SELF-DIRECTED LEARNING AND STUDENTS PERFORMANCE: A CONTEXTUAL REVIEW

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Abstract - Self-directed learning is gradually becoming an integral part of the curricular activities in various institutions, the need to finding an approach of instructional models different from traditional class room teaching for student as part of a lifelong educational movement has increased tremendously and educators are strategizing and becoming more creative as they accept the role they have to play in ensuring that students understand the concept of self-directed learning. This paper therefore explores the concept of self –directed learning, as well as models which have been propounded by scholars over the years. A review of literature is based on online materials and Key words include self-directed learning and university students. Self-directed learning as a concept is based on auto-formation, and educators merely become facilitators of learning. Though there is no acceptable definition of self-directed learning or method of learning, however educators must ensure that methods adopted should test students' readiness to self-directed learning and preparedness for lifelong education.

I. INTRODUCTION

Self-directed learning in a formal setting has sparked interest among self-directed learning scholars. There is no gainsaying that it is generally profitable to explore many faces of self-directed learning in order to clear the conceptual confusions, the practical issues, and the theoretical challenges facing this area of research in adult education.

Self- directed learning ability can help students become independent learners, acquire knowledge beyond the classroom, excel in their studies, and get prepared for challenges beyond the university walls. For many researchers, (Abeles, 2010; UNESCO, 2009; Guglielmino, 1977, 2008; Knowles, 1975) educators are to prepare students to be self-directed, lifelong learners. And that failure in this regards would be a disservice to students.

Despite this clarion call on the importance of SDL in formal and informal setting , there has surprisingly been a conspicuous reduction in SDL research over three decades (Brockett, 2000; Merriam, 2001; Merriam & Caffarella, 1999; Rager, 2003), reduced opportunity for fully developed SDL in institution contexts (Guglielmino, 2013), lack of study on critical SDL variables (Raemdonck, 2012; Brockett et al 2000), quality of experience, and how people engage in and manage SDL(Brockett et al 2000), and lack of studies that test new models and theories in SDL (Merriam et al 2007).

It is no gainsaying that many graduates nowadays are "half-baked". Most times, they don't go further to acquire skills and knowledge beyond what is directly related to their classroom work. Research (Carré, 2000; Dunlap & Grabinger, 2003; Durr, Guglielmino, & Guglielmino, 1996; London & Smither, 1999; Maurer, 2002; Stansfield, 1997; Vann, 1996) has shown that the challenge is there, for leaders, institutions, managers, and human resource professionals to attempt building learning infrastructures that leverage formal and informal learning. How students will "cross the bridge" (continuously learn) in real life situations which is often challenging, points to the urgency of developing the SDL skills or future graduates may find it difficult fitting into the highly competitive job market, where the more skills you have or can acquire determines the extent you can ascend on the ladder of your profession.

In formal setting of education or the university, self-directed learning makes a demand on the learner, the instructor/institution and the process of learning (Brocket & Hiemstra, 1991). Both the social context of the learning and the characteristics of the learner are vital in achieving self-directed learning in a formal setting, like the university. Hence, the role of a learning environment/social context has been emphasised in the literature (Ellinger, Ellinger, Yang, & Howton, 2002;Marsick&Watkins, 1999; Pfeffer&Veiga, 1999; Gureckis, 2009).

The adult education literature shows that adult students have the potential to be self-directed, but some are more self-directed than others. Differences in individual characteristics, demographics, motivation (intrinsic and extrinsic), resources, and support (within and outside learning environment) can even influence their self-directed learning ability. However, adults who have low motivation, or are retroactive or have poor self –efficacy can be helped to become more independent and develop them-selves to become self-directed learners.

II. METHODOLOGY

This review paper was carried out by a thorough review of 30 journal articles. Articles were sourced by searching both subscribed and free resources. Some subscribed databases from the researcher's institution used to identify relevant articles in journals included: Sage, Wiley Online, Emerald Insight, Procedia, Scopus, and Springer Link. Other online platforms and resources like Psycho.Net, and Google

Scholar were used also. Key words (used along Boolean Operators) helped to identify articles. Key-words included: self-directed learning, and university students. The abstracts of articles were read to ensure relevance before they were accepted. The gathering of articles lasted from 15th Sept 2016-30th Oct 2016.

