

Self-Regulated Learning Strategies in a Passive Learning Environment

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ABSTRACT: *One important challenge a teacher faces is to ensure that students learn. Learning is a concerted effort of both the teacher and the student himself. Aside from teachers providing opportunities conducive for learning, students have different ways to learn depending on their personal learning characteristics. Exploring how students regulate their own learning is something important to investigate. This descriptive case study used interview and employed coding procedure to explore the varieties of student's self-regulatory learning strategies. Findings reveal that varieties of self-regulated learning strategies were employed by students both inside and outside of the classroom as they continue to finish learning tasks. Results further imply that even lecture method which is a less active teaching strategy can also develop or sustain the students to become self-regulated learner. This study helps teachers to identify self-regulated learning strategies giving them idea on how they can provide more opportunities to sustain identified learning strategies for effective learning to take place.*

Keywords: self-regulated learning, self-regulated learning strategies, descriptive case study, lecture method, Science achievement, Biological Science

Introduction

Identifying specific teaching methods that can best achieve course objectives of specific lessons and developing students to become self-regulated learners are two of the most challenging tasks a teacher faces. In higher education, particularly in college teaching, the most common method of instruction is lecturing. Traditionally, in most Asian countries teaching is predominantly performed using teacher-centered methods (Wang & Farmer, 2008). In the universities, traditional lectures are still the most widely used method of instruction (Adib-Hajbaghery, 2011). It is used as a common and easy way to deliver large amounts of information to students. Charlton (2006) claimed that the usefulness of lectures is not generally understood, and the lack of convincing arguments on its benefits becomes a major factor in underestimating their importance.

There are mixed views on the effectiveness of the lecture method. The disadvantages of using traditional lecture method as mentioned in certain studies include: made students bored very quickly, eventually losing their enthusiasm and interest in the teacher (Charlton, 2006); not sufficient to produce meaningful understanding and produced low performance among students (Coral, 2003). In addition, lecture method has also identified weaknesses, which include passivity and boredom among students, discourages creativity, lesser effectiveness for skill acquisition, lack of skill or effectiveness of the lecturer, and decreased attention span of the audience (Buckley, 2003; Zahed & Williams, 1996). Morgan et al. (2000) further added that

long-term retention may be limited among students when lecture method is used.

On the other hand, some studies presented positive results on the use of the lecture method. Comparing traditional lecture and discussion, lecture is a better method for retention of the content (Beers, 2005). It is regarded as a very useful form of delivering lesson content to students (Folley, 2010). In addition, lecture can be used in successfully communicating facts, ideas, and theories to students (Rahman, et al., 2011). It is considered also to be versatile for it can be applied in any situation, subject matter, and across students of varying ages and learning abilities. Lecture enables systematic and efficient sharing of much complex information to large groups of students in a relatively short period of time, and may stimulate further learning (Zahed and Williams, 1996). A well-planned lecture can successfully help students accomplish learning tasks such as: (a) analyzing and showing results of ideas that are compared and contrasted; (b) challenging beliefs and suppositions; (c) explaining, clarifying, and organizing data; and (d) motivating students to learn (Goyak, 2009).

There are researches that revealed that lecture method is as effective as other teaching methods. Bligh (2000) concluded that lecture is as effective as other methods for transmitting information, to teach facts, but not more effective. Methods such as E-learning in nursing education (Mehrdad et al., 2011), computer-based teaching (Williams and Zahed, 1996), problem-based learning among nursing students (Beers, 2005)

were found as equally effective as lecture method in terms of knowledge acquisition.

In addition, Adib-Hajbaghery (2011) pointed out that some researches (e.g. Jeffries et al., 2003; McDonald 2003, & Salimi et al., 2007) revealed that there were no significant differences observed between achievement scores of students taught in traditional lectures and active methods such as multimedia or computer-assisted teaching methods or small groups. A similar observation is reported in the dissertation of Goyak (2009), where results revealed that there was no significant difference in the achievement scores of students taught in lecture and cooperative learning methods. The noted advantages and disadvantages of lecture led to studies that produce conflicting results on the effectiveness of the said method on students' learning.

Lecture can be an effective or one of the least effective methods depending on how the teacher uses it (Rahman et al., 2011). This is supported by Seth et al. (2010) who revealed that students commented that regardless of the method of delivery, the effectiveness of the lecture largely depends upon the teacher.

With these varying views on the effectiveness of traditional lecture method, the study aimed to investigate student's use of self-regulated learning strategies and determine if traditional lecture method sustains the use of these strategies.

