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# Fostering self-directed learning in blended learning environments: A constructivist perspective in Higher Education

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## Abstract

Higher education (HE) is considered to be the apex of all educational endeavours. Therefore, it is expected that student in various institutions of higher learning should be self-motivated for individualized synchronous and asynchronous learning. Lamentably, it seems that such expectation within the HE spaced is yet to be achieved. While stakeholders in HE are in search for an approach to ensure that students have sufficient self-directed learning (SDL) capacities needed for blended learning (BL), this article advance and propose the use of the constructivist framework to foster SDL to ensure that students develop their own understanding of learning, its meaning according to the context, and the ways to acquire it using BL as a mediator. Using the constructivist theory as a theoretical lens, we proposed the use of a *three-ring-drag-in approach* as a model to fostering SDL among students in various institutions of higher learning. We, therefore encourage the adoption or adaptability of the *three-ring-drag-in approach* as it promise to address and resolve the concerns and agitation of enthronement of SDL among students within the HE spaces.

## 1 | INTRODUCTION

Among the strata of education, higher education (HE) as it sound is the 'last' level of school an individual is expected to attain. For instance, Nigeria have adopted the 9-3-4 system in her educational policy. The 9-3-4 system implied that learners are mandate to undergo a compulsory 9 years of basic education program which comprise of a 6-year in primary school and 3-year in the junior secondary school; a 3-year in the senior secondary education program and finally spend 4 years for bachelor's degree programme in the higher educational institution. In a similar vein, the South African educational programmes, identified a compulsory basic, secondary, and tertiary education. Arising from the foregoing, tertiary education, hereafter denoted as HE encompasses all educational activities in the post-secondary or tertiary level of education (Moloi, 2007; Motala, 2011). Within the HE spaces, learning and training activities is sequentially organized (Alemu, 2018; Maddock & Maroun, 2018; Maphalala & Adigun, 2021a, 2021b; Tribe, 1994; Zając et al., 2023). Thus, higher educational institutions (HEI) are poised to provide learners with essential skill for purpose of fostering lifelong learning through scholarship, research attitude and community engagements.

According to Hussain (2012) and Zając et al. (2023), the main focal point of HE is knowledge creation and its dissemination. Over the years, HEI have actively engaged in instructional mechanisms that is dynamic and relevant to the realities of the society. In fact while HEI have adopted face-to-face approaches, in the past decade, HEI have also leveraged on opportunities presented by technologies to advance knowledge creation and dissemination through the open and distance e-learning approaches (Maphalala & Adigun, 2021a, 2021b; Ngubane-Mokiwa, 2017). Regardless of mode of knowledge dissemination approaches adopted by HEI, pedagogical mechanism, learning activities and environment and innovations emerging from the HEI is centred on knowledge construction which aims at developing competencies and skill among all actors within the HEI. Discussions within the HE spaces have constantly evolved. In fact, discussion about dissemination and diffusion of academic contents in the last two have favoured the blended learning (BL) approaches (Bennett et al., 2020; El-Mowafy et al., 2013; Hussain et al., 2019).

Although, the emergence of COVID-19 leading to lockdown as a measure to curtail the continuous spread of COVID-19 favoured digital/virtual/remote education (Adigun et al., 2022; Maphalala & Adigun, 2021a, 2021b). On the other hand, post-COVID-19 discourses within the HE spaces (Evans et al., 2020; Heilporn et al., 2021; Müller & Mildenberger, 2021) is continuing to garner momentum for the uptake of blended educational activities. Studies have described BL as a type of learning activities that combines two modes of instructional activities, that is, computer-mediated and face-to-face instructions (Evans et al., 2020; Hrastinski, 2019; Müller & Mildenberger, 2021). In other words, BL is fortified with capacities to promote and optimize learning activities to further strengthen students' engagement through a combination of synchronous and asynchronous activities. As espoused by Smith and Hill (2019), BL does not only foster enrichment of classroom activities and learning but also provide learning freedom for learners in HE spaces. Through BL, students are independent and are responsible for the construction or reinforcement of their learning. In other words, students who engage in BL environment have control of their time and space through which they can engage in learning activities as required. More so, students through the BL have control of their own learning space and activities, they have capacity to determine their pace and contents.

Available evidence in existing literature show that BL experiences provided students with varied opportunities for a flexible learning experience, greater opportunities for engagement and interactions while creating deeper understanding of constructs in various context which might not be readily available in either the face-to-face or the virtual learning (Heilporn et al., 2021; Hrastinski, 2019; Vaughan, 2014). Vaughan (2014) asserts that BL lead to a greater potential for reflective higher order of reasoning. Based on the submission of Vaughan (2014), Baltork et al. (2015) suggest that stakeholders within the HEI should involve students in learning processes the advances academic, social and technical skills among students. Baltork et al. (2015) further stress that through BL processes,

student can develop requisite capacities needed for knowledge construction and interpretation geared towards broadening individual capacities towards creation and development of new knowledge and skills.