III. LITERATURE REVIEW

Definition of Self -Directed Learning

The seminal work of Houle in 1961, conducted in the University of Chicago, Illinios gave an impetus into the field of Self-directed learning. He prepared the ground that would usher in Self-directed learning as a major research area in adult education. Having interviewed a total of 22 adult learners and classifying them into three categories: (a) goal-oriented, who participate mainly to achieve some end goal; (b) activity-oriented, who participate for social or fellowship reasons; (c) learning-oriented, who perceive of learning as an end in itself. He finally, suggested that those seeking learning for its' own sake, are the ones who look like the self- directed learners (Houle, 1961). Houle expanded our understanding of SDL , he considered it to be a major adult learning characteristic in his work, "The Adult's Learning Projects (1979)" This very work gave a momentum to the study of SDL (Merriam et al, 2007)

The definition of self-direction in adult learning has been considered "skewed by those who choose to define it as they wish,"(Brookfield, 1986, P.18) , and there is a lack of common ground in understanding the meaning of SDL (Chi, 2009), making SDL to be defined in various ways in the literature (Caffarella, 1993; Carré, 2000; Hiemstra, 2000).

SDL is often broadly conceived as self-learning in which learners have the primary responsibility for planning, carrying out, and evaluating own learning (Caffarella, 2000; Hiemstra, 2000; Merriam & Caffarella, 1991). It includes formal, informal and non-formal dimensions of learning. The classical and most repeated definition of SDL is that from Knowles. Knowles (1975) defined SDL as a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (p. 18).

SDL is similar to, but not same with, informal and incidental learning (Cseh, Watkins, & Marsick, 2000; Marsick & Watkins, 2001). Informal learning is learning that is spontaneous, and non-institutional (Marsick & Volpe, 1999). Informal learning can be planned; it can also not be planned and can happen as adults go about their daily lives. Informal and incidental learning may include self-directed learning, social learning, mentoring, coaching, networking,

learning from mistakes, and trial and error (Cseh et al., 2000). The simple way to define a formal education is that it is a "certificate" education. Self-directed individuals use their own initiative/experience and want to become responsible for own learning (Merriam and Caffarella, 1991; James-Gordon and Bal, 2003). For Guglielmino and Guglielmino (2001) the fact of globalization presents us with the challenge of becoming self-directed learners in order to meet up with huge demands whether as students, workers or non-working adults. A self-directed learner has three characteristics according to Chene (1983), the learner is independent, can make choices, and can articulate the norms, as well as limits of a learning activity.

The Concept of Self- Directed Learning

Many authors think that the concept of SDL is intangible and ambiguous (Brockett *et al*, 2000; Benson, 2011; Ng, 2008). This is partly because; other similar terms are used alongside self-directed learning, such as: self-regulated learning, autonomous learning, self-planned learning, self -teaching and independent study. This is more or less a use of nomenclature that does not really apply, thus generating a sort of conceptual non-uniformity. Self-direction in adult learning has been referred to as self-teaching, self-planned learning, independent adult learning, self-directed learning, and self-initiated learning. Candy (1991) pointed out about 30 different terms used confusedly with SDL. The list includes: autodidaxy, autonomous, learning, independent learning, learner-controlled/directed instruction, non-traditional learning, open learning, participatory learning, self-study and self-teaching. Oddi (1986, p.21) adds a "plethora of terms used in relation to the concept" While, Gernster (1992) highlights other 20 different terms used with SDL, which includes self-instruction, self -initiated learning, self- directed enquiry, self-propelled, individual learning and auto telic enquiry.

According to Knowles, "adults are self-directing when they undertake to learn something on their own"(1989, p.91). For Brookfield (1986), the concept of self-directed learning finds deep expression in cognitive and behavioural perspectives. For him, the self is culturally formed (behaviourism). Therefore, there is also a political dimension to self-directed learning (cognitive). This view-point is similar with those of (Brockett & Hiemstra, 1991, p. 24) who aptly defined SDL process as involving "both the external characteristics of an instructional process and the internal characteristics of the learner, where the individual assumes primary responsibility for learning experience"

Many prominent authorities in the field of adult education including: Knowles, Guglielmino, Brookfield, Brockett and Hiemstra, and Candy have all suggested SDL as being a peculiar adult characteristic. Boyatzis (1999) maintained that adults

learn only what they want, and can easily forget the rest. Drucker (1985) acknowledged in his study that learning is a continuous process and makes people able to keep up with daily changes that occur in life. Brockett and Hiemstra's having read the work of other authors (Kasworm, 1983, Long & Agyekum ,1983, 1988, and Oddi,1987) gave a multi-dimensional undertone to the concept of SDL. In like manner, Ponton et al (2005) suggested that SDL can be viewed from three dimensions, namely; sociological, pedagogical, and psychological.

