



**Faculty of Cognitive Sciences and Human
Development**

**SELF-DIRECTED LEARNING READINESS AMONG
POSTGRADUATE STUDENTS IN UNIVERSITI MALAYSIA
SARAWAK (UNIMAS)**

TELEMACHUS LO

**Master of Science
(Learning Sciences)**

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PhD

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**SELF-DIRECTED LEARNING READINESS AMONG POSTGRADUATE
STUDENTS IN UNIVERSITI MALAYSIA SARAWAK (UNIMAS)**

TELEMACHUS LO

A dissertation submitted
in partial fulfilment of the requirements for the degree of
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The dissertation entitled **Self Directed Learning Readiness Among Postgraduate Students in Universiti Malaysia Sarawak (UNIMAS)** was prepared by **Telemachus Lo (17030202)** and submitted to the Faculty of Cognitive Sciences and Human Development in partial fulfilment of the requirements for the degree of Master of Science (Learning Sciences).

It is hereby confirmed that the student has done all the necessary
amendments for examination and acceptance.

(DR NOREHAN BINTI ZULKIPLY)

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ABSTRACT

Guglielmino's self-reporting SDLR questionnaires was used to determine SDLR level, to study the effects of various factors (gender, age, work experience and year of study) and the relationship between SDLR score and academic performance (cgpa) among postgraduate students in Universiti Malaysia Sarawak (UNIMAS). 123 postgraduate students responded to the email survey via Google form. Results indicated that SDLR level among postgraduate students in UNIMAS was average. Using parametric tests (t-test and one-way ANOVA) it was discovered that there was no significant difference in SDLR level when comparing between gender, across age groups, across work experience and between year of study. Finally, in analysing the relationship between SDLR scores and academic performance (CGPA) using Pearson correlation, there was no significant correlation among the two factors. Possible explanations for the observed results, practical implications and recommendations for future study are also discussed.

KEYWORDS : Self Directed Learning Readiness, postgraduates, age, gender, semester, work experience, academic performance.

ABSTRAK

*Kajiselidik Tahap Kesediaan Pembelajaran Pantauan Kendiri (TKPPK) Guglielmino telah digunakan untuk menentukan TKPPK, untuk mengkaji kesan pelbagai faktor (jantina, umur, pengalaman kerja dan tahun pengajian) serta hubungan antara skor TKPPK dan prestasi akademik (CGPA) di kalangan pelajar-pelajar pascasiswazah di Universiti Malaysia Sarawak (UNIMAS). Seramai 123 orang pelajar telah melengkapkan borang kajiselidik melalui email menggunakan 'Google form'. Didapati TKPPK di kalangan pelajar pascasiswazah UNIMAS adalah sederhana. Dengan menggunakan ujian parametrik (*t*-test dan *one-way ANOVA*), didapati tiada perbezaan signifikan bila membandingkan TKPPK dan faktor jantina, kumpulan umur, pengalaman kerja dan kumpulan tahun pengajian. Dalam kajian hubungan antara skor TKPPK dan prestasi akademik (CGPA) menggunakan korelasi Pearson, didapati tiada korelasi signifikan di antara kedua-dua faktor. Penjelasan dapatan kajian, implikasi praktikal dan cadangan untuk kajian akan datang turut dibincangkan.*

KATA KUNCI : *Tahap Kesediaan Pembelajaran Pantauan Kendiri, pascasiswazah, umur, jantina, semester, pengalaman kerja, prestasi akademik.*

INTRODUCTION

Hsu and Shiue (2005) stated that more learners are pursuing tertiary education, including in Malaysia. This is due to the increase in awareness about the importance of education and better standard of living. In 2016/2017 intake, there were 222,926 enrolments for undergraduate and postgraduate programs in government and private universities in Malaysia. Even though the figure is slightly lower compared to 2015/2016 intake of 233, 974 students, the overall trend the last decade shows an upward pattern (Ministry of Higher Education, 2017).