A volume of past studies has favoured online learning over face-to-face (Maphalala & Adigun, 2021a, 2021b; Müller & Mildenberger, 2021) but perceived dangers associated with mental wellness and lack of teacher-students interaction on psychological wellbeing (Azmi et al., 2022; Olawale et al., 2021) have further strengthen the need for BL in HE. While time and space may not be a barrier in digital education, the benefits of online learning thus come with a cost of reduction in physical interaction and social communication between student–student and students-teachers. Interestingly, the BL approaches foster components of virtual learning and face-to-face teaching. Thus, BL may require a comprehensive self-directed learning (SDL) among students (Adinda & Mohib, 2020; Sriarunrasmee et al., 2015) in order to meet up with the potential demand of the learning approach with regards to knowledge construction and management. However, how best knowledge is constructed by students taught using BL approach remain obscure. Therefore, this study advances the constructivist perspective to foster SDL for knowledge construction and management in HE.

## 1.1 | Defining self-directed learning in higher education

Learning is a concept described as any relative permanent change in behaviour which occur as a result of practice or experience. In other words, the foregoing means that learning informs relative behaviours change but such perceived changes in a set of behaviours is derived or informed by experiences. Furthermore, learning can be motivated by external factors (extrinsic motivation) or internal factors (intrinsic motivation) (Waheed et al., 2016). The foregoing implies that learning especially at the HE level can be self-informed or self-directed based on the variation in motivating factors. Thus, in their comment about SDL, Lee and Teo (2010); Long (1994) as well as Sun et al. (2022) note that SDL is a construct that is used to describe active participation of learning in various learning tasks. As advanced by Merriam et al. (2007), SDL refer to a learning process in which an individual take primary responsibility of planning and evaluation of personal learning engagements. In relation to the description of Merriam et al. (2007), Boyer and Usinger (2015) aver that the principles of the concept of SDL require a shift from focusing external factors (such as teachers' control) that may influence learning to intrinsic (internal) factors (personal learning goals) that informs learning objectives. Thus, Boyer and Usinger (2015) posit that active involvement and innate ability to control of an individual of the learning process is a fundamental phenomenon in SDL. The foregoing therefore implied that the concept of SDL requires learners' conscious effort to conceptualize, design, evaluate and implement their own learning. We conceptualized SDL as an individualistic approach and ability to taking informed initiative to recognize, identify and understand ones' learning needs based on the personal learning goals in relation to available resources. Such resources may therefore include but not limited to choosing and or using appropriate learning styles and ability to learning outcomes based on the individual strength and capacity.

According to Sun et al. (2022), based on SDL, learning is required to ensure that they are over and above every potential barriers towards their own learning. Earlier study of Long (1994) and Lee et al. (2014) aver that SDL is more of a psychological process within a learning that propels learner to actively and purposively engage in knowledge derivatives geared towards development of abilities and skills for solving complex problems. Geng et al. (2019) aver that SDL requires learners to have a high-level of self-monitoring, self-determination, self-management skills as such are needed for learners to assume personal responsibility to resolving potential learning difficulties. Although, SDL is a function of learners' autonomy. In other words, the autonomous function of SDL emphasizes the process in which students take sole responsibilities for initiatives that enhance their own learning. On the other hand, such initiatives taken by students with respect to SDL is majorly motivated by stimuli (educational instruction) presented by facilitator/lecturer/instructor of a BL program within the HE space. Although, such stimuli are geared towards motivation of

independent knowledge construction among students. Based on the foregoing, students therefore have the liberty in terms of 'how', 'when' and or approaches to craft responses required by the stimuli presented.

The foregoing is premised on the assumptions of Knowles (1975) as well as Mynard and Stevenson (2017) that students can design and determine their individual learning needs and goals while they set suitable steps based on the projected timelines. In a similar vein, earlier report of Ponton and Rhea (2006) affirmed that autonomous nature of SDL conceptualizes students as a critical agent in the process of teaching and learning because of students' capacity to determine their personal learning resourcefulness, individuals' persistence towards the achievement of learning goals and initiatives such students develop towards the achievement of such learning goals. Based on the positions of Knowles (1975), Mynard and Stevenson (2017) as well as Ponton and Rhea (2006), we affirm that while SDL has an autonomous function towards knowledge acquisition. In other words, based on the asynchronous narratives of virtual learning opportunities (Maphalala et al., 2024), SDL presents students with avenues access learning materials at their own pace in BL programs. The foregoing therefore further stress that SDL can be grounded based learners' attitude towards learning, their own approach towards knowledge construction and acquisition as well as their belief about their learning goals.

Thus, the autonomous function of SDL places a burden on students as an agent to take sole responsibilities for efforts and planning towards knowledge and skill achievements (Wilcox, 1996) but Dolmans et al. (2016) remark that approaches to learning particularly in HE spaces are dynamic, that is, approaches to learning can change based on environmental (physical, psychological and or social environment) and contextual situations. Hence, positive attitude towards learning engagement for development of resilience for self-initiated learning is required (Adinda & Mohib, 2020; Sun et al., 2022; Tekkol & Demirel, 2018; Waheed et al., 2016; Wilcox, 1996). Geng et al. (2019) in their description of SDL, the researcher note that SDL may be termed as a process of an independent study which requires a high sense of motivation and courage. SDL is further said to be a construct that places emphasis on choice, assertiveness, and goal setting. Although Gilbert and Driscoll (2002) as well as Tekkol and Demirel (2018) believed SDL is crucial to collaborative learning.

