Factors Affecting Students’ Self Regulated Learning Using Learning Management System

Shayesteh Hashemyolia, Azizan Asmuni, Shaffe Mohd Daud, Ahmad Fauzi Mohd Ayub and Jasmin Arif Shah

1Department of Professional Development and Continuing Education, Faculty of Educational Studies, Universiti Putra Malaysia, Serdang 43400, Selangor Darul Ehsan, Malaysia
2Department of Foundations of Education, Faculty of Educational Studies, Universiti Putra Malaysia, Serdang 43400, Selangor Darul Ehsan, Malaysia

Abstract: In blended learning, student’s engagement is important in the learning outcomes because it predicts student academic progress and achievement. The low rate of student’s engagement in Learning Management System (LMS) is a very important issue and there is a need to examine the factors affecting it. The Self Regulating Engagement or self regulated learning strategies (SRL) that is metacognitive and cognitive learning strategies to complete a task is as an important variable for explaining students’ performance and engagement in online learning. There are many factors influencing the SRL as shown by past research. However, a more stable predictor of SRL need to be studied in the context of LMS. Thus this paper is deliberated with the objective of determining technology learning environment factors affecting SRL among students. The dependent variable is SRL (motivation, cognitive, metacognitive and resource management) and the independent variables are technology learning environments. This study shall be beneficial for the university in facilitating effectively the online learning activities through the application of LMS.

Key words: Student Engagement • Self Regulated Learning • Learning Management System (LMS)

INTRODUCTION

Online learning has been adopted in most universities in the world [1]. The survey of more than 2500 colleges and universities reported that 3.94 million students (or approximately 22% of the overall higher education) were enrolled in at least one online course in 2007. The number of students learning online has more than doubled in the five years and online enrolments will continue for the future [2]. The blended instruction as learning management system (LMS) continues to increase [3]. Web 2.0 technologies as a synchronous and asynchronous interaction in LMS push learning into collaborative, online environments based on individuals’ motivation and the learning style also provides adult students the opportunity to comfortably learn.

However, the number of students and lecturers engaged in LMS still not up to the expectation [4, 5, 6, 1]. The low rate of student’s engagement is very important issues and factors to be studied (7, 8, 9). A study on needs to be undertaken that may help us better understand theories and strategies of student’s engagement such as when students are at risk in disengagement, which factors may protect motivation and self-regulation engagement. Understanding the relationship of self-regulated learning among different courses context can assist academic faculty in preparing students for successful experimental learning environment. This paper focuses on the variability of motivations and learning strategies which are important components of SRL in enhancing student attitude of web based learning.

Student Self-Regulated Learning: Student’s engagement in LMS environment is important in learning outcomes because it predicts student academic achievement [10]. Learners in web-based learning environments need to utilize self-regulation skills to achieve multiple learning
outcomes. Self-regulated learning (SRL) includes knowledge of task and personal capability [10]. SRL is the degree of individual participation in learning process and utilizes metacognitive, motivation and behavioral strategies suited to their learning environment which is an important criterion for learner’s success [11, 12]. Students who use LMS communicate effectively, self-regulation has empowered their metacognitive knowledge to choose appropriate learning strategies for a given task [5, 6] because metacognitive skills are drawn from multiple domains [13] and web based environment provide access to multiple resources.

Successful implementation of e-learning depends on learners’ interaction and engagement which would result in increased learning outcomes [14]. Thus, learners in web-based instruction have high challenges based on two criteria: firstly, how to access multiple resources, evaluate complex data, think creatively and to communicate effectively and secondly how to design web-based instruction as a content issue that can facilitate their learning [15, 16].

Virtual learning needs students’ skill in controlling learning through multiple information and technology. Students with limited SRL skills would not learn much from LMS [17, 18]. Therefore, individuals’ self-regulation capability integrated with supportive tools is important in LMS approach. The instructor should utilize instructional support mechanism to motivate students and assist regulated learning.