Learning theories explained wide range of learning styles from fully guided approach such as the chalk and talk on one side, and self-directed learning at the other. Adult learning model (andragogy) made popular by Malcom Knowles in 1970s, stipulates that adult learners are self-directing, internally motivated and experienced. Knowles (1968) (as cited in Merriam, 2001) argued that these learners are ready and stimulated to learn when they identified the existence of knowledge or skills gap, between their desired and current condition.

Self-directed learning (SDL) can be defined as the process where individuals or learners proactively plan, implement and monitor their own learning process (Guglielmino, 1977, as cited in Fisher and King, 2010). SDL inculcates the idea of an independent, taking control, determined, life-long learning learners (Guglielmino, 2008). Under this view, learners are seen as active participants in their own learning and consciously aware of their learning needs, goals and strategies, and taking proactive measures to achieve them. When learners make the transition from secondary school (middle school) to tertiary education (such as college and universities), the ability to be self-directed is getting more and more important for effective learning (Guglielmino, 2008).

SDL Readiness (SDLR) measures the readiness level of students to be involved in self-directed learning process. Research has indicated that SDLR is an important element in learning (including adult learning) as they make the transition from fully guided approach in traditional classrooms to self-directed approach in tertiary institutions (Hsu and Shiue, 2005). Hiemstra and Brockett (1994) proposed several aspects that are relevant to SDLR that include learning responsibility and self-directedness. Guglielmino, 1977, as cited in Fisher and King, 2010) developed SDLR scale that covered areas such as openness to learning opportunities, self-concept as an effective learner, having the initiative to learn, acceptance of personal responsibility for learning, having the love of learning, being creative, possessing strong future orientation, able to use good study skills and utilise problem-solving abilities to solve learning related problems.

In Malaysia, several SDL and SDLR studies have been conducted that mostly involved undergraduates in nursing and engineering programs, distant learning mode and online learners. For example, Norzaini (2007) conducted a study on the readiness of undergraduates to use SDL approach in a local university, and her findings indicated that SDLR appears to be positively associated with work experience. She went on to propose that this could be due to the increased in learners' experience and skills as they journeyed through life and work. Ibrahim and Silong (2002) as cited in Ahmad and Majid (2010) identified the barriers to SDL in a virtual environment, which were age and social status. Older learners were found to face more difficulties in being self-directed with the usage on online technology in learning especially due to their poor IT skills. Badli, Esham and Faizah (2010) as cited in Ahmad and Majid (2010) conducted a qualitative study on 3 online Malay learners to analyse the impact of culture on SDL and indicated that culture has a mixed influence on the students' SDL readiness.

Self-Directed Learning

As learners enter tertiary education, they have to make the transition from depended style of learning to a more self-directed approach (Knowles, 1968 as cited in Merriam, 2001). Under adult learning model (andragogy), learners are seen as self-directing, motivated internally, and are more experienced. They are ready and stimulated to learn when they identified the gap in their desired and current level of knowledge and skills (Knowles, 1968 as cited in Merriam, 2001). This means that self-directed learners are actively involved in their own learning, from knowing what they want to learn, sourcing for information and completing relevant learning tasks. They also perform self-monitoring to assess their level of understanding and progress.

According to Hiemstra (1994), the pioneering work on SDL was done by Tough (1979) in his book titled *The Adult Learning Projects*. In the book, he elaborated the reasons for adult learners to participate in learning. He classified the reasons into three categories namely activity, goal and learning orientation. Guglielmino (1977) (as cited in cited in Fisher and King, 2010) defined Self-directed learning (SDL) as the process where individuals proactively plan, implement and control their own learning process. Gibbon (2002) described SDL from the perspectives of goal (objectives) and process and stipulated that SDL can be seen as an increase in the knowledge, skills or performance pursued by learners for personal reasons (such as personal developments, self-upgrading, etc) using any learning means available. This learning can occur in any place, at any time and at any age of the learners. According to Knowles (1990), self-directed learning can be characterized and differentiated from other learning approaches by the procedures, skills and techniques by which the learning goals and objectives are formulated, learning resources are identified, strategies are planned, and learning outcomes are monitored and evaluated.