Some recent studies have indicated that collaborative learning and HE are inseparable concepts (Herrera-Pavo, 2021; Scager et al., 2016). Through collaborative learning, students develop various self-independent and leadership skills because positive interdependence exists among members of the collaborative learning group. In view of the foregoing, some study found a connection between collaborative learning and SDL (Choy & Cheung, 2022; Lee et al., 2014). According to Choy and Cheung (2022), some students were found to be motivated for personal development based on the influence of peers when they participated in collaborative learning engagement. The findings of Choy and Cheung (2022) may have stem from the fact that those students were motivated for personal learning development based on knowledge construction of some group members. Earlier to the findings of Choy and Cheung (2022), Lee et al. (2014) had affirmed that collaborative learning and SDL are complementary way of knowledge acquisition which is formed through interpersonal to intra-mental transition. In other words, collaborative learning could enhance multiple zones of proximal development that may significantly motivate personal learning. Little wonder, that Herrera-Pavo (2021) allude based on socio-constructivist and cultural perspectives that learning is a result of the experience and interactions between environment and people. However, regardless of the potentials of collaborative learning, members of the learning group must be self-motivated and self-directed engage in independent learning activities for personal gain and development. Effective group (collaborative) learning requires almost equal diffusion of knowledge. Hence, an individual with higher efficacy for independent learning may therefore Vaughan (2014) ore have enhanced capacities for creativity critical thinking and problem-solving capacities that will foster knowledge diffusion and management among collaborative learners within the HE spaces. Thus, Wilcox (1996) aver that for quality learning in HE, the place of SDL remains fundamental.

According to Wilcox (1996), SDL symbolizes some of the globally acceptable core principles of HE which include but not limited to autonomy, accountability, academic freedom, epistemological equity and social justice. Further, the expression of Wilcox (1996) project the ability of the two critical agents in HE, that is, the facilitator/

lecturer/instructor and the students to explore the opportunities provided by SDL as a pedagogical approach deployed by facilitator/lecturer/instructor to place students at the centre of the knowledge acquisition and or creation. On the other hand, students as a member of the critical stakeholders in HE who expected by facilitator/lecturer/instructor to leverage on SDL can shape and advance their learning based on self-motivation, metacognitive abilities, and experience (Wilcox, 1996).

Extending the idea of Wilcox (1996), Obimgbo et al. (2022) as well as Stella Chinasa and Ekemezie (2015) note that HE particularly the universities should endeavour to prepare graduates for the world of uncertainties where potentials for employability is getting narrowed on daily basis. While Obimgbo et al. (2022) as well as Stella Chinasa and Ekemezie (2015) advanced institutionalization of vocational skills in HE curriculum, the researchers noted that such approach may not be easily achievable without enforcement of SDL among students in various institutions of higher learning. Submissions of Obimgbo et al. (2022) as well as Stella Chinasa and Ekemezie (2015) further corroborate the earlier statement of Wilcox (1996), who posited that 'Universities must produce graduates who are self-reliant'. From the assertion of Wilcox (1996), students who are self-reliant must have a higher capacity for SDL. In other words, that must be able to take responsibility not only for the actions but for their learning engagements within the HE spaces. While the HE space remain a critical breeding ground for experience and practical skills for independent living, teaching approaches within the HE space must critically consider the implication of SDL for lifelong learning. SDL does not only have potential to improve divergent thinking and improve educational processes, the concept SDL, reflects the traditionally high value for liberal education and lifelong learning.

## 1.2 | Self-directed learning in blended learning among students in higher educational institutions

For more than two decades, technology have continuously invaded the HE spaces. Early influx of technological devices into the HE spaces was basically used to fuel distance learning (Owusu-Ansah et al., 2011). However, over and above distance education, technological application in the education have further diffuse through mainstream education. In fact, Maphalala and Adigun (2021a, 2021b) remarked that with the current impact of technology in HE, the two entities, that is HE and technology have become an inseparable concept. Maphalala and Adigun (2021a, 2021b) furthered that digitalised and multimedia learning have proven advantageous to HEIs and students alike as it has extensively supported conventional face-to-face teaching and learning. With technology, studies have reported that technology eradicated some barriers to learning due to physical space, distance and time and thus extensively provided a seamless diffusion of knowledge and course contents (Hrastinski, 2019; Mahabeer & Pirtheepal, 2019; Maphalala & Adigun, 2021a, 2021b). Regrettably, while education and learning is fostered by technology and remote teaching is appreciated (Adigun, 2022; Arthur-Nyarko & Kariuki, 2019) finding emerging from recent studies have shown that mental health, quality of life, social interactions as well as academic resilience of both students and instructors for remote teaching and learning is threatened (Adigun & Ntokozo, 2022; de los Reyes et al., 2022; Lipka & Sarid, 2024).

Adinda and Mohib (2020) as well Sriarunrasmee et al. (2015) advanced BL as learning activities that can assist to mitigate the potential negatives as presented by Adigun and Ntokozo (2022); de los Reyes et al. (2022) and Lipka and Sarid (2024). As noted by Geng et al. (2019), BL eliminate perceived challenges individually created by face-to-face and online learning. In other words, BL accommodate the combined positives of face-to-face and online learning thereby leading to reaction of a robust learning environment where teaching and learning activities occurs through a combination of face-to-face and online platforms. Based on the submission of Geng et al. (2019), it is convenient to say that BL is a continuum of a learning approach where teachers (instructors) and learning consensually meet at the centre (see Figure 1) of dual modal learning approaches. That is, face-to-face and online model of teaching.