Some researchers have taken time to show the difference between the concept of SDL and other similar concepts. For example, SDL has been distinguished from self-managed learning (SML). For Cunningham (1970) SML is the merging of action learning with self-development. In a similar study conducted by Hurley & Cunningham, (1993) this definition is refined. SML is defined as the ability of learners to work together in groups, to solve real-life problems, which enables them to set their own goals, as well as assume responsibility.. Gilligan, (1994) included learning contracts and the learning sets as being part of SML For some other scholars (Abbott & Dahmus, 1992, p. 58; Guglielmino & Guglielmino, 2001), SML includes high motivation and desire to learn and improve. SDL has also been distinguished from self -regulated learning. While SDL is from adult education studies, SRL is from educational and cognitive psychology. SDL is mostly studied in non-formal setting, (even though there is a present growing interest in formal setting). Self-regulated learning, on the other hand, is mostly studied in the school environment (Loyens *et al*, 2008). While SRL is from the field of educational psychology, SDL is from the field of adult education. Many researchers have approached and used most terms related to SDL (mentioned above) almost synonymously, as though they were not different, (Garrison, 1997; Siadaty *et al*, 2012; Robertson, 2011), thus creating confusion in the conceptualization of SDL.

Self -Directed Learning Models
Linear models
This model is a "straight-forward" model. Learners move through stages or steps, towards their learning goals through self-directed learning(Knowles, 1975; Tough, 1979). Knowles had suggested six steps towards this progression, namely; identifying human and material resources for learning; choosing and implementing appropriate learning strategies; and evaluating learning outcomes. This model establishes that leaners can become self-directed and progressively improve in their self-directed abilities.

Interactive models
Some writers have agreed that SDL should be better understood by looking at the interaction that occurs during learning and how it does occur (Brockett & Hiemstra, 1991; Garrison, 1997; Grow, 1991). Other examples of this model includes; the Personal

Responsibility Orientation (PRO) model (Brockett & Hiemstra, 1991) and Garrison's (1997) model. Every of this model examines learner characteristics and the instructional process.

Instructional model
This model considers the teacher-student dimension of SDL as a teaching/instruction method. It presents how to accompany leaners towards learning by understanding how to instruct them. Some examples of this model are; Grows model (1991), and that of Hammond and Collins. According to Grow, learners move through four staged learning process: dependent, interested, involved, and self-directed learning. Self-direction of a learner is something that is developed through accretions or additions.The instruction is designed to help leaners become self-directed. The independence of the leaner is not isolation. It is only meant to guide them become self-directed. They can also seek help from teacher, or fellow colleagues.

Theories of Self Directed Learning
Humanism
One of the theories of SDL is humanism. Humanism is the idea or belief in human capabilities. Humans can become what they want, i.e. attain self-fulfilment. According to Kenneth Phifer"…ultimately the responsibility for the kind of world in which we live rests with us (Edwords, F., 2008). Self-direction is grounded in humanism (Caffarella, 1993). It points to the fact, that individuals should be helped to live active lives.

Behaviorism & Neo-behaviorism
While behaviourism might be called a "classical" statement on behaviorism, neo-behaviorism is a "modern" out-look of it. Learning occurs when there is a re-inforcement of desired responses. Good examples of this are; learning contracts, skill-based instructional techniques, etc. (Brockett & Hiemstra, 1991). Neo-behaviorism emphasises the exchange between the individual and the environment (Brockett& Hiemstra, 1991)

Critical Perspectives
Three important perspectives define this theory of SDL. They are those of Paulo Freire, Jack Mezirow, and Stephen D. Brookfield. Freire's movement/philosophy was "concientization," which was aimed at empowering the poor farm folks of Brazil to become aware of the ills of the society against them, and how to overcome that. According to Freire(1970) man is a knowing subject and can transform reality.

