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Preface

Welcome to E-Learn 2010 in Orlando, Florida; World Conference on E-Learning in Corporate, Government, Healthcare & Higher Education. If this is your first trip to Orlando, we hope you learn intensively during the day and get a chance to explore the city and surrounding area at night as well as on the weekend. There is much to see and experience. We also hope you join in engaging conversations about e-learning in all sectors of the field.

E-learning has mushroomed during the past decade. As evidence, there are dozens of papers at this conference which document what is happening across the education and training areas. Each presentation should help you report to your colleagues on the state of e-learning around the world. They will also hint at next steps in the evolution of this field. If you are presenting this week, we thank you for your participation. As you will see, the Association for the Advancement of Computing in Education (AACE) continues to reveal its dedication to a substantive and worldwide conversation, analysis, and discussion about e-Learning.

This conference provides a unique multi-disciplinary forum for Government, Healthcare, Education, and Business professionals to discuss and exchange the latest research, development, applications, issues, and strategies, to explore new technologies, and to identify solutions for today's challenges related to e-learning and distance learning.

E-Learn continues to grow and expand in the field of distance education and e-Learning as the Internet and the Web are altering the way that information and knowledge is constructed, managed and shared. All of which are having a deep impact on the way learning takes place and is delivered. This poses a number of challenges and tasks that enrich, widen, and deepen our discussion and analysis about teaching and learning with technologies.

We invite you to join us in this inspiring conversation. This discussion is about how e-Learning and distance education is changing our work and practices, but it is also about how this community of students, researchers, and practitioners can contribute through teaching, research, and experience to establish a more solid and robust basis and framework for distance learning. We are sure that E-Learn 2010 will be a splendid opportunity for this purpose by sharing the work and thoughts of hundreds of colleagues from all over the world through keynotes, invited talks, papers, panels, posters, and, of course, over a cup of tea, coffee, or an enjoyable lunch. Thus, E-Learn invites you to learn and contribute and also to establish an enriching conversation and discussion.

E-Learn 2010 will be a stimulating event. This year 693 papers were submitted and 414 were accepted. They are included in the conference proceedings available on the EdITLib Digital Library (<http://EdITLib.org>) and also in the printed book of proceedings (<http://aace.org/bookshelf.htm>). From the accepted papers representing authors from 48 countries, several papers were nominated as outstanding papers for this conference. These submissions received an additional round of reviews by the Steering Committee and four of these papers were selected as the Outstanding Papers. Congratulations to all of them!

We look forward to meeting you during the conference. If you have any questions about the schedule or events, just ask us or one of the AACE staff. There are always people on duty at the reception area to answer your questions. That is what makes AACE conferences so great—the people! We hope that you will make many new friends during the week and that some of these new friends become research team members, grant collaborators, or project partners. Of course, we expect to hear about the results of those new collaborations at the E-Learn Conference 2011 in Honolulu, Hawaii, October 17 – 21. But for now, spend your time enjoying E-Learn 2010 in this stimulating city.

Finally, as Co-Chairs, we would like to thank all the AACE staff and volunteers on the E-Learn Program Committee who have worked intensively preparing and delivering this excellent conference experience. Thanks again for contributing to and participating in the 2010 E-Learn Conference.

We look forward to seeing you again next year at E-Learn 2011 in Honolulu, Hawaii; Oct. 17-21. For more information, check out the AACE Website during the conference as well as this upcoming year: <http://www.aace.org/conf/elearn/>.

Good luck and have a great learning experience!

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Self-Regulated Learning Strategies in Online Learning Environments in Thailand

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Abstract: This study identified the five effective self-regulated learning strategies, investigated the correlation of demographic information and self-regulated learning strategies, and tried to measure a significant predictor of learners' experiences on their act of self-regulated learning strategies. Eighty-eight online learners from Chulalongkorn University, Thailand were participated in the SRL online survey, which was adapted from the MSLQ. Correlation analysis illustrated the correlation between motivation and SRL-strategy was significant ($p < .01$). The Intrinsic Goal and Self-Efficacy were correlated with Cognitive Strategy and Study Management, but The Test Anxiety Awareness was not correlated with any other SRL components. Multiple regression analysis revealed the effect of Internet experiences and Hybrid course experiences were positively significant; indicating that the greater experience of Internet and Hybrid course, the higher level the Study Management. In addition, the same results indicated that learners who have more Internet using tend to be higher lever in Self-Efficacy and Cognitive Strategy.

Introduction

The use of technology is embedded in most learning activities today (Gravill & Copeau, 2008). According to the US Department of Education as of the 2006/2007 academic year 97% of all public two year degree granting institutions and 88% of public four year degree granting institutions offered college level distance classes (National Center for Educational Statistics, U.S. Department of Education, 2008). In a related finding Picciano and Seaman (2007) estimated that in the academic year 2007/2008 approximately one million students, K-12, took an online class (Picciano & Seaman, 2007). Thus, it is important for students to learn new skills as technology changes or is introduced (Perry, 2006). Learners are increasingly expected to assess and manage their own learning needs. Self-management is a disciplinary skill that offers benefits and so needs to be better understood to learners (Wageman, 2001). Web-based learning is self-managed when an instructor provides the software programs and resources to learn new skills, while learner control the process to achieve his or her objective to acquire new skills (Gravill & Copeau, 2008). By this way, the process will be implemented by the learner. According to Moore and Kearsley (1996), Web-based Instructional Systems are instructional systems make extensive use of network technologies, especially the Internet and the World Wide Web in advancing interactivity between learners and instructors in order to incorporate a variety of organizational, administrative, instructional, and technological components, in offering flexibility concerning the way of learning, and in providing easy, one-stop maintenance and reusability of resources (Moore & Kearsley, 1996).