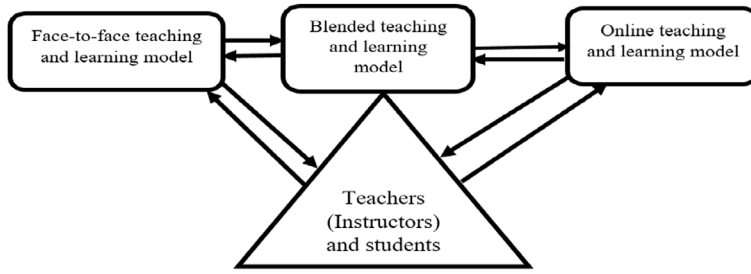


**FIGURE 1** A diagrammatic presentation of blended learning approach (*Source*: Adigun et al., 2024).

Researchers in the educational media have indicated that BL provide students with varied opportunity to engage in learning (Baltork et al., 2015; Heilporn et al., 2021; Hrastinski, 2019; Vaughan, 2014). Through BL students have enhanced potential of active learning engagement and opportunities to construct and deconstruct knowledge with BL geared towards adequate understanding of concept and development of skills. Within the HE spaces, the use of BL create room for critical debates, open dialogue, improved sense of engagement and interaction as well as development or reinforcement of negotiation and assertiveness skills (Garrison & Cleveland-Innes, 2005). Recent studies have further advanced the potential benefits provided to students with the application of BL and the implication of BL on the development of SDL. For instance, studies of George-Walker and Keeffe (2010), Hew and Cheung (2014) as well as Wittmann and Olivier (2021) remark that BL offers some advantages to students over either holistic face-to-face or pure virtual learning. In particular, Wittmann and Olivier (2021) argue that BL approach does not only expand learning opportunities for students to developed through SDL opportunities and expand variation in quality learning experience but BL provide avenue for knowledge acquisition through physical interaction with facilitator/lecturer/instructor as against what available opportunities presented through pure virtual learning. In terms of the psychological implications associated with pure virtual learning such as screen fatigue, BL remains an effective way to effectively reduce associated health and psychological risks (Hew & Cheung, 2014). Maphalala et al. (2021) report that while face-to-face model of teaching can motivate SDL, BL model eliminate the over reliance of students on either the facilitator of other students for the academic activities which results in to expanded students' opportunities to explore learning experiences and opportunities which can further enhance creativity.

A 2004 study by Garrison and Kanuka (2004) recounted higher retention rates, satisfaction and completion rates of student who participated in BL environment as compared to those who participated in non-blended teaching approach. The reports of a study conducted by Edward et al. (2018) among 109 tertiary students in Sri Lanka to ascertain the effectiveness of BL on students' competence in learning Oriental Music showed that BL was effective at improving the performance of participants in learning Oriental Music. Although, Edward et al. (2018) note that students' attitude and motivation were determinants for students' competence. Finding of Edward et al. (2018) corroborates multiple of other empirical evidence (Atiyah et al., 2015; Ora et al., 2018) that conclude on the benefits of BL over either solely face-to-face or online teaching or learning model.

Despite the abundance of literature on the perceived advantages of BL, a few studies have also acknowledged some challenges associated with the adoption and use of BL. For instance, the study of Deschacht and Goeman (2015) based on the analyses exam results of 1883 freshmen of the KU Leuven, Belgium raised concern about the potential negative effect of BL on course retention and increasing attrition rates among students in tertiary institutions. Deschacht and Goeman (2015) clarified that while performances of students in the BL group was high, many of the students dropped out of the BL classes. A 2017 study by Keogh et al. (2017) noted that many students who registered for BL programs have always encountered challenges of Internet connectivity. A more recent study further showed that BL requires high technical resources, skills, and tools which many students who enrolled for BL do not possess (Luo, 2021). However, despite the documented challenges of BL as posited

by Deschacht and Goeman (2015), Keogh et al. (2017) and Luo (2021), Edward et al. (2018) allude that students' attitude and motivation are essential component in BL. Regardless of students' motivation for participation in BL, students' ability to uptake and effective use technology for learning as well as student's technology readiness remain a concern for SDL in BL activities within the HE spaces (Alvarez Jr, 2020; Boelens et al., 2017; Garrison & Kanuka, 2004; Jumani et al., 2022; Saber et al., 2022).