SDL is a liberating process for Mezirow(1981). He believed that by a critical transformation our "taken-for-granted" beliefs are upturned. Hence, we can reformulate our assumption, integrate perspectives, decide and act (Mezirow, 1991; Brookfield, 1991)

Constructivism
This entails bringing meaning into our experience, events and ideas (Candy, 1991). First, we assume

about human nature, the nature of knowledge and finally the meaning of learning. It means building up, from the scratch in a meaningful and insightful manner.

Learning Motivation Models
Force Field Analysis
According to Miller (1964), the social and economic status of people could account for their decision to participate in education. Other factors that influence their decisions include; age and their position in their life cycle.

Recruitment Paradigm
According to Rubenson (1977), adults participate in learning for both personal and environmental needs. The former, includes prior experience and present needs. The latter, includes reference group, norm and values.

Interdisciplinary Theoretical Framework
Cookson (1989) based the ITF model upon the ISSTAL model of D.H Smith. According to the model, adult participation depends upon 1) External context factors 2) social background and roles. 3) Personality and intellectual capacity factors 4) attitudinal dispositions 5)retained information 6)situational factors

Congruence Model
Boshier(1971) used psychometric survey instruments combined with a factor analysis to measure incongruence in self-concept variables. He found that participants could either be "growth" motivated or "deficiency" motivated. However, the model has been criticized for its blaming the victim orientation (Benseman, 1989)

Chain of Response Model (Cross, 1981)
This model explains that response to participate start from one's self-concept and one's attitude towards education. Previous education, environment, and experience can be precursor to influence both expectancy and the valence attributable to participation. In a bid to learn, people encounter challenges, barriers and opportunities. The interaction of both leads one to decide to participate or not. Benseman(1989) has suggested that this model is very linear.

Self-directed learning as a Process
Some scholars have argued that SDL is a process of helping learners build self-directed learning skills. Hence, learners should be assisted to become self - directed and own their learning (Brockett and Hiemstra (1991), Knowles(1975), Tough (1967), and (Merriam, 2001). Learners are guided to make learning goals, resources for learning, strategies, and how to evaluate their learning. In a 2001 study by Merriam and Caffarella they advocated for an "instructional model." Hammond and Collins (1991) proposed nine steps of instructional model as follow; building a cooperative learning climate; analysing the situation; generating a competency profile;

conducting a diagnostic self-assessment of learning needs; drafting learning agreements; self-management of learning; reflection and learning; evaluation and validation of learning (Hammond & Collins, 1991).

Some researchers have either encouraged SDL in Human Resource Development and others have decried how poorly it is promoted in the work place or among workers. For example, Ellinger (2003) asserted the role of SDL in HRD as being crucial. Collins (1996) had blamed the adult education field for not promoting SDL in favour of corporate agenda. To be a self-directed learner does not mean that the learner cannot seek assistance if the need arises. In fact, getting help can be considered as a part of the process of identifying and using learning resources (Knowles, 1975; Knox, 1973; Moore, 1972; Strager, 1979).

Self-directed learning as a characteristic of personality
Researchers have viewed SDL from a psychological point of view (e.g., Brockett & Hiemstra,1991; Guglielmino, Long, & Hiemstra, 2004; Long, 1990; Lounsbury, Saudargas, & Gibson,2004; Oddi, 1987; Strager, 1979). Long (1990) proposed that SDL involves three dimensions, the pedagogical, the sociological and the psychological.

The study of SDL from a psychological point of view has contributed in entrenching SDL as dealing with adult individuals with different personalities and issues. Psychological attributes like personality traits, tend to persist from one learning environment to the next (McCrae & Costa Jr, 1997; Oddi, 1987). It is necessary to understand that this idea of personality trait with regards to SDL study seems to be at the core of study SDL as personal characteristics. To be self-directed, a learner will have to: have a considerably high degree of proactivity, self-efficacy, be intrinsically motivated; diagnose personal learning needs; sets learning goals; develop appropriate strategies to achieve those goals; and finally, evaluate the whole process, and can proceed on to embrace new challenges (Oddi, 1987; Skager, 1979). But, a learner needs also to be able to distinguish between major concepts and supporting ideas. Hence, according to Garrison, SDL is "an approach where learners are motivated to assume personal responsibility and collaborative control of the cognitive (self-monitoring) and contextual (self-management) processes in constructing and confirming meaningful and worthwhile learning outcomes" (1997, p. 18).

