Relationship between Self-Directed Learning (SDL) and Academic Achievement of University Students: A Case of Online Distance Learning and Traditional Universities

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Abstract

The study aimed to highlight the relationship between self-directed learning and academic achievement and the comparison of self-directed leaning via online and conventional university learning. A self-developed survey was used to collect data from online distance and conventional leaners. All the students of the Faculty of Education of one online and one conventional degree awarding universities were the population of this study. There were 1139 students enrolled in online and 1809 students enrolled in conventional degree awarding universities in the Faculty of Education for Spring 2019. Asample of 590 students (20% of population) out of total 2948 students were selected, using a simple random sampling technique. Data was analyzed by using t-test, Pearson r to find out relationship between variables. Findings indicate significant difference between SDL of online and conventional university students. Also, co-relation of SDL with academic performance is high in students learning via online contrary to that of conventional university students. The study suggests that using SDL as teaching approach to develop students' abilities to self-regulate their teaching-learning process.

Keywords: Self-Directed Learning (SDL), Online Distance Learning (ODL), Conventional University Learning, Academic Achievement

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Introduction

Present era demands students to become lifelong learner throughout their career and in academic choices. Higher education also demands that students should aim at direct learning. It can be achieved collaboratively while learning and working (Cremersac, Wals, Wesselink, Nieveenb & Muldera, 2014). Self-directed learning (SDL) always appears beneficial for the students as they can work and study simultaneously. Self-directed learning is a method which can measure students' learning desires, safeguard their appropriate learning, lead them towards deliberate actions and measure their subsequent knowledge.

Further, it is a method of teaching depending on learners' ability to learn (Khiat, 2015 & Timmins, 2008). On the other hand, Brockett and Hiemstra (1991) coined that self-directed learning is a blend of process and personal traits where an individual takes the responsibility of his/her learning while Houle (1961) asserted that it is a learning where a group of learners becomes independent outside of traditional institute learning and setting.

According to Jossberger, Gruwel, Boshuizen and Wiel (2008), self-directed students can regulate their learning while Doyle (2008) asserts to get mastery over self-directed learning; students must be expert in some personal skills. The personal skills are finding out and analyzing the quality sources for knowledge, organizing significant information, shaping information logically, writing reports, management of time and recalling what has been learned using problem-solving schemes and by monitoring one's personal learning. Furthermore, Knowles (1975) says that SDL is the ability to help one's self independently. It also determines what an individual student needs for learning and how a student wants to accomplish learning clearly. It also highlights how a student implements different learning techniques to assess his SDL (Oladoke, 2006).

Quoting Knowles (1975), Ayyildiz and Tarhan (2015) said that learning steps are highlighted through SDL. These steps are identifying learning needs, articulate learning aims implicitly, and determine learning resources, to select, plan, employ and assess appropriate outcomes. Likewise, SDL also closely relates to self-regulation, self-efficacy and self-control. It also requires control over learning, regulation, intrinsic, extrinsic motivation and success during learning activities (O'Shea, 2003).

Literature on SDL shows that SDL focuses on personal responsibility for learning, challenging problems, readiness for learning and basic time management skills (Boynak, 2004). On the other hand, Long (2007) divides SDL into two components. First is personal skill; second is general skill. It comprises of cognitive properties to determine targets and processing information. Avdal (2013) also coins that self-directed learners

must possess and determine learning aims, suitable learning resources, proper learning strategies, time management to examine students' achievements. Students who are capable of doing self-directed learning can provide received knowledge to others to perform better during learning process (Boyer & Kelly, 2005).

Through SDL students become responsible of their learning during learning process. In this process, students are capable of assessing their own learning activities at any stage. As it is an independent learning process, students can diagnose their learning needs and goals. They can also identify relevant material resources and practically apply different learning techniques to evaluate learning outcomes (Knowles, 1975).

In addition, SDL also enhances learning by adopting different learning strategies. It is a goal of Higher Education to develop self-efficacy and achievement among the students. Nadi (2011) stated that in SDL process, learning control transfers from teachers to the students to carry out independent learning. It also demands self-motivation from the students to achieve their target goals.

This study aims to highlight an association between SDL and academic achievement. This study is based on this assumption that there exists a relationship between SDL and academic achievement of university students learning through traditional and online distance learning. To justify the assumption, the researcher will highlight previous studies in order to make a difference between SDL and online learning. Previous studies' data will be presented in analysis section to examine how SDL has greater impact on students' academic achievement.