Online learning environment here means educational courses delivered through the Internet or using Web-based instructional systems either in real-time (synchronously) or asynchronously. Web-based instructional system or online learning environment is easy and inexpensive compared to traditional learning methods (Reid, 2005). Learners choose the best approach for learning the material and thus gain the skills they need, and act like their habits. These processes called self-regulated learning strategies (Dweck, 2002; Perry, 2006; Boekaerts & Corno, 2005). To manage these self-regulated learning experiences effectively, individuals make self-directed choices of the actions they will undertake or the strategies they will invoke to meet their goals. Self-regulated learning is a learning behavior that is guided by meta-cognition (thinking about one's thinking), strategic action (planning, monitoring, and evaluating personal progress against a standard), and motivation to learn (Boekaerts & Corno, 2005). Self-regulated learning will become learning habits when learners often use as their learning strategies. In particular, self-regulated learners are cognizant of their academic strengths and weaknesses, and they have a repertoire of strategies they appropriately apply to tackle the day-to-day challenges of academic tasks. These learners hold incremental beliefs about intelligence and attribute their successes or failures to factors, such as effort

expended on a task, effective use of strategies, within their control (Dweck, 2002). Individuals who are self-regulated learners believe that opportunities to take on challenging tasks, practice their learning, develop a deep understanding of subject matter, and exert effort will give rise to academic success (Perry, Phillips, & Hutchinson, 2006). Given the background information toward self-regulated learning of online environments as Web-based learning, researcher needs to understand the learning strategies or learning habits that learners adopt in order to improve the effectiveness of such online learning environments.

The purpose of this study was to investigate the correlation between the learner's demographic data (such as classification, gender, age, and online learning experiences) and learner's self-regulation behaviors toward online learning environments. Then, interpret those self-regulation behaviors to be appropriated academic habits of successful learners in online learning environments. Three questions for this study were: 1) How are the learners' motivational components related to the learners' self-regulation strategies? 2) Does learners' demographic information affect self-regulated learning strategies? And 3) Does prior experience in online learning environment affect self-regulated learning strategies? This study focused on the challenges faced by learners when learning in online learning environments or Web-based learning. The study provided a general perspective on the nature of self-regulated learning in educational contexts. The results of this study will be used in the future studies in the field of educational research by providing information regarding the self-regulation of students and reflection on their own self-regulation behaviors may improve performance of the participants. Also, the result of this study will be used in the orientation process for new students in order to improve their learning skills when they study in online learning environments.

Review Literatures

Zimmerman and Pons (1988) defined Self Regulated Learning (SRL) as actions directed at acquiring information or skill that involves agency, purpose (goals), and instrumentality self-perceptions by a learner (Zimmerman & Martinez-Pons, 1988). They also pointed that SRL seeks to explain student differences in motivation and achievement based on a common set of processes. In particular, self-regulated learners are cognizant of their academic strengths and weaknesses, and they have a repertoire of strategies they appropriately apply to tackle the challenges of academic tasks. These learners hold incremental beliefs about intelligence and attribute their successes or failures to factors, such as effort expended on a task, and effective use of SRL strategies within their control (Dweck, 2002; Zimmerman, 1989; Artino, 2007). Individuals who are self-regulated learners believe that opportunities to take on challenging tasks, practice their learning, develop a deep understanding of subject matter, and exert effort will give rise to academic success (Perry, Phillips, & Hutchinson, 2006).

According to Barry Zimmerman (1989), self-regulated learning involves the regulation of three general aspects of academic learning. First, self-regulation of behavior involves the active control of the various resources students have available to them, such as their time, their study environment (e.g., the place in which they study), and their use of others such as peers and faculty members to help them (Garcia & Pintrich, 1994; Pintrich, Smith, Garcia, & McKeachie, 1993). Second, self-regulation of motivation and affect involves controlling and changing motivational beliefs such as self-efficacy and goal orientation, so that students can adapt to the demands of a course. In addition, students can learn how to control their emotions and affect (such as anxiety) in ways that improve their learning. Third and finally, self-regulation of cognition involves the control of various cognitive strategies for learning, such as the use of deep processing strategies that result in better learning and performance than students showed previously (Garcia & Pintrich, 1994; Pintrich, Smith, Garcia, & McKeachie, 1993). Many researchers have agreed with the importance of self-regulated learning for students at all academic levels, and self-regulation can be taught, learned and controlled. In fact, Zimmerman (1989, 1990), an expert in this area, has found evidence of many different types of self-regulation that are explained next. In Zimmerman's studies, successful students report that the use of self-regulated learning strategies accounted for most of their success in school.