Merriam (2001) investigated previous works of SDL researchers and came to the conclusion, that SDL has three broad learning goals (other than subject content) namely to develop learners to be self-directed, to encourage transformational learning (i.e. learners reflect on their own learning and progress) and to promote emancipatory and social action (i.e. to free the learners cognitive and social barriers to enable them to contribute to positive social change).

Different scholars and researchers have different views and perspectives on SDL. For example, Harrison (1978) described SDL as a process of organizing learning instruction that emphasized on learners' autonomy over instructional process. In Harrison's opinion, learners in SDL should take the centre stage in learning and therefore should be given autonomy to determine their own learning preferences. Other researchers such as Guglielmino (1977) (as cited in cited in Fisher and King, 2010), viewed SDL as more of personal attributes of the learners, encompassing characteristics embedded in the learners themselves such as initiative, self-awareness, creativity and problem-solving skills. As such, Guglielmino (1977) (as cited in Fisher and King, 2010) viewed SDL as an intrinsic part of learners, and her study and SDL instrument strive to measure these intrinsic factors. Garrison, (1997) as cited in Ahmad and Majid (2010) had an almost similar view with Guglielmino (1977) (as cited in cited in Fisher and King, 2010) in which he described SDL from the perspective of humanistic view. According to Garrison, the core idea in SDL is the desire to be in control of deciding what to learn and how to learn it.

Several models have been proposed and developed to understand SDL. Examples of such models are Mocker and Spear's Two-Dimensional Model (TDM) and Garrison's Three-Dimensional Model (TDM) (Song & Hill, 2007). Below are the perspectives of three SDL models proposed by Candy (1991), Brockett and Hiemstra (1991) and Garrison (1997) as described by Song and Hill (2007).

Perspectives	Description	Models		
		Candy (1991)	Brockett & Hiemstra (1991)	Garrison (1997)
Personal Attribute	Moral, emotional, and intellectual management	<ul style="list-style-type: none"> • Personal autonomy • Self-management 	<ul style="list-style-type: none"> • Goal orientation (personal attribute) 	Self-management (Use of resources) <ul style="list-style-type: none"> • Motivation
Process	Learner autonomy over instruction	<ul style="list-style-type: none"> • Learner control • Autodidaxy 	<ul style="list-style-type: none"> • Process orientation (learner control) 	<ul style="list-style-type: none"> • Self-monitoring
Context	Environment where learning takes place	<ul style="list-style-type: none"> • Self-direction is context-bound 	<ul style="list-style-type: none"> • Social context: role of institutions and policies 	

Table 1 : Perspectives on SDL as described by Song and Candy (2007, p. 28)

Candy's model cited in Song and Candy (2007) proposed that SDL covers four dimensions namely, personal autonomy, learner-control, self-direction and self-management. However, the model does not describe SDL in various learning contexts such as classroom learning or online learning, which today, is getting more important (Song & Candy, 2007). Brockett and Hiemstra (1991) model combined learners intrinsic characteristics with the learning process. Their model described SDL in terms of learners' personal attributes and learning process such as learner's control and goal orientation (knowing what to learn and how to learn them). Under this view, self-directed learner is seen as someone that has pre-determined learning goals, and has control over the process of achieving the goals. Unlike Cindy's model, Brockett and Hiemstra (1991) took into account social factors such as learning institutions and policies to describe SDL. Garrison's (1997) SDL model emphasized the role of learners' motivation and self-monitoring in pursuing and achieving the desired learning goals. Under this model, learners actively monitor their own leaning goals and progress, and are able to motivate themselves to overcome learning challenges faced along the learning process. However, as with Candy's model, Garrison's model neglects the impact of external

factors on learning such as learning mode (traditional vs online) and institutions of learning which are important to determine learning effectiveness (Song & Candy, 2007).

