

Self-Regulated Learning SRL Assessment in Occupational Safety and Health OSH Competency Based Training

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ABSTRACT

Self-regulation is the ability to develop, implement, and flexibly maintain planned behaviour in order to achieve one's goals. This study employed a qualitative design involving purposive studies to determine the level of self-regulated learning SRL among people attending competence base training in the field of occupational safety and health measured by Self-Regulation Questionnaire SRQ. A total of 334 Occupational Safety and Health OSH competency based trainee in National Institute of Occupational Safety and Health (NIOSH) Malaysia participated in the study. The result show that 61.4% of the respondent possessed low level of self-regulated learning capacity. Findings from the study suggest that modes of programme and academic qualification is not a significant factors influence self-regulated learning in OSH competency based training.

Keywords: Self-Regulated Learning (SRL), Self-Regulation Questionnaire (SRQ).

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1.0 INTRODUCTION

Learning is a complex process which constitutes an important element of human development over the centuries (Conradie, 2014). Human development can be achieved through self-regulated learning SRL. Although SRL has long existed, however in recent years SRL has become a concern area in educational psychology. SRL is a process that assists someone's in managing their thoughts, behaviours, and emotions in order to successfully navigate their learning experiences. This process occurs when a person's purposeful actions and processes are directed towards the acquisition of information or skills (Zumbrunn, S., Tadlock, J., & Roberts, E.D., 2011).

Although SRL was viewed as especially important during personally directed forms of learning, such as discovery learning, self-selected reading, or seeking information from electronic sources, it was also deemed important in social forms of learning, such as seeking help from peers, parents, and teachers. The core issue is whether a learner displays personal initiative, perseverance, and adaptive skill (Zimmerman B. J., 2008).

In Occupational Safety and Health–Master Plan 15 (OSH-MP 15) (Ministry of Human Resources Malaysia, 2010), Malaysian government has stated a goal to become a self-regulated country in the aspect of occupational safety and health in the workplace. Toward achieving this goal, a lot of ground work has been done by the government together with the support from the private sector. Hence the preparation to become a self-regulated country is crucial. In accordance with that, National Institute of Occupational Safety and Health (NIOSH) Malaysia is one of the agencies mandated by the Department of Occupational Safety and Health DOSH, Malaysia to organize Safety and Health Officer SHO course to all SHO trainees in Malaysia. This study was performed to determine the level of SRL amongst OSH competency based training trainees in NIOSH Malaysia.

2.0 LITERATURE REVIEW

Research on self-regulated learning SRL began as an outgrowth of psychological investigations on self-control among adults and its development in children (Zimmerman, B. J., & Schunk, D. H., 2011). An early definition of SRL was brought out by Zimmerman, B. J. (1986) as he defined self-regulated learners as those who are meta-cognitively, motivationally and behaviourally active participants in their own learning process. Zimmerman, B. J. (1990) suggested that self-regulated learners are distinguished based on their systematic use of metacognitive, motivational and behavioural strategies, their responsiveness to feedback regarding the effectiveness of their learning, and by their self-perception of academic accomplishment. The influence of self-regulation on academic success has been demonstrated by ample evidence of research studies (Zimmerman B. J., 2008).

Cheng (2011) demonstrated that students' learning performances in Hong Kong were closely related to their learning motivation, goal setting, action control and learning strategies. Research on the relationship between SRL and workplace performance is not widely studied however, research on the relationship between SRL and academic performance amongst students shows that it has a positive relationship that includes motivational as well as learning strategy aspects of SRL (Azlina, 2007). Effney, Carroll, & Bahr, (2013) investigated the sources of successful SRL strategies in a teaching environment and concluded that teachers were the most commonly identified source of various SRL

strategies. Teacher led experiences that promote self-regulatory skills in the early years of high school were valued. The findings also showed that students obtained higher scores when they used appropriate SRL strategies. This findings is consistent with previous research (Yen et al. 2006), (Yen et al., 2005).

In another study, (Marchand, 2006) examined the perception of secondary teachers and university teachers on self-regulated learning. Her study revealed secondary teachers were found to value the goal of personnel development and student in secondary education were experienced learning process and learning skills while university teachers were found to value the goal of opinion information and the focus of university education was on knowledge acquisition and an academic attitude. Thus, she recommended secondary teachers to be exposed to SRL strategies as method of teaching to prepare student for university education. Frequently studies on SRL was associated with student achievement either in primary or secondary schools or university students, exploring self-regulated behaviour at work can extend our knowledge in self-regulation because people spent major part of their life at workplace (Kadhiravan, S. & Suresh, V., 2008).