Based on three important factors (strategy, structure, and support), Graham (2013) opine that even though students of various institutions of higher learning have the need to engage in further studies, technological acceptance and self-efficacy for learning remain crucial for the success of an autonomous SDL in a BL HE program. With reference to strategy, structure, and support (Graham, 2013), Boelens et al. (2017) further expanded and categorize potential challenges of BL approach which may further impact on higher motivation for SDL as (i) institutional capacities at incorporating pedagogical flexibility in BL, (ii) seamless facilitation effective students' interaction, (iii) facilitation of learning process, and (iv) limited capacities of instructors (lecturers) to nurturing affective learning climate. In general terms, institutional readiness in terms of resources (human, material and technical), capacity to adopt innovative blended teaching strategies may positively or negatively influence instructors' (lecturers) capacity to fully deploy efficient blended pedagogical strategies, structure students learning programs and provide required support for students (Bennett et al., 2020; Boelens et al., 2017; Evans et al., 2020; Garrison & Kanuka, 2004; Hrastinski, 2019; Ora et al., 2018). Over and above the aforementioned, despite the fact the SDL is essential for knowledge creation and management, how knowledge is constructed through blended approach is significant for learning outcome of students in HE spaces. Lamentably, institutions of higher learning still contend with ensuring knowledge construction, knowledge management and sharing through BL but it is presumed that lectures (instructional facilitators) in HE spaces are yet to understand or have adequate knowledge about how SDL in BL environments can be promoted among students in HEI. Therefore, this conceptual article is posed to advance SDL in BL environments among students in HEI from the constructivist perspective.

## 1.3 | Theoretical orientation

This conceptual/intellectual piece is framed by the constructivist theory (Piaget, 1973). For more than three decades the discussions of constructivist theory have become a philosophical concept that have been use to advance how knowledge is constructed. Other scholars such as Bruner (1996) and Vygotsky (1978) shared the sentiment of Piaget (1973) about the active participation of students in the formation of new knowledge as a build-up upon previously acquired knowledge. The assumption of the constructivists is that:

- All knowledge is constructed, and the outcome of such process is learning. In other words, constructivists believed that when knowledge is constructed an individual must have learnt through the processes.
- Constructivists assume that individual is at the centre of his/her own knowledge construction. Although, it is presumed that such knowledge is invisible until it is challenged by members of the larger community.
- Knowledge is about content. Hence, it becomes imperative for learning to be situated in an appropriate, reliable, and realistic contexts. This further assert that while knowledge is content based, learning is contextual in that learning occurs through means and/or tools (mode of knowledge sharing and management) such as online, face-to-face or BL medium.

From the foregoing, it is further established that knowledge construction and learning derived during the process of knowledge creation cannot be separated from each other. More importantly when knowledge construction is achieved within a community which have collaboratively developed or created tools for knowledge management and knowledge sharing. Unfortunately, dynamic of the society and advancement in knowledge and skills have influence rapid changes to tools and medium through which knowledge is constructed and learning is

achieved. For instance, teaching and learning within the HE spaces extensively disseminated knowledge through face-to-face models (Scager et al., 2016) but emergence of COVID-19 in the last couple of years enforced a swift shift of knowledge construction and learning from face-to-face to online learning models (Adigun et al., 2022; Adigun & Ntokozo, 2022). However, despite the opportunities presented by technologies at resolving halt in educational provisions during the pandemic, psychosocial challenges associated with isolated learning have further encouraged the BL approach (Adigun & Ntokozo, 2022; Azmi et al., 2022; de los Reyes et al., 2022; Lipka & Sarid, 2024; Olawale et al., 2021).

According to Bodner (1986), Piagets' view of the fact that knowledge is constructed through the mind and the knowledge is a life-long constructive process is in line with the principles of BL in that BL is an organized and structured system that encourages knowledge construction through a combination of face-to-face and online models. Thus, learning through blended model is a chain of knowledge constructive mechanism that has capacity to restructure, re-organize the experiences and thought of students. In relation to the submission of Bodner (1986), Woolfolk (1993, p. 485) states that 'The basic idea of constructivism is that students construct their knowledge actively: the learner's mind receives stimuli from the outside reality and chooses which of those that he learns is useful in his everyday life'. Based on the submission of Woolfolk (1993), it can further be deduced that environmental stimuli (extrinsic and intrinsic motivation) (Waheed et al., 2016) is a fundamental factor in constructivism. Interestingly, studies have shown that for enhanced SDL which is geared towards the construction of idea, knowledge and contents, there is need for positive contextual environment (Geng et al., 2019; Gilbert & Driscoll, 2002; Tekkol & Demirel, 2018).

Essentially while BL as used in HEI remain a mean/tool for construction of knowledge, the process of BL provides an avenue for autonomous knowledge construction. Although the role of self-motivation in BL within the HE space is seldom determined in existing researches but the current fact shows that while SDL is essential for efficient knowledge diffusion, lecturers and or Faculty members within the HE space still contend with how students actively construct knowledge and participate in blended teaching and learning processes. Therefore, this conceptual/intellectual piece is instituted to fostering SDL in BL environments within the HE spaces based on the established principles of constructivism.