Every adult has potential to be self-directed(Knowles,1975). This means too, that we have varied personality traits-varying from a minimal to a maximal tendency to be a self-directed learner (Brockett & Hiemstra, 1991;Lounsbury et al., 2009). But, personality traits become more visible in late

adolescents and blossoms afterwards (e.g., Arnett, 1999; McCrae et al., 2002).

Self-directed learners are motivated because they have a desire to achieve something on their through their efforts (Stockdale & Brockett, 2011; Vansteenkiste, Lens, & Deci, 2006). Self-directed learners have a sense of self-efficacy (Oliveira & Simões, 2006; Stockdale & Brockett, 2011). Oliveira and Samões (2006), through a factor analysis survey of 384 university students, discovered that self-efficacy, conscientiousness, epistemological beliefs, and beliefs about internal control all had influence on student's SDL, while age and gender had no significant impact. The idea that age and gender are less significant may need further research to validate. However, other researchers have indicated the need for more investigation on SDL as a personality trait (e.g., Lounsbury et al., 2009; Oddi, 1987; Oliveira & Simões, 2006).

Some Research on Self -Directed Learning among University Students

There is no gainsaying that research in SDL within the university environment, or among university students is an area that has witnessed an increased attention by SDL scholars both within the field of adult education and that of educational psychology. In his impressive and scholarly literature review on SDL in formal setting, Abeles, (2010) argued that educators should prepare their students for an uncertain future, and that if they do not prepare their students to be self-directed lifelong learners, they are doing them a grave disservice. This view point is also shared by some other researchers(UNESCO, 2009; Guglielmino, 1978, 2008; Knowles, 1975; cited in Guglielmino & Toffler, 2013).

Hewitt-Taylor (2001) used both semi-structured interviews and case studies to conduct a research with undergraduate nursing students and their teachers on their views on SDL. The study among other findings revealed that teachers and students do not have the same understanding on both the nature and purpose of SDL. Half of the teachers and some of the students defined SDL as an "alone" kind of study. Some also considered it as "freedom" to study what you want. Students and teachers admitted that SDL is a concept that is used confusedly. They also held that it is one teaching method among many others. Only one student and teacher talked about SDL as involving self-assessment by the learner.

Jonathan W. Kohns et al (2006) suggested that although research shows the importance of responsibility in self-directed learning, but not much has been done in placing it within the Reasoned Action Theory(Ajzen, 1975). He therefore, suggested the Triangle Model of Responsibility (Schenker et. al, 1994) as being a good model for understanding responsibility in self-directed learning. A person needs; a) Clear understanding of what is required for desired learning to take place b) Connect oneself as the key agent in learning acquisition, while having perceived control over the process, and finally c) Perceive a possession of the necessary attributes to accomplish what is required.

Katrin Saks et. al, (2014) tried to distinguish SDL from SRL in their work, lamenting the tangled manner in which both words are used by researchers. First, while SDL is from adult education, SRL is from educational psychology or cognitive psychology. Other differences include that SDL is; practised outside the school environment, involves designing learning environment, and involves planning learning trajectory. SRL on the other hand, takes place within a school environment, involves task set by teacher and narrower micro-level construct.

A quantitative study by Wichadee in 2011, in which he performed a paired sample t-test analysis on the use of SDL Instructional model to enhance the English reading ability of undergraduate students. The results show that the post-test mean score t $(119)= 9.45$, $p<0.05$, was higher than the pre-test mean score $t(119)=23.08$, $p<.05$. In a similar research, Bagheri et al (2013) reported a significant difference between mean score in PoBL group and control group as follow: $f (1, 76) = 10.99$, $p<.001$, $n2=.126$. Finally, Litzinger et al 2005, stated the PBL score of the experimental group in his research to be statistically significant above the control group: $(t\_2.565, df\_17, p-0.02)$. These findings support the idea that self-directed learning encouraged through diverse teaching methods among students lead to academic success.

Banz (2009) conducted a study to explore the PRO as a model for understanding how SDL occurs in the museum context. He found that within the museum, self-direction is highly linear. Past experience were used to produce personal correlations for learning. The learners are curious to experience the context, as well as the contents of the galleries.