Methodology

The case study design was used in this study. Case study narrows down a broad research field (Yin, 2003) and its "focus is on the case and understanding the complexities of it" (Mayan, 2009, p. 50). This design was preferred as it allows the researcher to see if the lecture method is able to sustain the self-regulated learning strategies used by the students in the duration of the study. The unit of interest in this study is the self-regulated learning strategies across the eight learning contexts of eight freshmen students.

Research Setting

This study was based on the qualitative data collected as part of a bigger study on the effect of self-regulated learning method on academic performance of students. The participants were freshmen college students enrolled in Biological Sciences in public higher education institution. The students were exposed to traditional lecture-recitation in the entire duration of the semester for a period of five months.

Data Collection

This study employed interview method. Interview is a common data collection method of case studies (Yin, 2003). Since there were just eight participants of the study, the researcher conducted one-on-one or in-depth interview of all

participants. Keats (2000) mentioned that conducting in-depth interview allows the interviewer to adapt the questions to the respondent's characteristics and backgrounds. The method enables the interviewer to control the situation allowing the rephrasing of the questions when needed to encourage the respondent, thus, trust and empathy between the researcher and respondent are developed in the process. The respondents were interviewed twice, at the start and then at the end of the course.

The students were informed about the purpose of the interview and that it will be an audio-recorded. An audio-recorder was used to supplement the verbatim written records of student responses to each context. As patterned from Shapley (1994), the SRLIS was given at the beginning and at the end of the course.

During the individual interview, the learning contexts were presented as open-ended questions asking students on the methods they used to accomplish the described tasks in each learning context. When a student failed to give an answer, prompt questions were asked, such as "Is there any particular method(s) you use? What if you are having difficulty?". When the student still fail to suggest any SRL strategy, the next learning context was presented. However, when the student answered one or more learning strategies, the student was asked to rate how often he or she used the mentioned strategy(ies) using a 4-point Likert scale ranging from 1 (seldom) to 4 (most of the time).

Sample and Sampling

There were eight freshmen students enrolled in a general course Biological Sciences participated in the study. Three were males and five were females. Since this research is part of a dissertation, the sampling was based on the procedure intended for the main study. The result of the pretest served as the basis for choosing the participants.

Ethical considerations

This research adheres to the ethical principles of consent, confidentiality, and anonymity. The research participants gave their approval to participate in the study and they were briefed that they may opt not to answer questions that they do not want to answer. Also, they were assured that their names would not appear in the manuscript as the strategy they used were the main focus of the study.

Reflexivity

The researcher was also the teacher of the participants. The researcher acted as participant-observer. Since this is part of a bigger study, the researcher was the one who taught to ensure that the proper teaching method intended for the research was followed. This also enabled the

researcher to observe and validate the participants in the practice of the SRL strategies being mentioned in the interview.

Research Instrument

This study made use of Self-Regulated Learning Interview Schedule (SRLIS). This is a semi-structured interview procedure, which was constructed by Zimmerman and Martinez-Pons (1986) and was designed to assess the use of 14 types of self-regulatory learning strategies. Each self-regulated learning strategy is defined in the paper of Shapley (1994).

This interview questionnaire asks respondents to describe to the interviewer if there are and what strategies they use in relation to eight learning contexts described to them. Data obtained from the interview provided information on the presence or absence and the frequency of SRL strategies in the series of student's responses (Boekaerts and Corno, 2005). The SRL strategies being assessed include environmental structuring (ES); goal setting and planning (GSP); keeping records and monitoring (KRM); organizing and transforming (OT); rehearsing and memorizing (RM); reviewing notes (RN); reviewing tests (RT); and reviewing texts (RTxt); self-consequences (SC); self-evaluation (SE); seeking information (SI); seeking adult assistance (SAA); self- seeking peer assistance (SPA); and seeking teacher assistance (STA).

The eight learning contexts described in the questionnaire include: in classroom situations, when checking science homework, when completing writing assignments, when completing mathematics assignments, when preparing for a test, when poorly motivated to complete homework, when studying at home, and when taking a test. The different self-regulatory strategies used by the students were determined on the basis of their responses to each learning context. The contexts were slightly modified to make it more meaningful to the students in relation to the Biological Sciences course. Such as asking in the context of completing mathematics assignments, it

was changed to when completing Science assignments.