In term of characteristics, Cercone (2008) stated that learners that practice SDL will be more independent in term of learning (not over relying on teachers and instructors), willing to take initiative, persistent in their learning quest (in spite of challenges along the way), self-discipline, having high self-confidence and possess the desire to learn more to improve themselves. Self-directed learners are also able to organize resources (such as time, learning materials, etc) more effectively, formulate and develop their own learning plans, has positive attitude towards learning (like and enjoy learning) and are focused on their learning goals. From the above, SDL inculcates the idea of an independent, taking control of learning, determined and life-long learning learners (Guglielmino, 2008). However, contrary to popular beliefs, views and assumptions about the image of self-directed learners, SDL does not necessarily mean learning in isolation or solitary learning. Rather, in this type of learning approach, learners also seek assistance from friends, colleagues, teachers and instructors. They also source information from books, magazines, journals, online sources and other audio-visual materials to enhance their learning (Abdullah, *et. al.*, 2008).

In conclusion, from the literature above, SDL can be seen as covering not only on the instructional design and process aspects of learning, which gives more autonomy for the learners. It also covers learners' personal attributes that enable them to be self-directed such as having good self-awareness of their own learning needs, has strong internal 'motivational muscles' (able to motivate themselves when facing challenges), has strong future orientation (such as being proactive and able to plan and monitor own learning) and possessing the resourcefulness to search for information beneficial for their own learning.

Self-Directed Learning Readiness

Not all learners, including those at tertiary learning institutions, are ready to be self-directed (Ahmad & Majid, 2010; Dynan, Cate & Rhee, 2008; Haron, 2007; Shiong, Aris & Tasir, 2009). Cercone (2008) observed that some learners need higher level of guidance, direction and support, while others are readier to be self-directed. SDL Readiness (SDLR) measures the readiness level of students to be involved in self-directed learning process. The readiness level in SDLR refers to the extent to which learners have the personal characteristics, attitude, talent and skills that are needed for independent learning (Osman, 2015). Beitler (2000) as cited in Haron (2007) says that individuals who score low in SDLR usually prefer a more structured learning options such, as lectures in the traditional classroom settings. In contrast, their counterparts with high SDLR scores usually are more ‘learning-proactive’. They prefer to determine their own learning needs and goals, plan their learning activities and then implement their learning plan. However, this does not mean that those that score high in SDLR do not learn best via traditional teacher-centred method.

Research has indicated that SDLR is an important element in learning (Hsu & Shiue, 2005) and most students especially in tertiary institutions, are not ready to be self-directed learners (Ahmad & Majid, 2010; Dynan, Cate & Rhee, 2008; Haron, 2007; Shiong, Aris & Tasir, 2009). Knowles (1970) as cited in Haron (2007) stipulated that this could be due to the that the school system that we have, has conditioned learners to be dependent (on their teachers and instructors) rather than being independent and self-directed. As such, most learners are not prepared for self-directed learning approach when they enter institutions of higher learning, which required learners to be more self-directed. The failure to adapt to self-directed learning style has been proven to affect academic performance, learning motivation and learning attitude among learners including those at tertiary institutions (Ahmad & Majid, 2010).

In his research in SDL, Hiemstra (1994) proposed several aspects that are important to measure SDLR namely, learning responsibility and self-directedness. Other scholar such as Guglielmino (1977) as cited in Fisher and King (2010), proposed several elements in SDLR that included self-concept as effective learner, openness to learning opportunities, informed acceptance of responsibility for own learning, having initiative in learning, love of learning, creativity, positive orientation to the future, ability to use study skills and problem-solving skills. In studying SDLR among nursing students, Fisher, King and Tague (2001) included three factors to determine learners' readiness namely self-management, desire to learn, and self-control. From these, they also developed specific SDLR instrument specifically to measure SDLR among nursing, medical and health sciences students. From her ideas on SDLR, Guglielmino (1977) has developed the widely used generic SDLR scale (SDLRS) that encompassed factors mentioned earlier to study, and measure learner readiness to be self-directed.

Research on Self Directed Learning and Self-Directed Learning Readiness

Mahmud, Haroon, Munir and Hyder (2014) in studying SDL among 194 medical students in Pakistan, concluded that self-directed learners showed positive attitude towards research. They observed that students that planned, implement and monitored their own study tend to be more positive towards their research such as having more discipline, submitting their report on time and are more open to instructors' suggestions and feedback. This finding further strengthens the idea that self-directed learners tend to show positive habits towards learning and are more motivated. However, Mahmud e.t al. (2014) did not study other factors in SDL such as learners' readiness, gender and the link between SDLR and academic performance.