Factor Affecting Self-Regulated Learning: Because of the nature of e-learning, processes such as monitoring classroom activity, providing timely feedback and fostering students’ sense of competence, autonomy and relatedness are different from face-to-face education [19]. E-learning offers several tools (like text, picture, chat and video conference) it can be stored data and connected by hyperlinks. LMS instructional design makes communication and student peer interaction comfortable based on their needs and interest thereby fostering a sense of community, control and higher levels of engagement. This environments offer a variety of opportunities for SRL, because learners are free to choose which piece of information they want to observe or ignore [20, 21]. If so, one would expect that the richer the tools used, the higher the levels of learner engagement. However, the actual use of tools and contributions to interactions in the learning situation may relate to students’ motivation [22]. Motivations are seen as key determinants of information system usage. Motivation may have direct influences on the attitude as behavioural variable [23]. Research on IT usage revealed that the usage depended on value of system provided to users. The overall perception of interacting with the system based on the system’s usefulness, enjoyment and fun will influence both types of motivation have been linked directly to multiple forms of behaviour [24].

Students’ perception of ease of use and usefulness represents the extrinsic motivation to accept technology, while enjoyment of the technology represents the intrinsic motivation. When an individual does not well evaluate an activity, won’t be feel competent to perform it and won’t believe that it will yield a desired outcome and unlikely to engage in the target behaviour [25, 26].

Therefore, [22] investigated the relationship between available tools used, student motivation, participation and performance on a final exam in an online course in economics (N = 110). The researcher combined technology acceptance model (TAM) and self-determination theory (SDT) to the effect of learning environment on student’s behaviour. TAM model declares that students’ intention to use ICT by two factors: the perceived usefulness and the perceived ease of use. SDT explain differences in amount and quality of students’ e-learning activities [27, 26]. According to [28], SDT is framed in terms of social and environmental factors that facilitate intrinsic motivation. Intrinsically motivated learning can drive to learn based on the satisfaction and pleasure of the activity of learning [29]. Students with SDL are more responsible to define their own learning task, effective planning and time management [30]. Also, they evaluate critically of both selected literature resources and students’ own study skills. SRL is a part of SDL, but SDL is a much broader concept since it implies more student initiative and more control over students’ learning processes [31]. The researcher considered motivation as a key mediator for behavioural intention to use ICT. Therefore, combining SDT and TAM in research on e-learning, found that an increase in perceived autonomy support, perceived competence and relatedness positively influenced users’ motivation to use ICT. In sum, combining SDT and TAM in CSCL research has been shown to offer a better framework for understanding the use of technology in e-learning compared to each of the theories separately [22, 26].

Most online settings are characterised by minimal guidance, which require learners to be more autonomous and self-directed, Computer-Supported Collaborative Learning (CSCL) may provide conditions more conducive
to learners comfortable with greater autonomy. Study by [29] interested to find why some learners contribute more to discourse than others in CSCL learning environment. They were used quasi-experimental research and focused on how teachers can facilitate the learning process by providing appropriate scaffolding and afterwards focused on the role of student’s motivation in online learning. The research highlighted that autonomy support and guidance provided within the learning environment that may influence student engagement.

The researcher found that ICT can provide appropriate scaffolding to reduce the cognitive load for students and facilitate the process management of the task. PBL and CSCL, can make disciplinary thinking and strategies explicit, help to structure complex tasks, ensure that learners are actively engaged with the learning environment, learning process leads to more engagement, discourse and interaction. the complex nature of CSCL provided autonomy support and structure to learners [29].

Study by [32], investigated on the role of intrinsic and extrinsic motivations as determinants of virtual word VW usage and assess the functioning of four system-specific elements (economic value, ease of use, escapism, visual attractiveness). The influence of motivation on system usage heavily depends on the nature of the system. Understanding of users’ motivation can guide designer to focus on drive users to engage in VWs [32].