Data Analysis

Coding procedure was used to summarize the data from students' responses to identify the categories of self-regulated learning strategies. Open coding was done first and then categories of strategy used were derived basing on the description provided by Shapley (1994). Coding was done primarily by the researcher. A research assistant was trained to be the second coder. Reliability was established using reliability procedure described by Withall (1949). Identical categorical judgments by the first coder and second coder were divided by the total number of strategies initially identified. The level of agreement between the researcher and the research assistant who was the second coder was set at 80%.

Scoring students' responses to SRLIS for the different learning contexts was based on procedure described by Shapley (1994). SRLIS was scored for strategy use and strategy frequency. Strategy use was scored dichotomously as having occurred or not occurred during any of the eight learning contexts. Strategy frequency is scored on the basis of the number of times a particular strategy was mentioned during the course of the interview. Multiple strategies that were mentioned were individually tallied and summed across the eight contexts. Then mean score for each strategy was derived (Zimmerman & Martinez-Pons, 1990). In comparing the first and second interviews, the strategy which has greater mean frequency would indicate that it was the specific strategy considered more frequently used in each of the learning context.

RESULTS

SRL Strategies

The following table shows the data on self-regulated strategies used by the participants across the eight learning contexts described by the interview schedule.

Table 1
SRL Strategy Use

Interview	ES	GSP	KRM	OT	RM	RN	RT	RTXT	SAA	SC	SE	SI	SPA	STA
First	8	8	5	4	5	6	7	3	3	2	6	8	8	1
Second	8	5	6	8	8	5	8	4	5	2	5	8	7	1

Legend:

- ES- Environmental Structuring*
- GSP- Goal Setting and Planning*
- KRM -Keeping Records and Monitoring*
- OT- Organizing and Transforming*
- RM- Rehearsing and Memorizing*
- RN- Reviewing Notes*
- RT- Reviewing Tests*
- RTxt- Reviewing texts*
- SAA- Seeking Adult Assistance*
- SC- Self-consequences*
- SE- Self-evaluation*
- SI- Seeking Information*
- SPA- Seeking Peer Assistance*
- STA- Seeking Teacher Assistance*

It can be gleaned from the table that students made use all the 14 SRL strategies in both interviews. This suggests that students already practice self-regulated strategies at the start of the semester and continued to practice until the end of the semester. In addition, looking at the first and second interviews, the number of students that use specific SRL strategies varies. It increased, decreased, or some remained the same. There are six SRL strategies in which the number of participants that used them increased. These include: KRM, OT, RM, RT, RTXT and SAA. On the other hand, there are four SRL strategies that decreased in the number of participant users. These are GSP, RN, SE, and SPA. Meanwhile, four of these strategies did not change in the number of users. These are ES, SC, SI, and STA.

SRL Strategies in Each Context

Table 2 shows the different strategies being used by the participant in each context described by the SRLIS. The learning contexts include: in classroom situations (Context 1); when completing writing assignments (Context 2); completing assignments (Context 3); when checking homework (Context 4); when preparing for a test (Context 5); when taking a test (Context 6); when poorly motivated to complete homework (Context 7); and when studying at home (Context 8).

Table 2

<i>Types of SRL Strategies Used per Context</i>	
Context	Types of SRL Strategies
1	GSP,KRM,OT,RM, RN,RTXT,SI SPA
2	OT,RN,SAA,SI,SPA
3	RM,RN,SAA,SI,SPA,STA
4	OT,SAA,SE,SI,SPA
5	GSP,KRM,OT,RM,RN,RTXT
6	KRM,RT
7	ES,GSP,SC
8	ES,GSP

The table revealed that for every context, there were a variety of SRL strategies used by students. Some are repeated in more than one contexts while some are only mentioned in one specific context. There are four specific SRL strategies mentioned only in one context. These include STA in Context 3, SE in Context 4, RT in Context 6; and SC only in Context 7. In addition, it can also be gleaned that there are varying numbers of SRL strategies in each context. Context 1 had the highest number of types of SRL strategies used which was eight. These were GSP, KRM, OT, RM, RN, RTXT, SI, and SPA. The lowest number of SRL strategy types was two (2) and were mentioned in Contexts 6 and 8.

SRL Strategy Frequency

Table 3 shows the number of times each particular strategy was mentioned during the course of the interview.