Operational Definitions of Terms

In this research article two main variables were in consideration. Operational definition based on the purpose of study is stated below:

Self-directed learning (SDL)

Self- directed learning is considered as the individual own ability to take initiative, regulate its life without seeking help of others. This is the ability to identify his/her learning needs and to identify resources that can lead him/her in attaining goals.

Academic achievement

In this study, graduates were asked to mention their CGPA gained in previous semester. These grades were used as academic achievement of students for both modes of institutions.

Objectives of the study

The study aimed to achieve the following objectives:

1. To compare the SDL of students learning in an online learning institute and a traditional university.
2. To find out the difference between the SDL of online distance and conventional university students.
3. To analyze the relationship between SDL and academic achievement of students in online distance learning.
4. To study the relationship between SDL and academic achievement of students in a traditional university.

Hypothesis of the study

$H0_1$= There is no difference between SDL of an online distance and a conventional university students.

$H0_2$= There is no positive relationship between SDL and academic achievement of students in an online distance learning mode.

$H0_3$= There is no positive relationship between SDL and academic achievement of students in a traditional university.

Literature Review

Self-directed learning traces back to Greek history. Greek philosophers SDL like Socrates, Plato, and Aristotle were used to do SDL. It happened because that time no institutes were presented. These scholars used to understand SDL on their own 150 years ago. In 1840 Craik enjoyed self-education and also introduced to people while in 1859 Smiles published a book named Self Help. It appreciates learners' personal help.

It is found in literature review that SDL has become a major research area. Its foundation was laid by Haule in 1961. He interviewed 22 students to know their reason of participation in learning. The participants responded that they take learning as goal-directed, activity oriented and learning oriented. SDL is must be self-directed; learners are authentic sources of learning and motivated by self-esteem (Hiemstra, 1994). In 1926, conceptual framework of SDL was first introduced for adult learners by Lindemann. It aims to show learners' own choice to select their own learning (Brookfield, 1986).

Merriam (2001) further described that Knowles has developed framework for adult learners based on five assumptions. First, all learners possess self-concept towards learning i.e., self-directed. Second, majority of the learners have different social roles which drives their learning. Third, learners also need instant use of knowledge i.e., problem solving. Fourth, their experiences also serve as learning sources and lastly adult learners are always self-motivated. Advocates of SDL argue that it has an important role in adult learning (Bolhuis, 2003 & Kulich, 1970). While, Lister (2016) said that adult learners are aware of productive learning and they value learning. It is only an adult learner who comes back to study and after other activities (Manning, 2007).

SDL has been taken and seen through many lenses by many researchers. For example, according to Oddi (1987), SDL is a process while Brockett and Hiemstra (1991) argue that it has a link with psychology. For this, they provided two components entitled "SDL and learners' self-direction". Mainly, it is Knowles (1975) who comes up with widely used definition that SDL is a process. In this process, an individual takes initiative for learning with or without others' help. They also identify their goals, learning needs, select learning strategies and then evaluate learning outcomes. He further argues that in SDL, an individual motivates learning intrinsically. He indulges himself in learning settings and also has access to learning sources. Moreover, Knox (1973) asserted that in this process, learners learn independently.

In psychological context, Merriam (2012) stated that learning can be viewed under five categories. These are behaviorist, cognitivist, humanist, constructivist, and social learning. From these, two categories are linked to SDL cognitivist and constructivist. Cognitivist approach says that learners must possess four abilities i.e., self-awareness, self-monitoring, critical and creative thinking, and improving learning styles while constructivist says that learning is all about SDL. Vaivada (2012) documented that SLD produces independent learners as they have ability to use knowledge in real life situations.

SDL has also a relationship with self- efficacy. Skager (1979) said that self-directed learners are highly possessing self-efficacy traits in order to meet new challenges. In the same context, Garrison (1997) documented that in SDL, learners take the control over cognitive faculties in order to construct new learning outcomes.

As SDL is also viewed under the lens of learners' personality traits, some researchers have come up with a model for the assessment of a normal personality known as Big Five Model (Barrick& Mount, 1991; Digman, 1990).