Based on reviews of literature in what situation encourages student engagement. Study by [24] found pedagogical agents facilitate learner motivation and learning. The pedagogical agents in four factors attempt to design more instructional support and motivational elements into multimedia learning such as (i) the learning environment in which the pedagogical agent is implemented and its topic; (i) the characteristics of the learner who works with the learning environment; (ii) the functions that the pedagogical agent executes (the instructional support that it provides such as feedback, guidance or direct instruction); and (iii) the pedagogical agents design (the choice of the character with features like human vs. non-human characters, animation, voice vs. text, gender, clothing, etc.). Relevant variables that may be related to pedagogical agents are: (a) emotional factors, such as boredom, pride, pleasure, or shame (b) motivational factors, such as interest, achievement motivation, self-efficacy (c) cognitive factors such as prior knowledge; and (d) metacognitive factors, such as self-regulation [30, 24].

The social context of a learning environment can influence the motivation students, therefore influences SRL [33] for instance, in problem based learning PBL environment, SRL is an important characteristic of PBL. In this case, [31] aimed to investigate the differential effects of a (PBL) environment versus a more conventional lecture-based (LB) environment on students’ motivation and SRL. The result of experimental research design determined that: (i) The PBL group scored significantly higher on intrinsic goal orientation and task value compared to the control group. And their behaviour was more self-determined heist level of autonomous with intrinsic motivation (ii) PBL has several aspects that can enhance student motivation: autonomy-supportive teachers, meaningful and challenging tasks, positive feedback, collaboration and scaffolding (iii) Teachers can achieve autonomy support by taking the perspective of their students, offering opportunities of choice, being receptive to students’ questions and ideas and making learning relevant. (iv) The design of meaningful tasks and study activities can increase intrinsic motivation. The researcher reported that PBL students showed a larger improvement in SRL skills than non-PBL students at the end of the academic year [31].

[34] in an experimental design involving 69 students looked at how SRL have been able to assist learners efficiently in online learning. In the study 76.18% learners reported the SRL enhance competency in e-learning system (PELS) and performance. Also, e-learning system has improved their SRL skills. [35] pointed out that students’ dissatisfaction of e-learning is due to lack of students’ own enthusiasm to learn. The study found that students require a higher level of self-direction, learning space and advanced level of discussion. [8] studies a sample of 880 middle school students in the sixth and seventh grades to examine differences in students' motivation and self-regulated approach across the grade levels of a math course. The study observed that students in the advanced grade level displayed greater SRL.

Internet and multimedia does not automatically result in better learning but instead, pedagogy and curriculum design are more influential variables [36, 37]. Study by [15] in Quasi-Experimental research design compared the effectiveness of two different e-learning environments (PDA-WATA group and the N-WBT group) in facilitating e-learner SRL behaviours among 123 participants. The study found that student would use SRL strategies when the learning environment is well designed.
Studies on the influence of learning environment on SRL revealed that SRL not only enhance e-portfolio of students but instead it is their e-portfolio that supports students’ SRL abilities.

In addition, study by [38] examined whether motivation and differences in SRL and on-line courses between undergraduates and graduate students affect learning outcomes. The study found that the learning activities designed by the faculty as well as the type and level of teachers’ instruction have influence on students’ SRL and their motivation. Ability of learners to take advantage of learning opportunities and use learning tools adequately or to select tools skilfully determines learners’ success [39, 40]. While study by [41] carried out a study on 84 students from both genders at mean age 38.7 years by random sampling found that students’ peer activities could develop students’ SRL and learning outcomes. The results showed that electronic learning environments are effective in fostering students’ SRL. Electronic communication tools should be made available or easily accessible within the learning environment.

CONCLUSION

To conclude, self-regulated learning explains why one student performs better on an academic task than the others. According to social cognitive theories of learning both students’ cognitive and motivation relate to a students’ judgement or perceived value of a task. The learning behaviours for academic tasks may differ across different classes. The effect of environment on SRL is a phenomenological theory that is based on the learners’ perceptions of their own environment that shape their knowledge and skills in using SRL strategies. A teacher as an assistant has an important role in create more opportunities in e-learning system for student to encourage them to be more engaged and to use SRL strategies. When a learning environment integrates ICT tools has able to motivate student and enjoyed learning therefore motivation influence them to use grate learning strategies (cognitive, metacognitive and time and space management) in their resource. A critical gap is that most studies are based on the assumption that intention to use ICT tools. However, more research is needed on actual usage behaviour and how that is related to motivation [22].

REFERENCES