### 1.4 | The mediation of constructivist perspective in self-directed learning and blended learning among students in higher education

An important and undeniable fact is that technology have successfully permeate all strata of education. Essentially, the usage of technology for knowledge construction and diffusion with regards to learning through synchronous and asynchronous education have been well documented in existing literature (Adinda & Mohib, 2020; Arthur-Nyarko & Kariuki, 2019; Lipka & Sarid, 2024). However, there is still a gap among in literature with regards to the understanding of how students can construct and own knowledge contents through SDL while engaging in BL approach (Maphalala et al., 2021; Wittmann & Olivier, 2021). Although, studies have identified and emphasized the significance of BL over face-to-face and online learning (Heilporn et al., 2021; Jumani et al., 2022; Saber et al., 2022; Smith & Hill, 2019) but questions have continued unabated on issues of SDL in BL (Sun et al., 2022). Until now, there is yet a concrete pathway that provides clearer understanding of how SDL can be fostered in BL in HE, whereas principles and assumption of the constructivist theorist (Bruner, 1996; Piaget, 1973; Vygotsky, 1978) may provide clearer understanding of not only the construct of SDL but also how academics (Lecturers and other Faculty members) have adequately foster SDL in BL among students of HEIs.

One of the assumptions of the constructivists' theory stipulate that knowledge is constructed and during the process of knowledge, learning occurs. Thus, it is based on the foregoing that our position which is situated in the constructivists' theory (Piaget, 1973) posit the teaching using the BL approach must be a concerted effort by faculty members/lectures to ensuring the HE learning activities via the BL approach must be designed

with the mind-set of individualistic learning. We encourage individualistic learning approach in order to further stimulate HE students' potential for self-regulated readings for actives participation in BL in HE. As noted by Li and Gan (2022) as well as Oruç and Arslan (2016) self-regulated learning describes students' ability to actively get involve in knowledge construction whereby they are behaviour and learning processes and (intrinsically and extrinsically) motivated. Oruç and Arslan (2016) agreed that self-regulated learners have a higher affinity for a SDL because that use meta-cognitive approaches in knowledge construction. Hence, the foregoing further indicated that such individual could conduct, control, and decide their learning and adequately manage acquired knowledge.

Additionally, HE students who are consciously enforced to construct their own knowledge for diffusion in BL is exposed to extensive capability for planning, goal setting and self-evaluative potentials. Also, while such students have enhanced self-generated behaviour, ideas, and thoughts towards attainments of learning goals, they become more conscious of autonomous and decisive approached to knowledge creation and construction needed for lifelong learning, independent learning and living. Although, Zimmerman (1998) through a three model approach ('forethought', 'performance control', and 'self-reflection') aver that student have enhanced capacities to actively contribute to teaching and learning processes and also Woolfolk (1993) note that learning requires an active mental work and not passive reception of teaching, Zimmerman (1998) through a three model approach that involves 'forethought', 'performance control', and 'self-reflection', students may present some level of active contribution to knowledge creation and construction. But how would students in BL in HE is encourages to have a forethought of concepts, have control over their own performances which may result into a worthwhile self-reflective ending if they are not adequately guided? Hence, it is important for lectures in HE space to understand the constructivists approaches and incorporate same in their BL sessions because each learner have a unique learning perspective to learning.

Based on individual differences, they may have parallel capacity of independent learning. Thus, we encouraged lecturers/facilitators and other stakeholders in HE spaces to adopt the three-ring-drag-in approach (see Figure 2). The *three-ring-drag-in approach* advance in this conceptual/intellectual piece have four components which are (i) Can't do (ii) Doing through positive support systems (iii) independent knowledge construction and (iv) evaluation/feedback.

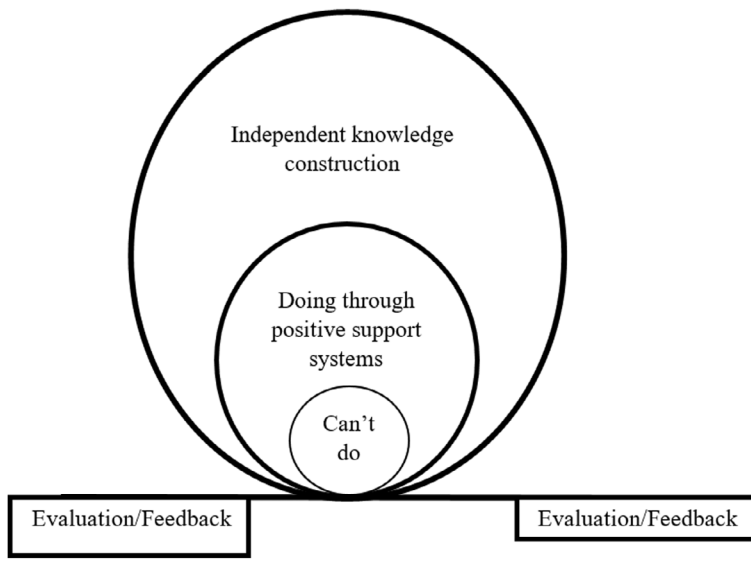


**FIGURE 2** A three-ring-drag-in approach to foster self-directed learning in blended education (*Source*: Adigun et al., 2024).