A number of instrument were developed to assess SRL (Zimmerman B. J., 2008) such as Learning and Study Strategies Inventory LASSI, Motivated Strategies for Learning Questionnaire MSLQ and Self-Regulated Learning Interview Scale SRLIS. The usage of these instrument to indicate SRL among student is well established but knowledge on the usage among adult is lacking, therefore usage of more reliable instrument is needed. Self-Regulation Questionnaire SRQ was developed as a first attempt to assess self-regulatory processes through self-report. They did not know whether people could reliably and accurately report their own self-regulatory capabilities. Items were developed to mark each of the seven sub processes of the (Miller, W. R., & Brown, J. M., 1991) model, forming seven rationally-derived subscales of the SRQ (Brown, J. M., Miller, W. R., & Lawendowski, L. A., 1999). Miler, W. R., & Brown, J.M. (1991) formulated a seven-step model of self-regulation to evaluate general behavioural of self-control. Even though this instrument is rarely used to measure the SRL capacity (Zimmerman B. J., 2008), but it was proven to be useful instrument to evaluate SRL capacity among out of school time programme practitioners (Bandy, T. B. S., & Moore, K. A., 2010).

All related studies discussed above, signify that research on SRL capacity has garnered a great deal of interest among researchers. Based on the studies, researchers attempt to understand and explain the level of SRL capacity among adult learner attending safety and health competency based courses.

2.1 Occupational Safety and Health in Malaysia

Along with the proliferation of various employment sectors nowadays, various issues arise primarily about occupational safety and health. An increase in the number of employees and advanced of technologies used in occupational sectors has led to many changes in the employment sector. Due to these changes, many aspects should be taken into account especially about safety, health, and the well-being of the workers, employers and other parties that involved. Occupational safety and health is defined as a multidisciplinary activity which aims to protect and promote the health of workers which done by eliminating any safety and health hazardous; enhance physical,

mental and social well-being of workers; and develop and promote sustainable work environments and work organization (Tadesse, T., & Admassu, M., 2006).

In Malaysia, the key legislation, in relation to occupational safety and health, is the Occupational Safety and Health Act (National Institut of Occupational Safety and Health, Malaysia) OSHA 1994. Its serves as a benchmark or reference point on the employer-employee responsibility and provisions of any other written law relating to occupational safety and health. It lays down the legal minimum standards on safety and health conditions in the work place, which must be complied by the employer. This legislation covers a variety of OSH requirement such as general standard of employer-employee responsibility and the safety of working environment. One of the responsibility of employer is to hire a competent person to act as Safety and Health Officer SHO in the workplace. The SHO shall advised the employer on the measure to be taken in the interests of OSH in workplace. In order to obtain a competent SHO certification, a person have to undergo a proper training conducted at any approve training provider in Malaysia. One of the approved training provider in Malaysia is National Institute of Occupational Safety and Health NIOSH Malaysia. Statistic shows almost 2500 people attended SHO courses yearly (NIOSH, 2014).

3.0 RESEARCH METHODOLOGY

This is quantitative research which aim to identify level of SRL using purposive sampling. Selected sample were Safety and Health Officer SHO trainee registered at NIOSH Headquarters in Bandar Baru Bangi, Selangor Malaysia. Samples were from two different modes of programme. 334 respondents have been participated in this research. Sample size was determined based on Cochran 1977 sample size determination formula (Bartlett, J.E., Kotrlik, J.W., & Higgins, C.C, Spring 2001).

Level of SRL was measured through Self-Regulation Questionnaire (SRQ). The instrument used was a self-administrated questionnaire. Questionnaire was distributed to SHO trainee at the first day of class which consists of two parts, part A represent respondent's background including gender, age, ethnic, academic qualification and modes of programme; and part B contains 63 questions and answers that have been documented based on Likert scale. The feedbacks of the distributed questionnaire were collected each time after the first class ended. The data has been recorded and updated as responses received. For each question, the data received were assigned with numerical values for the purposes of data analysis. Data collection were conducted over five months starting from April 2015 until August 2015. Data analysis software selected in this study was "*Statistical Package for Social Science*" (SPSS) software version 18.0.

4.0 RESEARCH FINDINGS

Descriptive statistical analysis method used were simple occurrences and percentages distribution to explain the outcome of the research.

4.1 Part A: Demography Background

Table 1 shows the demographic information of the respondent. Out of 334 respondent, majority of them were 29 years and below (51.8%), male (86.2%) and Malay (71.6%). Slightly similar

demography information were obtained from the study made by (Siti Nurani et al., 2014) (Rosliza et al., 2015). Whereby, study sample were workers in OSH sector in Malaysia.