The role of motivation in enhancing SDL among students has been given a considerable attention in SDL research (Combs, 1982; Purkey & Schmidt, 1987; Purkey & Stanley, 1991 Brookfield, 1986; Garrison, 1997; Regan, 2003). A clear distinction is often made between external (extrinsic) and internal (intrinsic) motivations. For example, externally-imposed rewards and punishments usually associated with teacher-directed classrooms is a kind of extrinsic motivation(Deci & Ryan, 2002; cited in Guglielmino & Toffler, 2013-"The Case for Promoting SDL in Formal Educational Institutions"), while a free and un-imposed desire to learn due to some future expected benefits, knowledge-sake, love of learning, etc., are all examples of intrinsic motivation which is informed by the desire to take responsibility for one's own learning . According to Pink (2009), intrinsic motivation of learners is very crucial, and can encourage creativity.

Some researchers have emphasised the importance of ensuring smooth learning transition from high school

to university studies (Brinkworth et al., 2009; Krause and Coates, 2008; Dynan et al.2008;; Brownlee et al., 2009; Haigh and Kilmartin, 1999; Guglielmino & Toffler, 2012), and the importance of getting students ready for more student-based learning (Dynan et al.2008; Guglielmino & Toffler, 2012). Similarly, the importance of providing instructional design and structured learning scenarios has been encouraged (De Corte, 2003; cited in Guglielmino & Toffler, 2012). SDL among new university students can promote academic success (Credé and Kuncel, 2008; Dynan et al., 2008; Hattie et al., 1996; Jansen and Suhre, 2010), and a successful transition. SDL skills should be facilitated through targeted teaching and learning activities (Guglielmino & Toffler, 2012). As such, the taking of responsibility for SDL by students is crucial (Candy, 1991; Ramsden, 2003). The importance of this import, is glaring as Self-directed learning is being used to instruct undergrads in other fields outside HRD too. This include: engineering field (Bary and Rees, 2006), business (Dynan et al., 2008), nursing (O'Shea, 2003) and veterinary sciences (Blumberg, 2005; cited in Guglielmino & Toffler, 2012). The fact, that freshmen come into the university with diverse skills, make SDL worth implementing at an earlier stage to help the students adjust to the reality of university studies. This perspective is also supported by other researchers (Credé and Kuncel, 2008; Dynan et al., 2008; Hattie et al., 1996; Jansen and Suhre, 2010).

IV. FINDINGS AND DISCUSSION

The literature review has shown that more self-directed learning studies are being conducted with quantitative than qualitative research method. For example, out of the 30 articles reviewed for this study, 18 of them (Wichadee, 2011; Bagheri et al, 2013; Warburton &Volet, 2012; Idros et al, 2010; Boyer et al, 2013; Guglielmino & Toffler, 2013; Fisher & King, 2010; Stockdale & Brockett, 2011; Rhee, 2003; Chiang, 2014; Kek & Huijser, 2011; Lee et al, 2011; Abd-El-Fattah, S. M. 2010; Esterhuizen, 2007; Litzinger et al, 2005; Iyamu & Ukadike, 2007; Silins & Mulford , 2002; DEMİR et al, 2014) were conducted with quantitative method, while the remaining 12(Song & Hill, 2007; Lloyd-Jones & Hak, 2004; Landorf, 2006; Muhammad Madi Bin Abdullah et al., 2008; Ellinger, 2004; Owen & Ed, 2002; Shea, 2003; Saks & Leijen, 2014; Ahmad & Majid, 2010; Hewitt-Taylor, 2001; Banz, 2009; Gureckis & Markant, 2012). In the millennium 2000, Brockett (2000) in a similar manner, made a call that there was a need to do more qualitative studies in the field of SDL. According to him, this would entail studying the quality of experience, critical variables, and how people actually engage and manage their self-directed learning. More than a decade and half after his call, the situation is yet to noticeably

improve. This is obviously a challenge and almost a perennial issue in SDL research.