It should be noted that all learners irrespective of the level of education are registered to be exposed to new knowledge. In other words, it is presumed that students who engage in BL lack some specific knowledge and they are not able to accomplished some specific learning task on their own. Thus, we believe that students within the HE space are coming in to the blended classroom devoid of knowledge the objectives of the classroom. Our position here therefore shares the idea of Kumar (1996) and Rao (2009) about the maxims of teaching which informs and underscores that importance of dragging students along in the process of teaching and learning. As stated by Rao (2009), students have vague knowledge about the new concepts and knowledge a teacher (lecturer/facilitator) is about to share. Thus, lecturer/facilitators as the case may must endeavour and ensure that teaching in blended classrooms should move from 'from known to unknown'; 'simple to complex'; 'can't do' to 'can do'; 'indefinite to definite'; 'psychological to logical'; analysis to synthesis. Our position for a need to drag HE students through the process of BL that changes their perception from 'Can't do' to 'Can do' is based on the premise that HE students have being through the face-to-face model of teaching for much a longer time, and they are much accustomed to such teaching and learning model. Similarly, students who had gone through pure virtual learning for a longer period may have developed extended resilient capacity for e-learning and overcome or adequately adjusted to perceived associated psychology challenges such as irritability, decreased social contact, screen fatigue (Alam et al., 2021). Hence, exposing such students who are once comfortable with either holistic face-to-face teaching model or pure virtual teaching mode to BL may be challenging. Therefore, a careful adoption of drag-in from 'from known to unknown'; 'simple to complex'; 'can't do' to 'can do'; 'indefinite to definite'; 'psychological to logical'; analysis to synthesis through the BL can foster learning from experience, and particularly the development of required capacity for SDL. Therefore, it is assumed that when BL assume the foretasted maxims, students within the HE spaces would develop rapid curiosity, interest, and capacity that to acquire and construct new knowledge. With the foregoing skills, students within the HE space will be self-motivated and endeared to SDL.

The second stage of our *three-ring-drag-in approach* towards the advancement of SDL in BL within the HE space is 'Doing with positive support systems'. It should be noted that provision of support systems in BL goes beyond provision of technical assistance for e-learning (Maphalala & Adigun, 2021a, 2021b) and sites for face-to-face learning. Learning through BL approach therefore requires provision of psychological preparation and emotional supports to students enrolled for BL. While students enrolled into the BL are required to having a higher order of thinking capacities as a set of skills required for knowledge construction, our perspective in this regard is that for effective and efficient development of SDL, facilitators of must be deliberate about the engagement of students with the use of problem-based analyses. A few previous studies have associated problem-based pedagogies to development of emotional and social skills among students in HE (Luy-Montejo, 2019; Maphalala et al., 2021). Thus, Maphalala et al. (2021) specifically note that while HE is geared towards engaging in rigorous academic activities, students within the HE spaces have tendency to experience impaired psycho-social disruption which may further make students to experience symptoms of anxiety, depression, extensive isolation, and deterioration of social capital. Therefore, it is our expectation based on the second stage of our *three-ring-drag-in approach* (Figure 2) that facilitators/lecturers/instructors of BL provide adequate support for students enrolled in the blended classes in a manner that will enhance student's ability to develop resilience for rigorous requirement of blended education that requires an iterative cycle of reflections. Such support provided by facilitators/lecturers/instructors would assist to hone individual's ability to have emotional staminal for self-motivated learning, virtual and physical group works that may improve communicative potential geared towards the enhancement of self-awareness.

Students who receive adequate support will have positive quality of life and psychological capacity for establishing critical analysis of phenomena (Garrison & Cleveland-Innes, 2005; Heilporn et al., 2021). Thus, we consider that concerted effort to ensure that students are assessed based on their abilities to provided critical analysis of issues through problem solving approach, hands-on-activities and co-operative learning may foster creating of new ideas and knowledge and as well learn from multiple sources (Herrera-Pavo, 2021; Scager et al., 2016; Vaughan, 2014). Furthermore, in order to adequately encourage SDL in BL, it is important for facilitators of BL within the HE spaces to adopt the '5Es', that is, engage, explore, explain, extend and evaluate (Bybee et al., 2006).

With HE students at the centre of discussion, facilitators of BL must actively engage students in comprehensive analysis of issues to foster SDL and individual critical thinking abilities. While it is expected that students should be able to explain in detail in respect to the 'Why, When, Where, What and Who' questions as they are made to construct new ideas. Such 'Wh' questions will further deepen not only critical thinking skills but also self-motivation, research mind sets and SDL. In addition, students must be able to extend their ideas to providing solutions to basic societal problems and periodically evaluate their constructed knowledge.

The third ring three of our *three-ring-drag-in approach* (see Figure 2) emphasizes the independent knowledge construction. This their stage of our constructivist perspective towards an enhance SDL in BL with thin the HE spaces acknowledge that knowledge creation, generation and construction of knowledge should be self-driven. In other words, it is our believe that when students are taken away from the 'Can't do' phase (Ring one) through the 'Doing with positive support systems' stage (Ring two), they would have gathered requisite capacity for self-regulated and independent learning sufficient enough to independently address complex issues. At the third state (Ring three), it is expected that when students within the BL classes are given the ample opportunity to analyse and address complex issues, they will be well (intrinsically and extrinsically) motivated (Boyer & Usinger, 2015; Waheed et al., 2016). Our position through the *three-ring-drag-in approach* extend the philosophy of the constructivists (Bruner, 1996; Piaget, 1973; Vygotsky, 1978) who believes that all knowledge is constructed and the outcome of such process is learning. In other words, during self-directed/initiated/regulated learning, students who are enrolled in BL thus have extensive capacities and skills for independent knowledge construction. They are at this point able to create contents which are appropriate, reliable, realistic, and responsive to societal needs. In order to efficiently realize knowledge creation and construction in a manner that is appropriate, reliable, realistic and responsive to societal needs, students within the HE space must be encouraged and motivated to engage in problem solving task and provide independent solution to academic and social tasks. Hence, it is important for facilitator of blended classroom to be proactive and expose students to higher domains of situational analysis and complex task that require critical thinking and problem-solving capacities.