Research found that self-regulation is an important aspect of learning and achievement in academic contexts (Puzziferro, 2008; Whipp & Chiarelli 2004; Artino, 2008). Students who are self-regulating are much more likely to be successful in school, to learn more, and to achieve at higher levels. Self-regulated learning will result in student achievement and scores as presented in many standardized tests (Puzziferro, 2008). Although many studies have been written about self-regulated learning (SRL) in traditional classroom, there have been few that researched how to improve self-regulated learning skills in online environments. There are, however, studies emerging that begin to examine the impact of SRL in distance and distributed learning environments; specifically, whether SRL strategies should be implemented in a similar fashion to those that are implemented within traditional classroom environments, and whether there is a need to develop and recommend additional SRL strategies (Whipp & Chiarelli,

2004; Kitsantas & Dabbagh, 2004). These studies begin to provide general evidence SRL can be facilitated in online learning environments. They also begin to provide guidance on general web-based pedagogical tools that can facilitate such learning outcomes.

After pursuing the literature on SRL two main theories were discovered; Bandura's Triadic Reciprocal Determinism and Winne and Hadwin's Theory (Bandura, 1997; Hadwin & Winne, 1996).

Bandura's triadic reciprocal determinism theory. Bandura's theory revolves around the measured success of student self-efficacy expectations (Bandura, 1997). Zimmerman and Pons (1988) studied students in the 5th, 8th, and 11th grades to examine their level of self-regulation. The results of their study indicated that the use of the triadic model of self-regulation might have merit for training students to become effective learners. Post secondary students are the specific group that is the focus of this study. The goal is to use this study to provide colleges with data to help their students with support services that increases the number of students completing their degree or certificates (Zimmerman & Martinez-Pons, 1988).

Winne and Hadwin's theory. Winne and Hadwin's theory focuses on student success as measured by knowledge and use of specific strategies (Greene & Azevedo, 2007). Puzziferro (2008) looked at online technologies self-efficacy and self-regulated learning as predictors of both final grade and satisfaction in college-level online courses. Regulatory factors that were found to predict student performance online were the student's ability to monitor, regulate, and manage resources to facilitate their own learning. Time and study environment and effort regulation were also related to grade performance. Study could help provide direction for orientation programs, support services and advisement models for online learners (Puzziferro, 2008).

The theoretical framework for this study was an adaptation of a general expectancy-value model of motivation, which compose of three motivational components; a) Intrinsic value or a value component, which includes students' goals and beliefs about the importance and interest of the task; b) Self-efficacy or an expectancy component, which includes students' beliefs about their ability to perform a task; and c) Test Anxiety Awareness or an affective component, which includes students' emotional reactions to the task. (Pintrich, 1988, 1989). The expectancy component of student motivation will be positively related to the three self-regulated learning components, which are a) cognitive strategy use, b) metacognitive strategy use, and c) management of effort (Pintrich, 1990).

The MSLQ (Motivated Strategies for Learning Questionnaire) was developed at the National Center for Research to Improve Postsecondary Teaching and Learning at the University of Michigan. The instrument has been under development since 1986 when the Center was founded. It was designed to assess college students' motivational orientations and their use of different learning strategies in college courses (Pintrich, 1990). The original MSLQ contains 81 items in two sections, a motivation section and a learning strategies section. According to Lynch and Dembo (2004), the motivation section contains 31 items in six subscales: intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, self-efficacy for learning and performances, and Test Anxiety Awareness. The learning strategy section contains 50 items in nine subscales: rehearsal, elaboration, organization, critical thinking, meta-cognitive self-regulation, time and study environment management, effort regulation, peer learning, and help seeking (Lynch & Dembo, 2004). The MSLQ instrument has been used widely in investigating students' motivation and learning strategies in many countries, and has been used in various disciplines; educational psychology, biology, social science, accounting, dietetics, and teacher education etc (Chen, 2002).

Method

Participants

In this study, the research participants (n = 88) were drawn from a simple random sampling from current Thai undergraduate and graduate students over the age of 18, who are enrolled in online courses and hybrid courses at Chulalongkorn University in Thailand (see Table 1). Participants who enrolled in online courses and hybrid courses were asked to complete the survey online. Participants were asked about their demographic information, their experience in online learning, and their self-regulation behaviors. An online web survey system, "Kwik Surveys," was used to gather data through student's self-regulation behaviors toward online learning environments. The survey lasted 4 weeks and received 88 responses, and they were all completed (n = 88). The current level of education of sample was 35% Doctoral, 32% Master, 26% Other (Certificate), and 7% Undergraduate. There were 48 males, 17 males enrolled as full time students, and 31 males as part time students. While 40 females, 17 participants as full time students, and 23 participants as part time students.

The demographic information having been considered in correlation and comparison process in this study consists of current level of education, highest level of education, academic status, GPA, gender, age range, and marital status. Most of participants about 73% graduated in Master degree, and 19% graduated in Bachelor degree, few of participants graduated in Ph.D. and High school at 4.5% and 2.3% respectively. Sixty-one percent of participants were part time students and thirty-nine percent were full time students. Seven level of GPA of participants were found; 40% were in highest grade level, about 35% were in high grade level, and about 6% were in low grade level. Almost 60% was single, 38% was merited, and 2% was divorced. The age range of sample, 40% was 31-40 years old, and only 2% was 18-20 years old.