Table 3

Mean Frequency of Each SRL Strategy

<i>SRL Strategies</i>													
ES	GSP	KRM	OT	RM	RN	RT	RTXT	SAA	SC	SE	SI	SPA	STA
2.63	1.5	0.75	1.375	2.5	1.5	1.125	0.5	0.375	0.25	1	3	1.75	0.125
4.625	1.375	1.125	2.875	2	0.875	2.125	0.5	0.75	0.25	0.625	3.125	2.625	0.125

From Table 3, it is shown that students use the 14 SRL strategies across the eight learning contexts in varying frequencies. It is interesting to note that the most frequently used strategy is the same in both interviews. In the first interview, SI is the most frequent, while ES in the second interview. On the other hand, in both interviews STA strategy is reflected as the least frequently used. Students relied least on asking teacher assistance as it dealt with the eight learning contexts. Reasons may include that since they are taught using lecture method, instructions are already clear to the students and all information are provided for the accomplishment of the learning task.

In addition, comparing the two interviews, it can be noted that mean SRL strategy frequencies increased, decreased, or remained same. There were seven SRL strategies the mean frequency of which

increased in the second interview. These include ES, KRM, OT, RN, RT, SI, and SPA. On the other hand, four SRL strategies decreased their mean frequency in the second interview. These include GSP, RM, SAA, and SE. Then three SRL strategies namely: RTXT, SC, and STA had the same frequencies in both interviews.

These results may suggest that students exposed to the traditional lecture method used self-regulated learning strategies in varying frequencies as they went through the eight learning contexts specified in the SRLIS.

Classification of SRL Strategies

Table 4 shows the specific strategies mentioned by the students in each learning context described using the SRLIS.

Table 4
List of Specific SRL Strategies per Context

Environmental Structuring(ES)	Keeping Records and Monitoring(KRM)	Reviewing Test (RT)
Arrange materials needed	Note-taking	Leaving difficult items blank first then go back
Cleaning study area	Underlining important words in reference materials during discussion	Reading each question carefully
Cool place	Organizing and Transforming (OT)	Reviewing difficult items several times
Dim light	Analyzing information	Reviewing Texts (RTXT)
Eat while studying	Chunking of words	Reading course reference material
Having no load in the phone	Editing immediately	Reading topic repeatedly
Not organizing things in the area	Making drafts then rewriting	Reciting the terms
Not eating		Seeking Adult Assistance (SAA)
Not using/hiding phone	Making review material	Asking help from relatives
Organize notebooks by subject	Organizing notes in outline form	
	Reading reference material	Self-consequences
Quiet place (no music,no TV,no people around)	Rewriting notes at night	Imagining of reward and punishment
Studying in bed	Summarizing discussion	Self-motivation
Using phone in silent mode	Visualizing/imagining the process or concepts	Talking to oneself
Well-lighted room	Writing study guide	Self-evaluation (SE)
With music	Rehearsing and Memorizing (RM)	Double checking content, grammar, terms
Goal setting and Planning(GSP)	Assigning keywords to remember	Rechecking answers with notes
	Practice solving on their own	Reviewing by rechecking questions and answers
Concentrating and not minding others	Solving similar problems Talking to oneself the concepts	Seeking Information(SI)
Answering assignments early morning	Translating to mother tongue language the concepts	Comparing other references to the book used in homework
Focusing on the homework first before watching TV	Trying to solve similar problems	Researching using reference materials and internet
	Reviewing Notes (RN)	Using references to look for easy steps, rules for solving, and samples to solve
Listening carefully to discussion	Reviewing night before the quiz	Seeking Peer Assistance (SPA)
Making post-it reminders	Reviewing all topics and notes discussed	Asking help from classmates and boardmates
Making task schedules	Reviewing the reference	Asking friends from higher year levels
	Reviewing Test (RT)	Brainstorming or group study
Not going out of the boardinghouse	Answering all items	Seeking Teacher Assistance (STA)
Reviewing several days before exam during vacant time	Answering difficult items later	Asking teachers
Studying early morning	Answering first confident/easy items	
Studying night before exams	Concentrating on each item	
	Using elimination method	

From Table 4, it is evident that there are variations of SRL strategies preferred by the students. This indicates that the strategies used by the students were those that fit their learning styles. It is also shown in the table that there are contrasting strategies used by students. For

example, in the ES strategies, some would study in well-lighted room, quiet room, eating, arranging place of study and review materials, not using phone or hiding phone; while others like dim-lighted room, prefer to have background music, not

eating, not arranging place of study, and using phone while studying.

It is also interesting to note that with regards to SC strategy, students imagine of rewards for success or punishment for failure in accomplishing learning tasks such as an assignment or their study as a whole. Also, self-motivation strategy is used. They talked to themselves, as what one subject mentioned in the interview, "I'm a student. I'm here to study and to do what my parents expect from me." Answers indicated that students were both intrinsically and extrinsically motivated.