Effects of SDL on Students' Academic Achievements

According to Lounsbury, Steel, Loveland and Gibson (2004), SDL cannot be achieved and observed independently as it is highly associated with academic achievement. Many studies have been conducted to examine and find a relationship between SDL and academic achievement. Cazan and Schiopca's (2013) study indicated that SDL is a good indicator to predict learners' academic achievement. Khiat's (2014) study showed that SDL left an effect on students' academic achievement. A study by Tekkol and Demiral (2018) proved that SDL has made a significant change in university students' academic achievements. Saeid and Eslaminejad's (2016) study showed that there is a relationship between students' academic achievement, SDL and learning readiness while a study by Kan'an and Osman (2015) indicated that SDL is necessary for Science students in order to become successful students. Suknaisith's (2014) study revealed that at university level, students were satisfied with SDL while Malison et al., (2018) study proved that SDL positively showed learning with intention, open-mindedness', characteristics of self-discipline and self-management and desire to learn.

Devi et al., (2012) showed that students in curriculum based learning performed readiness and enjoyed SDL as compared to hybrid curriculum. Khodabandehlou et al., (2012) study showed that there is a big difference between teacher-centered learning and SDL. Their results showed that students' reading comprehension improved through SDL activities. Roux's (n.d) results revealed that students' mathematic performance improved through SDL.

Self-Directed Learning and ICT

SDL and ICT are also highly correlated as ICT is being used in educational context too (Prestridge, 2012). Mostly, every part of life is linked with the use of ICT (Mareco, 2017). In addition, Hamidi et al., (2011) stated that ICT has enabled learners to access education online. As in regular classes first students are taught then are given homework. They are given opportunity to assess their intelligence (Asfar & Zainuddin, 2015). By adopting ICT, students enhance and promote their SDL abilities. Through ICT, students collaborate with learners from the same context and communicate globally. Its use motivates students and they become life-long learners as they become self-directed and independent learners (Saxena, 2013).

Dawson et al. (2012) study indicated that technology and SDL have a strong relationship. Their findings showed that technology also promoted students SDL skills likewise Rashid and Asghar's (2016) study had also indicated a strong relationship between ICT and SDL. Eyyamand Yaratan's (2014) study supported that students of mathematic class showed improved results when taught through SDL and ICT as compared to those who were taught without technology and SDL.

Strategies to Enhance Self-Directed Learning

The word strategy is taken form Greek word "strategia" meaning "general". The word general describes a plan of action to achieve goals (Lin & Tai, 2015). In this regard, learning strategies are always well planned and conscious attitudes of the learners like thought provoking questions (Griese et al., 2015). Weinstein and Mayer (1986) said that through learning strategies, students acquire new knowledge.

With reference to learning strategies, previous studies showed that there are number of strategies to enhance and promote SDL. It is found that self-directed learners can teach other students too as to transfer their own learned knowledge. Further, group work assignments help students in understanding subject matter with full understanding while the self-directed learners can utilize their learned knowledge. By doing so, it will enhance their learning while promoting to a wider range (Douglas & Morris, 2014).

Likewise, collaborative learning also enhances SDL. It is found that interactive online sessions provide different projects (Bryan, 2015). Robertson (2011) stated that when a student collaborates with his/her peer, then it enhances intrinsic motivation. On the other hand, blogs are new to enhance learning and self-assessment as blogs are effective and interactive. Literature shows that sharing personal experiences with others also enhance self-reflection. It also helps in to encode knowledge in new way (Butcher & Sumner, 2011). Social interaction is also a way to enhance intrinsic motivation while SDL appears as binding force to intrinsic motivation and reflective learning. Moreover, social media improves complex knowledge and management skills (Rampai, 2015).

Humanism and Connectivism: A Way to Improve Self-Directed Learning

As it has been mentioned earlier that self-directed leaners are responsible of their learning. In this context, self-directed learners are also responsible to adjust their learning processes and goals. It is the responsibility of the learners to utilize SDL in a professional way while considering it their prior responsibility (Hatcher, 1997). In a different way, Cross (1992) states that it is also the responsibility of the educators to pay attention on self-directed learners' unique knowledge as to focus on humanistic theories in order to promote individual learners. In the same context, Conradie (2004) emphasizes connectivism and humanism for self-regulation.

Barriers to Lifelong Self-Directed Learning

As opportunities to self-directed are many, likewise, it has many barriers. Literature shows discrimination, financial barriers and time constraints are the main barriers to SDL. On the other hand, shift from teacher-centered learning to student-centered learning also sometimes appear challenging for both parties (Hatcher, 1997). Another barrier to SDL is self-motivation, self-esteem and lack of confidence while learning through SDL activities while administrative barriers also play an important role in independent learning (Douglas & Morris, 2014). Little access to technical skills is another barrier which must be overcome hence greater use of critical thinking skills must be acquired (Bryan, 2015).