Instrumentation

The instrument has two part; part 1 consisted of demographic questions and learners' experiences, part 2 was a 44 questions of the MSLQ. The independent variables were the students' demographic information, which consist of current level of education, highest level of graduated, academic status, GPA, gender, age range, and marital status. Other independent variables gathered from the survey part 1 was the information about the prior experiences of using internet and taking online learning courses, which were Internet experience, Internet using daily, online course experience, and hybrid course experience. Majority of the participants (77%) were 7 years or more of using Internet, and just only 1% of them were few experiences less than 6 months using Internet. There were 33% of participants were 8 hours or more of Internet daily used. About 30% of them were using Internet 3-4 hours/day. At least 1% was at least 1 hours/day using the Internet. The number of online courses and hybrid courses that participants have been taken before this class showed that almost 40% of learners have never taken the online course, and half of participants have never taken the hybrid course before, 20% was experienced at least one online course, and another 20% was experienced 5 courses or more of online courses, and about 24% of participants have experienced at least 1 course before taken this class.

While the dependent variables were selected from the literature review based upon the Motivated Strategies for Learning Questionnaire (MSLQ) in the study of Pintrich and De Groot (1990). Five self-regulatory variables were down in this study were a) intrinsic goal, b) self-efficacy, c) test anxiety, d) cognitive strategy, and e) self-regulation (Pintrich & De Groot, 1990). However, the name of the last dependent variable from the original study, self-regulation, might confuse readers because the word self-regulation is cover meaning in all dependent variables of this study. Thus, to avoid of confusion meaning, researchers renamed the last dependent variable to be "self-study management", which was covered to all items of this factor in the MSLQ.

The instrument in this study was adapted from the MSLQ, developed by Pintrich and De Groot (1990). The original MSLQ of Pintrich and De Groot (1990) were used to measure students' motivational beliefs and self-regulated learning. There were 56 items on the questionnaire, but only 44 items were used in this study to assess learners' motivated and self-regulated learning strategies used during the course. The questionnaire was developed and translated into two languages, English and Thai, by using the online web survey system as known as "Kwiksurveys" to collect data from Thai undergraduate and graduate students in Thailand who enrolled in online courses or hybrid course at Chulalongkorn University, Bangkok, Thailand. The URL link of the Kwiksurveys was sent via email directly to each student by the instructors of those courses. The survey instrument consists of two parts. Part 1 of the survey collected basic demographic data; current level of education, highest level of graduated, academic status, GPA, gender, age range, and marital status, and also collected the prior experiences of using Internet and online learning environment; Internet experience, Internet using, online course experience, and hybrid course experience. Part 2, the MSLQ was adapted to gather the data about learners' motivated and self-regulated learning during the course. The Likert-scaled was used to conduct 44 questions of self-regulation behaviors with positive and negative statements. The participants responded to a self-report questionnaire (the MSLQ) that included 44 items on learner intrinsic goal, self-efficacy, Test Anxiety Awareness, cognitive strategy, and self-study management. Learners were instructed to respond to the items on a 7-point Likert scale (1 = not at all true of me, to 7 = very true of me) in terms of their behavior in the specific online learning course environment.

Data Analysis:

For the MSLQ questions, factor analysis was used to guide scale construction, resulting in exclusion of some of the items from the scales because of a lack of correlation or stable factor structure. Analysis of the motivational items revealed three distinct motivational factors: intrinsic goal, self-efficacy, and Test Anxiety Awareness. The Intrinsic Goal scale ($\alpha = 0.91$) was constructed by taking the mean score of the learner's response to 13 items concerning intrinsic interest in and perceived importance of course work as well as preference for challenge and mastery goals. The Self-Efficacy scale ($\alpha = 0.89$) consisted of 7 items regarding perceived competence and confidence in performance of class work. Nine items concerning worry about and cognitive interference on tests and

reading for class work were used in the Test Anxiety Awareness scale ($\alpha = 0.86$). Analysis of the self-regulated learning strategy items shows two SRL strategy factors; cognitive strategy and self-study management. The Cognitive Strategy scale ($\alpha = 0.87$) consisted of 9 items pertaining to the use of rehearsal strategies and elaboration strategies. The last scale, Self-Study Management scale ($\alpha = 0.77$) was constructed from 5 items related to the metacognitive and effort management such as planning, skimming, organizing, and comprehension monitoring were adapted. However, one item about testing preparation (“When I study for a test I try to remember as many facts as I can”) did not used in any factor because the factor analysis of the items did not support the construction of that item (see Table 6 for all reliability statistics).