Table 1 : Demographic Background Information about the Respondents

	Description	Number of Respondents	Percentage
Gender	Male	228	86.2
	Female	46	13.8
Race	Malay	239	71.6
	Chinese	35	10.5
	India	48	14.4
	Others	12	3.6
Age	19 years and below	4	1.2
	20 - 29 years	169	50.6
	30 - 39 years	105	31.4
	40 - 49 years	38	11.4
	50 years and above	18	5.4
* N= 334			

Table 2 shows academic qualification of the respondent attending this OSH competency based training. Most of the respondents attending OSH competency based training were from higher education academic background with diploma certification and above. Table 3 shows the mode of programme for this particular OSH competency based training module. Mostly half of the respondents attended this courses in full time mode (53%).

Table 2: Academic Qualification

Academic Qualification	Occurrences	Percentages (%)
Secondary Education	77	23.1
Higher Education	257	76.9
Total	334	100

Table 3: Modes of Programme

Modes of Programme	Occurrences	Percentages (%)
Full Time	177	53.0
Part Time	157	47.0
Total	334	100

4.2 Part B: Level of Self- Regulated Learning

Table 4 shows level of SRL capacity among respondents. Majority of them possess low SRL capacity (61.4%). Respondents with total score of greater than 214 shall be consider as high SRL capacity, while those how having total score below than 213 shall be consider as low SRL capacity.

Table 4 : Level of Self- Regulated Learning

Levels of SRL	Occurrences	Percentages (%)
High	129	38.6
Low	205	61.4
Total	334	100

Finding shows that at each level of academic qualification, whether secondary or higher education, most of the respondents possessed low level of SRL. Result indicate that no significant correlation between academic qualification and the level of SRL with p value (0.643) and alpha value (α) 0.05. Therefore, it can be concluded that academic qualification did not contributed to level of SRL.

Table 5: Level of SRL on Academic Qualification

Academic Qualification	High (Occurrences / %)	Low (Occurrences / %)	Total
Secondary Education	28 (36.4)	49 (63.6)	77 (100)
Higher Education	101 (39.3)	156 (60.7)	257 (100)

Two different modes of programme offered for OSH competency based training, namely full time and part time. Full time courses is a twenty two 22 days training conducted from Monday till Friday. Part time mode is method of training conducted by organising the training class each weekend on Saturday and Sunday for a duration period approximately three month or participant shall undergo training once a month from Monday till Friday until they complete entire courses. For both modes of programme, each of them were dominated by low SRL level rather than high SRL level as tabulate in table 6. Result indicate that no significant correlation between modes of programme and level of SRL with p value (0.204) and alpha value (α) 0.05. Therefore, it can be concluded that modes of programme did not contributed to level of SRL.

Table 6: Level of SRL on Modes of Programme

Modes of Programme	High (Occurrences/%)	Low (Occurrences/%)	Total
Full Time	74 (41.8)	103 (58.2)	177 (100)
Part Time	55(35.0)	102 (65.0)	157 (100)

5.0 DISCUSSION AND RECOMMENDATION

Analyses of the level of self-regulated learning were categorized into two levels, either high level or low level. Based on the results, majority of respondents indicated low level of SRL and the researcher can presumed that at the beginning of the courses, respondents were lack of meta-cognitive strategies in their own learning processes. This also indicated respondents were low in their motivational and behavioural level. Therefore, it is suggested the OSH competency training provider to enhance the cognitive learning strategies; metacognitive and regulation strategies; resource management strategies (Boekaerts, 1999) (Azevedo, 2012) and the need for an advance methods and instrument of teaching in a class. Teachers or instructors play a major role in encouraging and promoting SRL (Daloglu, A., & Vural, S., 2013) (Cazan, 2013) (Peeters et.al. 2014) in order to encourage trainee to be responsible for their own learning.

Variety of training elements can be one of the best instrument to encourage SRL. (Dignath and Buttner 2008). Other study Schunk and Zimmerman (1998) on SRL indicate that intervention programme use by instructors to encourage self-regulation in terms of problem solving shows a positive relation between intervention programme and enhancing problem solving skills.

Results of the level of SRL on academic qualification and modes of programme indicate that differences in level of academic qualification and modes of programme were not the determining factors of a person's level of SRL. On the contrary, SRL, which determines work performance as well as academic achievements. High level of SRL can be achieve by encouraging the use of collective group work and peer tutoring. Integrating high level and low level of SRL groups might be contributing to a successful learning process. Study by Whitebread, et al. (2007) proves that the collective group work and peer tutoring led to the development of SRL as well as metacognitive abilities.

6.0 CONCLUSION

As result of this research, it shows that majority of OSH competency based training trainee in this study possess low level of SRL. This indicate that OSH competency based training trainee must enhance their SRL capacity to be in line with the OSHA 1994 which demanding a self-regulated law enforcement. It is also one of the most important element to ensure safety and health condition at the workplace been increased.

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