Conclusion

The various findings on the SRL strategies using the SRLIS, revealed that students use SRL strategies even if they are exposed to traditional lecture-recitation method. They too made use of

SRL strategies. In addition, SRL strategies are applied not only in the classroom but also outside, in their own places, as they continued performing learning tasks. Results further imply that lecture method may also develop or sustain the students to become self-regulated. Thus, it cannot be said that traditional method cannot develop students to become self-regulated. Traditional method may sustain the students' ability to become self-regulated. So lecture should not be entirely replaced. It should be integrated with other teaching strategies whenever appropriate.

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References

- Adib-Hajbaghery, M.(2011). Traditional lectures, Socratic method and studentlectures: Which one do the students prefer?. *WebmedCentral*. 1-9. Retrieved from WebCentral.com.
- Beers, G. W.(2005).The effect of teaching method on objective test scores:Problem-based learning versus lecture. *Research Briefs*, 44(7), 305-309.
- Bligh, D.A. (2000). *What is the Use of Lectures?*. U.S.A.: Jossey-Bass Publishers.
- Boekaerts, M., & Corno, L. (2005). Self-regulation in the classroom: A perspective on assessment and intervention. *Applied Psychology: An International Review*, 54(2), 199-231.
- Buckley, K.M.(2003).Evaluation of classroom-based, Web-enhanced, & Web-based distance learning nutrition courses for undergraduate nursing. *Journal Nursing Education*,42(8),367-70.
- Charlton B.G. (2006). Lectures are an effective teaching method because they exploit human evolved 'human nature' to improve learning. Editorial. *Medical Hypotheses*. 67, 1261-1265.
- Coral, R. H. (2003). *Metacognitive learning cycle model: Effects on students' learning in Genetics*. (Doctoral Dissertation) University of the Philippines-Los Banos, Laguna.
- Folley, D. (2010). The lecture is dead long live the e-lecture. *Electronic Journal of e-Learning*, 8(2),93-100.
- Goyak, A.M. (2009).*The effects of cooperative learning techniques on perceived classroom environment and critical thinking skills of preservice teachers*. (Doctoral Dissertation). Retrieved from <http://digitalcommons.liberty.edu/cgi/>
- Jeffries, P.R., Woolf, S., & Linde, B. (2003). Technology-based vs. traditional instruction. A comparison of two methods for teaching the skill of performing a 12-lead ECG. *Nursing Education Perspective*, 24(2), 70-74.
- Keats, D. (2000): *Interviewing: a Practical guide for Students and Professionals*. Buckingham: Open University Press.
- Mayan, M. J. (2009). *Essentials of qualitative inquiry*. Walnut Creek, California: Left Coast Press.
- Mehrdad,N., Zolfaghari, M., Bahrani, N., & Eybpoosh, S.(2001).Learning outcomes in two different teaching approach in nursing education in Iran: E-learning versus lecture. *Acta Medica Iranica*, 49(5), 296-299.
- Morgan, L.M. Whorton, J.E., & Gunsalus, C. (2000). A comparison of short term and long term retention: Lecture combined with discussion versus cooperative learning. *Journal of Instructional Psychology*, Vol. 27, 53.

- Rahman, F., Khalil, J. K., Jumani, N. B., Ajmal, M., Malik, S. & Sharif, M. (2011). Impact of discussion method on students' performance. *International Journal of Business and Social Science*. (2)7.84-112.
- Shapley, K.S. Metacognition, motivation & learning: A study of middle school students' use & development of self-regulated learning strategies. Presented to American Educational Research Association. April 5, 1994. pp. 1-29.
- Seth, V., Upadhyaya, P., Ahmad, M., & Kumar, V. (2010). Impact of various lecture delivery methods in pharmacology. *EXCLI Journal*, 9, 96-101.
- Withall, J. (1949). The development of a technique for the measurement of social-emotional climate in classrooms. *Journal of Experimental Education*, 17, 347-361.
- Yin, R. K. (2003). *Case study research: Design and theory*. Applied Social Research Methods Series, no. 5. 3rd ed. Thousand Oaks, CA: SAGE.
- Zahed, H. & Williams, T.C. (1996). Computer-based training versus traditional lecture: Effect on learning and retention. *Journal of Business and Psychology*. Vol. 11. No. 2, 297-310.
- Zimmerman, B.J., & Martinez-Pons, M. (1988). Construct validation of a strategy model of self-regulated learning. *Journal of Educational Psychology*, 80, 284-290
- Zimmerman, B. J., & Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy & strategy use. *Journal of Educational Psychology*. 83(1), 51-59.