Totally eighty-eight (88) valid survey subjects had been collected. After retrieving those data from the result of the online survey system, Kwiksveys, keying the code into computer spreadsheet, then SPSS is the statistic software to process the data. Descriptive Analysis is the first step of analysis that was trying to reproduce the fundamental data set on SPSS and to confirm the same picture was obtain out of this data set. With the descriptive statistics result, as seen in Table 3, all 44 SRL-questions, included the negative questions that were reflected before analyzing process, have been responded by 88 subjects ($N = 88$). The highest mean score of the total 44 questions is the question number SRL-15, “I think that what I am learning in this class is useful for me to know,” ($\bar{x} = 6.16$), and the minimum and maximum are between 1 and 7. That means all of respondents have the intrinsic value of learning in this class. On the other hand, the lowest mean score of these data is at the question number SRL-41, “When I read materials for this class, I say the words over and over to myself to help me remember,” ($\bar{x} = 3.41$), and the minimum and maximum are between 1 and 4. Also, the standard deviation score is quite high ($SD = 1.82$). Assume that respondents’ self-regulation strategies for this question are diversity, or because of the act of this strategies are not quite used in the culture of Thai students, so respondents might not response in high frequency .

Reliability analysis was the next statistic to find out the value of Cronbach’s alpha of the instrument. The alpha is a conservative measure which sets and upper limit on reliability (Nunnally, 1967). According to DeVellis (1991), a Cronbach’s alpha coefficient of over 0.7 implies respectable to high reliability. Cronbach’s alpha theoretically ranges from zero to one with the following guidelines (Dunn-Rankin, Knezek, Wallace, & Zhang, 2004).

Table 1: Cronbach’s alpha theoretically ranges (DeVellis, 1991, p. 85).

DeVellis Reliability Grudelines	
Below .60	Unacceptable
Between .60 and .65	Undesirable
Between .65 and .70	Minimally acceptable
Between .70 and .80	Respectable
Between .80 and .90	Very good
Much above .90	Consider shortening the scale

The internal consistency reliability of the instrument with 44 Likert-scaled items was determined be calculating Cronbach’s alpha for the study data ($\alpha = 0.911$). It was found to be high reliability score at 0.91, or very good reliability ($\alpha > 0.90$) of the Cronbach’s alpha theoretically ranges, for this survey instrument.

Factor Analysis: An exploratory factorial analysis was performed to measure scale construct validity in order to find the possible factorial structure of the SRL-items. The 88 subjects for 44 items were submitted to Principal Component Analysis and Varimax rotation with Kaiser Normalization. The results showed nine rotated components matrix at the first time or produced nine factors; however, some of those items in each factor were weak and were negative. Also, examination of the Scree Plot (Figure 1) illustrated that there were approximately 5 or 6 factors.

From the factor analysis results and the scree plot, researcher decided to run the factor analysis again by forcing the results into six factors, but the results from six factors showed one weakest factor that consist of one item. Thus, researcher decided to use only five strong factors, and removed out one factor with one item. The results and analysis can be viewed in Table 2. Reviewing the questions and checking with the scree plot and the results of the factor analysis, researcher design to use 5 factors, and named the new factors are (1) Intrinsic goal, (2) Self-Efficacy, (3) Test Anxiety Awareness, (4) Cognitive Strategy, and (5) Study Management, and then ran reliability test on each factor. The results can be seen in Table 3.

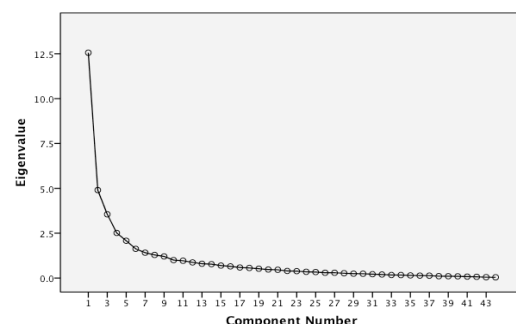


Figure 1: Scree Plot of factorial analysis illustrated five or six factors for 44 SRL-items

Table 2: Factorial analysis by forcing into six factors

	Component					
	1	2	3	4	5	6
SRL-15	.839			.153		.177
SRL-17	.818	.259	.108			
SRL-7	.747	.149		.244	-.160	.135
SRL-14	.717	.114	.114	.313		.225
SRL-5	.675	.317	.110			
SRL-21	.647		.159	.303	.178	.232
SRL-19	.617	.455	.111	.199	.119	
SRL-6	.546	.444	.151		.175	-.370
SRL-1	.546			.140		-.198
SRL-23	.534			.481	.208	.251
SRL-10	.531	.410	.116	.160	.225	-.104
SRL-29	.524		-.360		.332	
SRL-4	.487	.359		.239	.201	.360
SRL-9	.230	.852				.199
SRL-2		.794				
SRL-16		.791	-.243			
SRL-13	.117	.779	.129	.168	.130	.130
SRL-18	.347	.710	-.190	.100		-.170
SRL-11	.485	.575		.156	.141	-.104
SRL-8	.374	.555	.135	.132	.160	.358

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

	Component					
	1	2	3	4	5	6
SRL37_r	.209		.764		.197	-.106
SRL38_r	.270		.746			.195
SRL26_r	.101		.740	.139		-.232
SRL22_r	-.144		.715	.192	-.259	.188
SRL20_r			.707	.113	-.304	-.284
SRL27_r		.159	.627	-.149	.300	.190
SRL12_r		-.101	.613		-.185	-.136
SRL3_r			.577			-.448
SRL40_r	.109		.563	.170		.312
SRL-33	.212			.801	.155	
SRL-32				.728		
SRL-28	.290	.136		.669		-.103
SRL-44	.477		.166	.607	.159	
SRL-43	.251	.258		.591	.179	.359
SRL-24	.230	.399		.501		.402
SRL-36	.302	.337	.198	.480	.205	.226
SRL-25	.403	.222	.147	.469		
SRL-39	.349	.289	.199	.440		.194
SRL-34	.133	.113		.157	.836	.141
SRL-41	-.138		-.321	.124	.700	
SRL-31			-.108	.394	.574	
SRL-35	.365	.109		.420	.522	
SRL-42	.150	.219		.299	.487	-.567
SRL-30	.305		-.202	.176		.464