Furthermore, there is also an increasing number of studies measuring self-directed learning readiness being conducted with various self-report measuring scales, other than the renowned Guglielmino's SDLRS. While not ignoring the contribution of Guglielmino, some writers have challenged the validity of the SDLRS (e.g. Field, 1989), some others have opined that it's not suitable for all contexts (Straka 1995, Fisher 2001), and some have suggested the development and use of other SDL scales to promote scholarship and research in SDL (e.g. Brocket,2000). Guglielmino's SDLRS is the most widely used instrument for measuring or assessing SDLR (Merriam, Caffarela & Baumgartner, 2007). However, there are some limitations with the scale, ranging from its not being applicable to different contexts (Fisher et al, 2001; Straka, 1995) and its shortcomings regarding appropriate validation, as well as having conceptual and methodical ambiguity(Field 1989). The Guglielmino's scale has however, contributed immensely in research around the topic of SDL in adult education. In a way, it gave rise to other contributors (Field, 1989; Straka 1995; Fisher, 2001) interest to reflect on self-report measurement scales in SDL.

Articles reviewed for this study have employed other self-directed learning measurement scales (Table 1), and there is an increasing interest in the scale developed by Fisher et al, 2001 for measuring learning within the nursing scenario.

Table1. Different Measuring Instruments used by some Researchers

Author(s) of Article	Type of Instrument Used
1. Wichadee, 2011	Honey & Mumford Learning Style Questionnaire, SDLRS by Guglielmino & Author designed.
2. Bagheri,	SDLRS by Fisher et al, 2001
3. Warburton& Volet, 2012	Author designed
4. Idros, et al, 2010	Author designed & Guglielmino's SDLRS
5. Kek & Huijser	Multiple scales
6. Demir et al, 2014	SATC & SDLTYS
7. Abd-El-Fattah, 2010	Author designed
8. Esterhuizen, 2007	SDLRS by Fisher et al
9. Litzinger et al, 2005	SDLRS by Guglielmino
10. Silins & Mulford, 2002	Author designed
11. Fisher & King, 2010	SDLRS by Fisher et al
12. Rhee,2003	Author designed

The review of articles showed that a fewer number of studies dealt with validation and verification of SDL models and theories. For example, out of the 30 articles reviewed in this study, only 3 (Landorf,

2006;Stockdale & Brockett,2011; Banz 2009) dealt with either validation or verification of models. This shows that fewer studies are being conducted to test emerging SDL models and theories. The truth is that we cannot know the usefulness of emerging and recent models and theories in SDL, if they are not validated and verified through various studies conducted in different contexts (Merriam et al, 1999). This aspect of scholarship in SDL can clarify the obfuscation in self-directed learning, and promote clearer appreciation of the SDL concept. The way SDL is conceptualized and theorized has stirred up confusion in grasping the concept (Brockett et al, 1991; Benson, 2011; Ng, 2008). Many experts (Brockett& Hiemstra 1991; Long 1989; Candy 1991, Merriam et al 2000) have tried to calm the tide and improve our understanding of the concept. However, there is not yet a consensus view about SDL. Perhaps, looking at SDL from the social, pedagogical and psychological dimensions when theorizing (or conceptualizing) would be a better way to go (Long, 1989).

SDL has been studied in many institutional contexts and among different cohorts. It has been institutional web-based support systems (Idros, Mohamed, Esa, Samsudin, & Daud, 2010), among university students (Bagheri et al,2013; Kek& Huijser,2011; Lee et al, 2003; DEMİR, Ö., Yaşar, S., Sert, G., & Yurdugül, H. 2014) with growing emphasises in engineering science(Litzinger, Wise, & Lee, 2005), nursing education (Esterhuizen, 2007; Ellinger, A.D, (2004). This is a positive development in response to Long's suggestion thatmany researches should be conducted in the field in very many scenarios and contexts (Long, 1999). It is certainly a step forward, towards forging ahead in arresting both the theoretical and conceptual obfuscations facing this area of adult education

RECOMMENDATION

1. More research should be conducted regarding the SDL of university students. Other factors that influence their SDL like; social, political, and cultural factors should be researched more and with various samples and in various scenarios.
2. At the heart of SDL in the university, are the roles played by both the learners and the institutions. This relationship is crucial. Using various models, theories and instruments to explicate this, is needed in the field.

CONCLUSION

This paper review was an attempt to present a summary of some research of SDL among university students. Whether or not we have reached the summit in SDL research generally is not something the author can answer, but there is evidence that more work is yet to be done regarding the SDL of university students as revealed in this paper review.

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