In comparing the effectiveness approach to learning, Murad, Fernando, Varkey, Larry, Prokop and Murad (2010) conducted a meta-analysis study on SDL and remarked that, SDL is associated with moderate improvement in the knowledge domain compared with traditional teaching methods (such as chalk and talk). They further speculated that SDL maybe as effective in the skills and attitudes domains of learning for certain types of discipline such as engineering, nursing and medical. As such, they proposed that SDL approach could be combined with other learning methods to make teaching more impactful.

In the context of SDL readiness (SDLR), from literature, it was observed that most studies that were conducted among students, undergraduates and graduates, obtained SDLR scores hovering between average to low. For example, in studying SDLR among 250 undergraduate students in the US, Dynan, Cate and Rhee (2008) concluded that most of the undergraduates were not ready and unprepared to be taught via self-directed learning approach. In Australia, among 407 nursing students of various semesters, Phillips, Turnbull and He (2015) discovered that SDLR score was lower among the first semester students compared to their senior counterparts. This showed that when the new students enrolled in the program, most were not ready to be self-directed learners. Phillips, Turnbull and He (2015) stated that students must be given time to develop their self-directed learning skills, as they make the transition from high school to tertiary learning institutions. In another study, 130 medical students undergoing twinning Bachelor degree (Medicine & Surgery) from India and Malaysia, were tested and it was discovered that overall, the students' SDLR score was average (Abraham, Fisher, Kamath, Izzati, Nabila & Nur Atikah, 2011). SDLR level among 109 online learning students in two local universities namely, Universiti Teknologi MARA (UiTM) and Universiti Tun Abdul Razak (UNITAR) were found to be mostly average and below average (Haron, 2007). In their research on 63 science teacher trainees at Malaysian teachers training college, Abdullah and Mat Nor (2014) concluded that the teachers' SDLR was average. In other

research, Shiong, Aris and Tasir (2009) discovered that SDLR score were average and below average for 266 students that undertook degrees in education in Malaysian government universities. Example of study that produced significantly high SDLR score was conducted by Gilany and Abusaad among 275 Saudi Arabian nursing students. It was discovered that 75% of the respondents ($N = 211$) scored SDLR of more than 150 using Fisher's SDLR scale for health sciences (Gilany & Abusaad, 2013).

In their research on SDLR and time (duration of study), Chakravarthi and Vijayan (2010) discovered that certain elements in SDLR, such as self-management, desire for learning and self-control, increased over time among the 170 medical students being researched. They concluded that this supported the idea that SDL is a maturational process i.e. the ability to be self-directed learner improves over time, as students developed the necessary knowledge and skills. This conclusion was similar to the findings by Abdullah and Mat Nor (2014) in their research on 63 science teachers undergoing training at teachers' training college, and also by Shiong, Aris and Tasir (2009) that compared undergraduate and graduate students that took education studies in Malaysia. In this study, graduate students were found to have higher SDLR compared to undergraduates, due to their longer educational journey and experience. Along the way, the students developed necessary knowledge and skills to be more self-directed in their studies. However, in a different time-related study that included learner's age by Norzaini (2007), she discovered that there is a weak correlation between SDLR score and the age of the respondents. She concluded that the older the learner, it does not mean that he or she is more self-directed. This is in contrast to the ideas proposed by Knowles (1980) as cited in Ahmad and Majid (2010) that stated, as learners mature and age, their learning concept and style moves from being dependent learners to being self-directed ones. As such, Norzaini (2007) speculated that there are other factors that determine SDLR other than age and experience alone.