Reliability analysis revealed that all subscales had good internal consistency reliabilities. As shown in Table 5, It appears that the alpha values for the first 4 factors were quite strong, $\alpha = 0.91$, $\alpha = 0.89$, $\alpha = 0.86$ and $\alpha = 0.87$ respectively, while the alpha value of the fifth factor was considerably weaker than the others ($\alpha = 0.77$), and the number of questions has only 5 items. Although the alpha value of the last factor was high enough to be acceptable at the level of respectable (DeVellis, 1991), researcher felt that a review the questions and increasing the number of questions associated with this factor is desirable to increase its reliability in measuring the construct.

Table 3: Factor names and alpha values with all questions included.

Factor	Factor Name	SRL-Items number	Cronbach's Alpha
1	Intrinsic Goal (13)	15, 17, 7, 14, 5, 21, 19, 6, 1, 23, 10, 29, 4	.91
2	Self-Efficacy (7)	9, 2, 16, 13, 18, 11, 8	.89
3	Test Anxiety Awareness (9)	37r, 38r, 26r, 22r, 20r, 27r, 12r, 3r, 40r	.86
4	Cognitive Strategy (9)	33, 32, 28, 44, 43, 24, 36, 25, 39	.87
5	Study Management (5)	34, 41, 31, 35, 42	.77

Results

This study employed both descriptive and inferential statistics. The descriptive analysis included and overview of the demographics of the sample and means, standard deviations, and simple correlations of the variables investigated in the study, as well as reliability analysis of the subscales. The inferential analysis, a Multivariate Analysis of Variance (MANOVA) and a Multiple Regression Analysis were run on SPSS/PASW program. The level of significance used for the analyses was .01.

The first question of this study concerned the relations between the motivation factor and the self-regulation strategy. The convergent and discriminate validity were examined through the inter-factor correlations. The results were generally as expected. Table 6 displays the correlations among the three motivational components; Intrinsic Goal, Self-Efficacy, and Test Anxiety Awareness, and the two self-regulation strategies; Cognitive Strategy and Study Management. As can we seen that higher levels of Intrinsic Goal ($r = .67$) and Self-Efficacy ($r = .40$) were correlated with higher levels of Cognitive Strategy at the .01 significance level ($p < .01$). This significant correlation reflected the relationship between the learner motivation and the self-regulation strategy, which indicated that as

learner motivation increased self-regulation strategy increased marginally. While lower levels of Intrinsic Goal ($r = .32$) was correlated with lower levels of Study Management at the 0.01 significance level ($p < .01$), implying that Intrinsic Goal component has influenced with Study Management component at lower level; higher Intrinsic Goal tend to be greater Study Management.

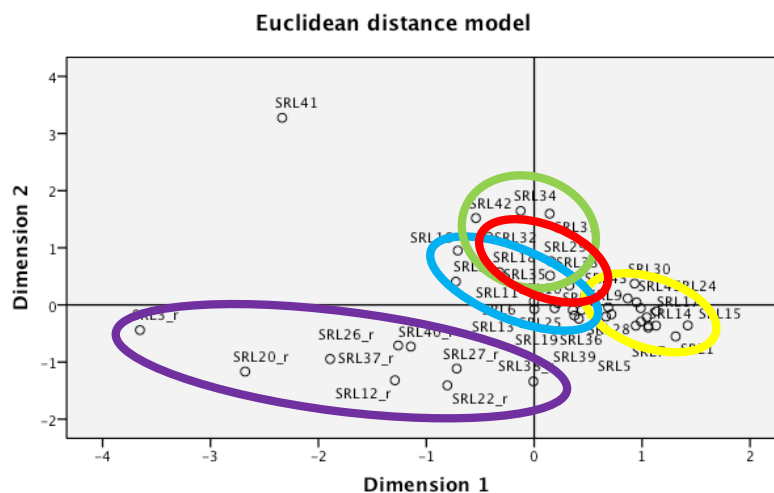
Table 4: The Inter-Factor Correlations

		Correlations				
		IntrinsicGoal	Self_Efficacy	Test_Anxiety	Cognitive Strategy	Study Management
IntrinsicGoal	Pearson Correlation	1	.554**	.150	.666**	.320**
	Sig. (2-tailed)		.000	.162	.000	.002
	N	88	88	88	88	88
Self_Efficacy	Pearson Correlation	.554**	1	.007	.403**	.208
	Sig. (2-tailed)	.000		.949	.000	.052
	N	88	88	88	88	88
Test_Anxiety	Pearson Correlation	.150	.007	1	.161	-.141
	Sig. (2-tailed)	.162	.949		.134	.189
	N	88	88	88	88	88
CognitiveStrategy	Pearson Correlation	.666**	.403**	.161	1	.468**
	Sig. (2-tailed)	.000	.000	.134		.000
	N	88	88	88	88	88
StudyManagement	Pearson Correlation	.320**	.208	-.141	.468**	1
	Sig. (2-tailed)	.002	.052	.189	.000	
	N	88	88	88	88	88

