learning materials) is critical by providing the required content for knowledge construction and understanding. Providing quality, relevant and detailed learning resources in different forms (texts, videos, or slide notes) promotes self-paced study, self-directed learning, and collaborative learning. This finding is supported by Yousef's (2017) study which showed that the availability of learning materials and content facilitated students' understanding of a quantitative course. For DE institutions, a pre-requisite is the development

of course materials (or modules) for distance learners in a simplified form aimed at promoting independent study. Learners might find it helpful to self-learn and prepare prior to lectures, and even those who miss lectures may find it beneficial to access learning materials anytime.

CHALLENGES ENCOUNTERED WITH UTILIZING LEARNING STRATEGIES

Participants were asked about the difficulties they experienced in navigating and keeping up with their learning strategies in both online and FTF contexts. The main challenge that emerged from participants' responses related to time management. Few participants explained that work demands, and family commitments prevented them from having sufficient time to utilise their adopted learning strategies, particularly, in adhering to their personal study timetable. Others bemoaned their inability to manage time due to competing demands. A participant said:

"I am in several study groups but now, because of COVID, we do not meet as often as we did. And if I go by my grades, I realize that in the first and second semesters, I got a lot of A's because, at that time, I was not married, so I had the time to learn so, I joined many study groups. Once I got married, I had a kid, had to be home at certain times, and my movement was limited. It affected my grades at the beginning. I could not balance it at that time. So, I realized I was not managing my time properly" – UG R3

From the results, time management is a resource challenge that adult learners faced while navigating how they learn. Although this finding was reported as one of the learning strategies in the study, it mirrors as a challenge. This finding is consistent with previous studies by Onah et al. (2022) and Teich et al. (2024) who found that students were constrained with time management problems during their programme of study in a blended learning environment. Adult learners experience competing challenges as they combine work and school simultaneously (Kara et al., 2019) and without the needed support from their family, partners or relatives, they will be unable to effectively manage their time to study. Balancing time for schoolwork and other competing tasks involves learned behaviour formation and modification, process, practice, and consistency over time. And developing effective SRL skills involve the elements of time, self-monitoring, and evaluation to achieve impact. However, considering the situation of limited time- which is a challenge- adult learners will not be able to develop effective specific learning strategies that would lead to academic success as expected. Also, it is possible that some learners had not fully adjusted to the demands of the blended format of teaching and learning, and thus, unable to balance the time for academic work with other family responsibilities. Educators play an essential role in this regard by providing tailor-made learning activities that meet the specific learning needs of these adult learners to help learners adopt self-regulatory behaviours and pique their interest in the course or programme for a positive educational experience.

CONCLUSION, IMPLICATIONS AND SUGGESTIONS

This study explored DE learners' learning strategies, challenges associated with utilising learning strategies and the impact of learning strategies on academic performance. The findings show that learners SRL strategies relate to cognitive, metacognitive, and resource management domains. Students learning strategies impact their academic performance through SDL, instructor characteristics, blended mode of instruction, collaborative learning, motivation, and availability of learning resources. Time management limited the practical usage of learning strategies.

The study has few limitations. The small sample sizes across the three selected study sites and the sampling techniques employed could potentially limit generalisability of the findings. Also, generalising the results could be limited by geographical or contextual differences in distance learning environments. Participants experience of a 'new' form of instructional delivery motivated them to adopt different learning strategies during the pandemic. The results suggest that DE students will require supportive interventions or assistance in areas such as effective learning styles/skills through seminars, developing effective time study plans/schedules based on individuals' personality and home situation to reduce risks of dropping-out arising from low academic performance. Also, it will be necessary for instructors to engage distance learners

in collaborative learning activities or tasks that promote personalised learning, cognitive and metacognitive skills. Future research is needed to investigate whether there is a correlation between the pedagogical mode of delivery and students' academic performance. Exploring instructors' accounts of their 'first-time' blended teaching experiences and post-COVID implications for curriculum design may be worthwhile.

DATA ACCESSIBILITY STATEMENT

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

ETHICS AND CONSENT

Written and verbal informed consent for the study was obtained from all participants. Ethical approval for the research was obtained from the Ethics Committee for the Humanities (ECH) of the University of Ghana (ECH102/20–21). Confidentiality and anonymity of responses were maintained. Participants' titles and departments of affiliation were anonymised. No part of the recordings was disclosed to any third party except the research project team. Participants unwilling to participate in the study after the initial invitation were not contacted further. Virtual interviews were done at participants' convenience.

ACKNOWLEDGEMENTS

The research undertaken is a result of the Open and Distance Learning Practitioner Research Training and Mentorship Initiative offered by the Commonwealth of Learning. The views expressed in the publication are those of the authors and should not be considered to be endorsed or supported by the Commonwealth of Learning.

FUNDING INFORMATION

The author is grateful to the British Educational Research Association (BERA) for funding this research project during the author's fellowship.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

Esinam Afi Kayi: conceptualization, methodology, formal analysis, investigation, data curation, visualization, writing- original draft preparation, writing-review and editing, funding acquisition, project administration; Michael van Wyk: conceptualization, methodology, writing-original draft preparation, writing-review and editing, and supervision. All authors have read and agreed to the published version of the manuscript.

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TO CITE THIS ARTICLE:

Kayi, E. A., & van Wyk, M. M. (2025). Exploring Ghanaian Distance Learners' Views of Self-Regulated Learning Strategies and Academic Performance. *Open Praxis*, 17(2), pp. 376–393. DOI: <https://doi.org/10.55982/openpraxis.17.2.783>

Submitted: 01 November 2024

Accepted: 11 May 2025

Published: 10 July 2025

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