In analysing the link between gender and SDLR, several studies stipulated that female students tend to have higher SDLR compared to their male counterparts. In their comparative study of 266 undergraduate and graduate students, in local learning institutions in Malaysia, Shiong, Aris and Tasir (2009) found out that female students had significantly higher SDLR compared to their male counterparts. Other studies that supported these findings in Malaysia included Haron (2007) that studied SDLR among web-based students, Abdullah and Mat Nor (2014) that studied SDLR among science education trainee teachers and Osman (2015) that studied 112 engineering students. In the US, a study conducted by Slater, Cusick and Louie (2017) involving 584 first year undergraduates in health sciences, discovered that female students ($N=230$) were significantly having higher SDLR scores compared to males. However, in studying 407 undergraduate nursing students in Australia, Phillips, Turnbull and He (2015) concluded that there were no significant differences in SDLR among male and female students. The results of the study were however limited to its sample composition, which was heavily skewed to female (348 students) compared to male (59 student).

In studying SDLR and academic performance (measured by academic results i.e. GPA and CGPA), the results were relatively mixed. Edmondson, Boyer and Artis (2012) conducted a meta-analysis on 277 previous SDL and SDLR studies and found strong correlation between these two factors and academic results of students. Among 120 engineering students in Australia, Nepal and Stewart (2010) discovered that students with better academic results (higher CGPA) tend to have higher SDLR score compared to their counterparts. Kan'an and Osman (2015) found a strong correlation between SDLR and National Exam science score among 83 secondary school students in Qatar. In Malaysia, Haron (2007) discovered strong correlation between SDLR and academic achievement, among 109 web-based students in UiTM and UNITAR students. Haron speculated that this could be explained by the mode of study, whereby the students (which was mostly web-based) required higher computer literacy

and technological skills to enable them to study via self-directed online approach. In their study among 63 science teachers in Malaysia, Abdullah and Mat Nor (2014) discovered weak correlation between SDLR and academic performance of the teachers. However, their study was limited by the small sample size.

In summary, previous studies about SDL and SDLR that analysed various demographic factors, such as age, gender and semester have produced mixed results. One exception is the link between gender and SDLR which was discovered to 'favour' female students. Majority of the literature that was reviewed, stated that female students tend to score higher SDLR compared to males. However, almost all of the researchers did not put forward clear explanation of the reasons behind such phenomena. The link between SDL and SDLR with academic performance such as GPA and CGPA was also mixed.

Few researches on SDLR were conducted among Malaysian graduate students (such as Shiong, Aris & Tasir, 2009), especially involving specific mode of study (such as coursework) that compare various demographic factors with SDLR such as age, gender, semester and work experience, and to study the link between SDLR and academic results. Furthermore, SDLR studies among university students were mostly conducted in West Malaysia and focusing on specific fields of discipline such as engineering, medical and health sciences. As such, there is a need to study SDLR among students that undertake other disciplines than the ones mentioned above. From literature, it is also observed that the overall results are on the studies about SDLR and demographic factors are mixed. As such, this study aims to address this gap and explore SDLR among graduate students focusing specifically in Universiti Malaysia Sarawak (UNIMAS) postgraduate by coursework students. This study aims to analyse the effect of specific demographic factors such as age, gender, semester and work experience on SDLR. It will also analyse the effect of SDLR on students' academic performance. It is hoped that this study will further contribute to the understanding and literature on SDLR and the specific

factors mentioned especially in the Malaysian context. It also could assist policy makers in learning institutions to formulate intervention strategies to assist students in improving their SDLR level before embarking on their educational journeys.

Research Objectives

This study is guided by the following research objectives namely;

- To investigate the level of SDLR among post graduate via coursework.
- To investigate the level of SDLR among post graduate students via coursework across age, gender, year of study and work experience.
- To investigate the relationship between the level of SDLR and academic performance (measured by CGPA score) among post graduate via coursework.

Research Questions

Based on the above research objectives, the following research questions have been formulated for the purpose of this study;

- What is the level of SDLR among postgraduate students?
- Is there any difference in the level of SDLR between gender among postgraduate students?
- Is there any difference in the postgraduate students level of SDLR across different age groups?
- Is there any difference in the postgraduate students level of SDLR across year of study?
- Is there any difference in the postgraduate students level of SDLR across year of work experience?
- What is the relationship between SDLR and the academic results (CGPA) of postgraduate students via coursework in UNIMAS?