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

On the other hand, Test Anxiety Awareness was not associated with both Cognitive Strategy and Study Management, and was not correlated with any factor; implying that every component of either learner motivation or self-regulation strategy has no influenced to Test Anxiety Awareness. In addition, results revealed that there were correlated significance at 0.01 level between factors within the motivational components; higher levels of Intrinsic Goal ($r = .55$) was correlated with higher level of Self-Efficacy at the .01 significance level ($p < .01$). Also, there were correlated significance within the components of self-regulation strategy between Cognitive Strategy component and Study Management component at the .01 significance level ($r = .47$, $p < .01$); indicated that as level of Cognitive Strategy increased the level of Study Management increased marginally. Similarly, the results from the multidimensional method showed the Intrinsic Goal items, Self-Efficacy items, Cognitive Strategy items, and Study Management items were closer to the each other in the two dimension output graphic, but the Test Anxiety Awareness items were separated itself far from others (see Figure 2).

Figure 2: Two dimensional output graphic of all SRL-items



The second question concerned the effect of demographic information among SRL strategies. The seven demographic variables; current education level, highest level of graduated, academic status, GPA range, gender, age

range, and marital status, were entered into the simple correlation process. Then, a Multivariate Analysis of Variance (MANOVA) was used to infer the differences of means in each demographic variable to see whether or not the demographic information affected self-regulated learning strategies. As indicated in Table 8, when all seven demographic variables were included in the simple correlations, only Study Management was significantly correlated at the 0.01 level ($p < .01$) with Education level, Highest graduation, and Age range at positive levels; $r = .36$, $r = .34$, and $r = .23$ respectively. Assuming that higher level of education, graduation, and age range tend to be higher level of Study Management. Academic status (Full time, Part time), however, was negatively significant ($r = -.363$) with Self-Efficacy; indicated that Part time learners tend to be lower Self-Efficacy than Full time learners. MANOVA results revealed the test of between-subjects effect that some of the SRL strategies were affected from some of the demographic sources; Study Management was significantly affected from Education level ($F = 5.00$, $p < .003$, $MS = 6.49$) and Highest graduation ($F = 4.07$, $p < .005$, $MS = 5.26$); Self-Efficacy was significantly affected from Academic status (Full time had higher mean scores than Part time) at the level $F = 13.02$, $p < .001$, $MS = 12.29$.

The last question of this study concerned the effect of prior experience predicted the SRL strategies. To examine the independent relations between Internet experience and online course experience on learners' SRL strategies, five separate multiple regression analyses were run with the two Internet experience (Internet experience and Internet using daily) and two online course experience (Online course experience and Hybrid course experience) variables as predictors of learners' SRL strategies on Intrinsic Goal, Self-Efficacy, Test Anxiety Awareness, Cognitive Strategy, and Study Management. When the variables were entered into the multiple regression analysis, results revealed three predictors of learners' experiences related to three learners' SRL strategies. Multiple regression of Intrinsic Goal showed an adjusted R^2 of .012, revealed that Internet using daily was positively related to Intrinsic Goal ($B = .07$, $p < .045$, $Beta = .19$); Internet using daily accounted for about 1.2 percent of the variance in Intrinsic Goal component. The results of Self-Efficacy showed an adjusted R^2 of .201, revealed that Internet using daily made significant contributions to predicting the variance in Self-Efficacy ($B = .23$, $p < .000$, $Beta = .48$); about 20 percent of the variance in Self-Efficacy. The last results on Study Management component showed an adjusted R^2 of .034, revealed that Internet experience was positively related to Study Management ($B = .32$, $p < .051$, $Beta = .20$), also, revealed that the second predictor, Hybrid course experience, was significantly related to Study Management at an adjusted R^2 of .229 ($B = .14$, $p < .049$, $Beta = .19$). Together, therefore, Internet experience and Hybrid course experience accounted for about 26 percent of the variance in Study Management component. The online course experience did not contribute significantly to the multiple regression equation.