Teachers' Role in Promoting Self-Directed Learning

The goal of overall education is to produce educated citizens. Majority of the institutes are implementing self-directed classes. It would be possible only with a teacher's help. Knowels (1975) argues that a teacher's role is like a facilitator than a traditional teacher. The main role of teachers is to promote awareness in students about SDL. To engage students in SDL activities like topic discussion is one of the major components while learning through SDL (Taylor, 1995). Further, Lyman (1997) stated that readers who generate questions from discussions make aware other readers to become good readers. It is also a teacher's role to engage students in group discussions through SDL strategies. Morrow, et al. (1993) suggested that when students select topic of their choice for writing ; they produce a longer piece of writing while other scholars asserted that teachers should come up with new framework in which students have choices to select a topic of their own choice (Guthrie, et al., 1997; Temple & Rodero, 1995).

On the other hand, Bolhuis (1996) suggested that teachers should free themselves from all burdens and must not be preoccupied while locating students' errors. It is found in literature that teachers must tolerate students' weaknesses. It would appear beneficial for the students to achieve their set objectives (Bolhuis, 1996). Leal (1993) supports students as to explore their ideas during peer discussions while Corno (1992) supports students to follow their personal interests during SDL while teachers should encourage students to reflect. By all means, Many, Fyfe, Lewis and Mitchell (1996) asserted that teachers are guided to make a strategic framework which predicts, questions, clarifies and summaries learning. By doing so, students will be able to use this framework during SDL. Overall, literature reviews show that in SDL process students are guided to learn online or printed material rather than from the teachers. They should also learn on their own. They should also test their progress (Mezirow, 1985; Knowles, 1975 & Neimi, 1985).

Conceptual Framework of the Study

This study used the following conceptual framework to investigate the difference between self-directed learning of online distance learning and conventional university students.
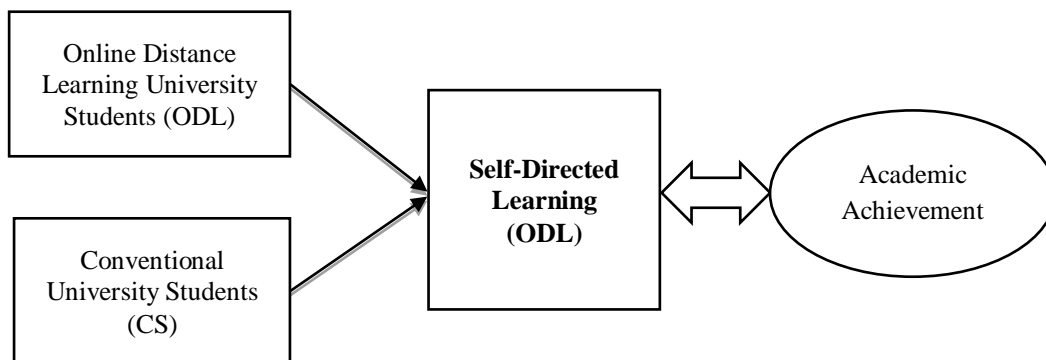

Figure 1.*Conceptual framework of the study*

Methodology

This research followed the descriptive research design. A self-developed survey named "Self-directed Learning Survey" was used to collect the data from virtual and distance learners and conventional leaners. Instrument was based on the factors identified after the literature review of SDL construct. Moreover, content validity was ensured from experts and instrument was improved.

All the students of faculty of education of one online and one conventional university was the population of this study. There were 1139 students enrolled in online university and 1809 students enrolled in conventional university in the Faculty of Education for Spring 2019. By using simple random sampling technique, a sample of 590 students (20% of population) out of total 2948 students were selected. From the selected sample, a total of 480 questionnaires were received back with response rate of 81%. The reliability of the instrument in terms of Cronbach's alpha was .959which means instrument was highly reliable. Researchers themselves administrated the survey and collected the data from respondents.

Data Analysis

For data analysis, descriptive and inferential statistics were applied to generate results using SPSS.