Lastly, the *three-ring-drag-in approach* (Figure 2) is fitted with a baseline of evaluation/feedback. Based on the *three-ring-drag-in approach*, we conceptualized evaluation/feedback as information derived from assessment of students' achievement in the three processes as contained in the 'rings' in relation to knowledge construction through self-directed/induced learning by students enrolled in BL classrooms. According to Dinham (2009) as well as Gómez and Valdés (2019) evaluation and feedback mechanism provide both students and facilitators clear and concrete evidence about observable development in knowledge and skills. Therefore, it is our expectation that facilitators and managers of BL invest in quality time at providing prompt evaluation and feedback mechanism of objective assessment of knowledge constructed or content created by students. Opportunities should be given to students to provide evaluation of facilitators, lecturers/instructors of BL. In addition, students may also provide evaluation and feedback on the modalities and technicalities adopted and deployed towards the achievement of blended pedagogies geared towards the development of SDL.

Based on our constructive perspective to fostering SDL, effective evaluation and feedback mechanism will improve students' autonomous learning and learning outcome. It is our belief that prompt and periodic evaluation and feedback in the *three-ring-drag-in approach* will redirect, refocus, and re-orientate students' actions to achieve personal educational goal(s) by aligning activities and efforts towards the achievement of positive learning outcome in BL environment. Overall, we advocate for the adoption and deployment of the *three-ring-drag-in approach* (Figure 2) in all aspects of HE programs that leveraged on the opportunities provided by technology for teaching and learning engagements. HE institutions that uses various learning platforms such as Learning Management System, Moodle, Backboard among others in a BL situation should leverage on the *three-ring-drag-in approach* for effective development of SDL and efficiently use of SDL for advance academic performance.

While the *three-ring-drag-in approach* is projected for effective development of SDL and efficiently use of SDL for advance academic performance, it is believed that not model, principles, approach, or method is holistic to provide exhaustive solution or remediation to potential challenges. Thus, based on the submission of Akanle

et al. (2020) as well as Theofanidis and Fountouki (2018), we (Authors) believed that the model advance in this intellectual piece may require further assessment based on the implications presented by its implementation in blended learners' opportunities in various HE spaces. Therefore, we advice that each of the stages of the *three-ring-drag-in approach* may be independently and critically examined for suitability for adoption and use across various academic level in tertiary education. Also, it is important that the entire approach to be evaluated periodically preferably after the completion of each course contents or module. Such independent and holistic evaluation of the *three-ring-drag-in approach* will inform rapid and radical reconstruction of the approach for the overall benefit of the academic processes geared towards the advancement of not only SDL but also the application and use of BL approach within the various higher education spaces.

## 2 | CONCLUSION

Technology is one major concept and or factor that is currently difficult to be separated from the current trend in the HE. In fact, the emergence of COVID-19 has further strengthened the bond between teaching within the HE spaces and the application of technology in teaching and learning practices in the presence of a more complex and diversified learners. However, while it is evident that teaching, HE students via online medium alone create more extensive psychological problems (Adigun & Ntokozo, 2022; Lipka & Sarid, 2024) such as depression, extensive isolation and deterioration of social capital through real time social interaction, the use of BL (teaching via online and face-to-face) have been adjudged to a teaching approach that is capable to eliminate challenges presented by either online or face-to-face teaching. In recent time, stakeholders in the HE spaces have accepted, adopted and use BL approach but concerns about students' ability to confidently develop and construct knowledge or create content through SDL approach have been a concern for facilitators of blended classrooms.

Therefore, in order to provide stakeholders with extended capacities to fostering SDL in BL environments, we presented in this article using a constructivist perspective an exposé of BL; SDL in HE; interactions between SDL in BL among students in HEI, and a mediation of constructivist perspective in SDL and BL among students in HE. We advanced in this conceptual/intellectual piece *three-ring-drag-in approach* which comprised of 'Can't do' phase (Ring one), 'Doing with positive support systems' stage (Ring two), 'independent knowledge construction', and evaluation/feedback which served as a baseline for reflection from both facilitators of BL and students enrolled for BL. Based on the *three-ring-drag-in approach* it is expected that students within the He spaces with be more involved in the creation of own knowledge because they have autonomy for their own learning. Hence, we are confident that the *three-ring-drag-in approach* coupled with adequate motivation, SDL can be foster among students who enrolled for the BL in various higher education.

### AUTHOR CONTRIBUTIONS

**Olufemi Timothy Adigun:** Data curation; writing – original draft; writing – review and editing; methodology. **Nhlanhla Mpofu:** Methodology; supervision; visualization; validation; writing – review and editing. **Mncedisi Christian Maphalala:** Conceptualization; methodology; data curation; supervision; writing – original draft; writing – review and editing; validation.

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The authors declare no conflicts of interest.

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## ETHICS STATEMENT

None.

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