Discussion and Conclusion

The findings showed the overall correlation between the learners' motivational components and the learners' self-regulation strategies was correlated significantly at .01 level ($r = .37$, $p < .01$). When looked closer at sub factors, found that Intrinsic goal and Self-efficacy were correlated with Cognitive strategy. And Intrinsic goal also correlated with Study management. Also, the correlations within each component were statistically significant correlated between Intrinsic goal VS Self-efficacy, and between Cognitive strategy VS Study management. These correlations were supported by the findings of Pintrich and De Groot (1990), the motivational components were linked in important ways to student cognitive engagement, and the Intrinsic value was very strongly related to use of cognitive strategies and self-regulation (Pintrich & De Groot, 1990). Wang and Newlin (2002, cited in Lynch & Dembo, 2004) pointed that self-efficacy was positively related to student cognitive engagement. Assuming that if online learners applied these two motivation components in their learning habits, they will be accommodated with these two self-regulation strategy components. However, the findings found that one of the learners' motivational components, Test Anxiety Awareness, was not significantly related with any factor in any component. Similarly, Pintrich and De Groot (1990) stated that Test Anxiety Awareness was not significantly related in a linear or nonlinear fashion to use of cognitive strategies or self-regulation. In contrast, Hill and Wigfield (1984, cited in Pintrich & De Groot, 1990) found that high-anxious students reported less self-regulation and persistence. Also the theory of cognitive models of Test Anxiety Awareness (Benjamin, McKeachie, & Lin, 1987) posted that for some test-anxious students who actually have adequate cognitive skills, test anxiety during exams engenders worry about their capabilities that interferes with effective performance (Pintrich & De Groot, 1990). From this point, Test Anxiety Awareness supposed to be related with some components of self-regulation strategies. One reason that could explain the distinguish in this study that some questionnaire items in Test Anxiety Awareness factor were not directly related to Test Anxiety Awareness (such as item 26 "it is hard for me to decide what the main ideas are in what I read", and item 27 "when work is hard I either give up or study only the easy parts"), but the Factorial analysis allows researcher to group the items that were somewhat related to other items. Another explanation would

be about the negative questions were asked to Thai learners; it might be the translation error or cultural issue led to the error of data in an analyzing process which was one concerned for further research.

Next finding was about the influence between learners' demographic information and SRL strategies. Due to the fact that most research studies tried to investigate the effect of SRL strategies to student achievement or student performance or the studies about comparison SRL strategies between the difference in class designed rather than finding the effect of other factors to SRL strategies, but this study intended to report the individual difference of online learners from their demographic information in order to improve Self-regulatory skills for the online learning environments. This study, however, found only one SRL component, Study management, that was significant affected by three of seven demographic information, which were Education level, Highest graduation, and Age range. Some of Self-regulation studies pointed out about the involvement of demographic information; Pintrich and others (1993) pointed out about gender that boys were different from girls in self-efficacy; boys rated themselves more efficacious than did girls, and boys felt less test anxious than did girls (Pintrich et al., 1993). Lynch and Dembo (2004) suggested in their research study that individual difference variables (such as age and gender) should be investigated in future research into the relationship between self-regulation and online learning generally (Lynch & Dembo, 2004). In this study, MANOVA was used to analyze the differences of mean square of learners' demographic data. Research found that learners who had higher level of education, graduation, and age range tend to be higher level of Study management. Applying that learners who were lower level of education, graduation, and young age may need to be improve more habits about Study management. Unfortunately, this study did not find any significant related of other demographic variables such as Academic status, GPA, Gender, and Marital status. Even though, an Academic status was found a negative significant effect in Self-efficacy, it did not mean that self-efficacy was more affected by part time than full time on Self-efficacy component. An appropriate research design and data analysis might help further research to reveal the individual differences among learners' demographic information.

Last finding concerned about the effect of learners' experience on Internet and online course. Multiple regression analysis, which is a general statistical procedure used to analyze the relationship between a single dependent variable and several independent variables, was used to examine the predictor variables that would influence the SRL strategies. Three from four predictor variables were found statically significant related to SRL strategies. "Internet using daily" was positively related to both Intrinsic goal and Self-efficacy. Predicted that learners who used more Internet tend to be high level of Intrinsic goal and having more Self-efficacy. In Thailand, Internet access has not same facilitated as in USA; only learners who live in urban area will have full facilities. Thus, for learners who lack of Internet access, it might need to find the other ways to improve their SRL strategies. "Study management" was statistically significant affected from two factors of learners' experience about using Internet and having study in hybrid course. Fifty percent of Thai learners who participated in this study reported that they have studied in hybrid course (s). It was not surprise that Study management was affected from these two predictor variables because the more experience they have, the high level of Study management they were. Surprisingly that online course experience, which was similar to hybrid course, was not related to any component of SRL strategies. As prior expect, learners who have more Internet experience and online learning experience would have been higher level in all components of SRL strategies. Test Anxiety Awareness and Cognitive strategy also were not related to any learners' experience. Chen (2002) found in his study that prior computer experience did not help students achieve higher test scores.

In conclusion, this study found the answers for three research questions that there were significant correlations between five components of SRL strategies, but the Test Anxiety Awareness was not found any significant related to others. Then, this study found that there were some correlated between learners' demographic information and SRL strategies by Study management was related to education level, highest graduation, and age range, and Self-efficacy was invert relationship with Academic status. Last finding that three SRL strategies were significant predicted for Internet experience, Internet using daily, and experience about hybrid course. The findings, however, were some as expected, but some were not. Several limitations were found to this finding. One would be that the sample size needs to be increased and/or the sample needs to be drawn from a wider geographic area. Another would be that the MSLQ instrument, which adapted from the research studies by Pintrich and De Groot (1990) and translate into Thai, might not be an appropriate instrument to assess effective learning strategies in Thai culture that differ from American culture, also it might not cover all learners' habits because there was cut down from original 81 items to be 44 item questions. Learners in online learning environments need to have more than five habits or five SRL strategies to be successful online learner.

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