Table 1
Self-directed learning of Online and conventional university students

Variables	N	Mean	SD
SDL of Online Distance Learning University	243	161	24.449
SDL of Conventional university	237	153	22.934

The mean value of 161 (40-200 theoretical range of the instrument) on SDL scale shows that students' of ODL university hold good SDL as compared to the students of conventional university.

Table 2
Difference between self-directed learning of ODL and conventional university students

Variables	N	Mean	SD	df	T	Sig.
ODL students	243	161	24.4	475	3.35	.001
Conventional university students	237	153	22.9	474.57	3.36	.001

Table 2 shows that there is significant difference between SDL of ODL students and SDL of conventional university students.

Table 3

Correlation between self-directed learning and academic achievement of online distance learning university students

Variable	N	R	Sig.
Self-directed learning	243	.536**	.001
Academic achievement	243		

**. Correlation is significant at the 0.01 level (2-tailed).

There was a large, positive correlation between SDL and academic achievement, which was statistically significant ($r = .536$, $p = .001$). So, our null hypothesis is rejected.

Table 4

Correlation between self-directed learning and academic achievement of conventional university students

Variable	N	R	Sig.
Self-directed learning	237	.206**	.006
Academic achievement	237		

**Correlation is significant at the 0.01 level (2-tailed).

There is small, positive correlation between SDL and academic achievement, which was statistically significant ($r = .206$, $p = .006$). So, our null hypothesis is rejected and it is concluded that there is correlation between studied variables.

Findings and Discussion

The study aimed to find the SDL of students studying in online distance learning and conventional universities and examined the difference of SDL of students belong to both kind of universities. The mean value on SDL scale showed that students of online distance learning university hold good SDL as compared to that of the students of conventional university. So, it is said that SDL from both universities were high but online distance learning students shown greater SDL. These conclusions are aligned with the study of Dawson et al. (2012) indicated that technology and SDL have a strong relationship. The higher mean of university students showed that they were attending regular classes online and do have a regular feedback mechanism with teacher so they are more able to direct themselves about their learning. Furthermore, ODL students are proactive and have positive tendency to manage all learning activities and do perform better in the exams as well. Likewise, low mean of conventional university students indicated that they mostly rely on teachers' instructions and peers activities to accomplish their academic tasks.

This study found significant difference between SDL of online and conventional university students. These findings are similar to the Khiat's (2014) study as he reported that SDL has a positive effect on overall students' academic achievement. Similarly, Tekkol and Demiral (2018) proved that SDL has made a significant improvement in

university students' academic achievements. Furthermore, when hypothesis was tested to find out the relationship between SD Land academic achievement of online distance learning university students. A positive and large correlation between variables was observed. It is said that ODL students are self-directed learners and they tend to achieve better academic achievement as compared to conventional students. Results of this study are also aligned with the findings of Carson (2012) who studied the SDL of students studying in online distance learning university and supported this notion. Cazan and Schiopca's (2013) also shared the same results indicated that SDL is a good indicator to predict learners' academic achievement.

Similarly, null hypothesis was tested to identify significant relationship between SD Land academic achievement of conventional university students. The result showed a positive but small association between variables. It was concluded that positive correlation was found with conventional universities also, but it can be said that their SDL is dependent on the teacher driven activities or tasks. These findings are alike to the outcomes reported by Gabrielle, Guglielmino and Guglielmino (2006). They found that students who have access to web-based material; they have higher level of increased readiness for SDL also achieve high grades as compared to conventional students. Chou and Chen's (2008) also supported our findings as SDL is directly related to students' performance and their study discovered a positive correlation between studied variables.

Conclusion and Recommendations

This research aimed to see the difference of SDL of students studying in two different modes of education i.e. conventional and online distance learning universities. It was also aimed to explore relationship of SDL and academic achievement of students in both universities. It was concluded that the SDL of students from both universities was high but online distance learning students showed greater SDL. Then correlation between SDL and academic achievement was also positive and high between SDL and academic achievement of online distance learning university students as compared to conventional university students.

This study recommended that SDL should be incorporated as a teaching strategy and it may be imparted in teachers training programs and curricula for teachers to improve the teaching learning process.SDL strategies must be introduced to students before the start of their academic sessions at higher education level as students must be able to regulate their studies and academic activities. Moreover, Teachers may also be encourage to develop a framework to implement SDL in the conventional classrooms. Lastly, it is also recommended to explore SDL construct with academic self-efficacy and motivation among students in Pakistani context.

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