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Exploring Strategic Thinking Skills in Process Oriented Task in ESL Classroom

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Abstract

English is used as the medium of instructions in most universities and colleges in Malaysia. Being a second language most students find it difficult to improve on the language specially to write report for process oriented task. Hence this paper draw on a research on using strategic thinking skills component to help improve in language learning and also process based oriented task. A researcher-developed taxonomy was design to address language problems in writing class of 56 students. Motivated Strategies Learning Questionnaire (MSLQ) adapted to current context was used to measure the learning strategies, motivation and learning awareness in the pre and post treatment to seek students' interest and motivation in language learning. Result showed that the taxonomy did improved on both language learning and process oriented task.

Keywords: strategic thinking skills, process orientation

1. Introduction

English is one of the subjects learnt in colleges and universities in Malaysia. Being a second language, English as Second Language (ESL) is mostly converse during class hours, thus, hampering the need to be proficient in the language. This is mostly seen in areas where the mother tongue Malay language is dominantly spoken. As such the proficiency level of students in English in these particular areas seems very alarming and need special attention Moreover, in engineering colleges, the need to be proficient in the language is necessary as the medium of instruction is in English. In addition to that, the learning approach mainly involved, process oriented engagement.

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The aim of the process orientated engagement is for students to gauge real life hands on experience where reading out of text books could not cater for such learning. Therefore, in order to move students' pattern of learning from text book reading to process oriented task which is to comprehend what is in the text book and moving it to hands on engagement, there is a need to expose students to the approach of learning which contribute to deeper understanding of the text to real life hands on engagement. We posit that having students to learn higher order thinking skills such as strategizing thinking skills will contribute to better learning in coping with process oriented task. Based on research such as Cognitive Strategy Instruction (CSI), Structure of Observe Learning Outcome (SOLO) taxonomy, Pressisen's taxonomy of essential thinking skills, a model of complex thinking skills and a model of metacognitive thinking skills and others, it is seen that developing thinking skills in students requires specific instruction and practice rather than mere application. If students are to learn how to think clearly and cogently, they must be provided with appropriate instruction (Beyer, 1987; Burke, 2004).

In addition to these, a research on strategic thinking skills taxonomy was develop to infuse strategic learning in an online learning approach which explores the needs to express thoughts using strategies and self regulation skills. English is one of the subjects learnt in colleges and universities in Malaysia. Being a second language, English as Second Language (ESL) is mostly converse during class hours, thus, hampering the need to be proficient in the language. This is mostly seen in areas where the mother tongue Malay language is dominantly spoken. As such the proficiency level of students in English in these particular areas seems very alarming and need special attention Moreover, in engineering colleges, the need to be proficient in the language is necessary as the medium of instruction is in English. In addition to that, the learning approach mainly involved, process oriented engagement. The aim of the process orientated engagement is for students to gauge real life hands on experience where reading out of text books could not cater for such learning. Therefore, in order to move students' pattern of learning from text book reading to process oriented task which is comprehending what is in the text book and moving it to hands on engagement, there is a need to expose students to the approach of learning which contribute to deeper comprehending of the text to real life hands on engagement. We posit that having students to learn higher order thinking skills such as strategizing thinking skills will contribute to better learning in coping with process oriented task. Based on research such as Cognitive Strategy Instruction (CSI), Structure of Observe Learning Outcome (SOLO) taxonomy, Pressisen's taxonomy of essential thinking skills, a model of complex thinking skills and a model of metacognitive thinking skills and others, it is seen that developing thinking skills in students requires specific instruction and practice rather than mere application. If students are to learn how to think clearly and cogently, they must be provided with appropriate instruction (Beyer, 1987; Burke, 2004). In addition to these, a research on strategic thinking skills taxonomy was develop to infuse strategic learning in an online learning approach which explores the needs to express thoughts using strategies and self regulation skills.

2. Problem Statement

The use of English as a second language (ESL) in Malaysia reflects the country's education emphasis to cater for international market learning. However, English as second language learning in Malaysia and in universities has a lot to improve as the use of the language has deteriorated for the past years.

Moreover, in technical and engineering focus universities, English becomes the medium of instruction. Students who enroll in these universities however were not selected based on their achievement in English but on their science, mathematics and technical subjects or whichever is relevant to the degree offered. This at the end poses a lot of problems for them to comprehend the language and at the same time to execute hands on task or any writing task which required the use of English language. As technical and engineering fields engage in a lot of field work and real life experiences, the flaw of not being able to use English will surely resulted in poor learning outcome.

As such, we posit to explore strategies of thinking elements to be incorporated in the learning of language and process engagement. This enable the progress in language be made clearly simultaneously while engaged in processing task requirement. A think aloud protocols is used to observe the use of language and strategic thinking component enables the students to be taught in using activities that arouses thought processes while engaging in the process of task completion.

3. Research Questions

In language learning the ability to associate language with task requirement is important. Students need to comprehend the language and explore the process required for the task to meet its aims and objectives. They need ways and means or steps and proceed through (Bailin, 2002) to enable them to learn language and the task at hand. A strategic approach to thinking enables students to learn (Sternberg, 1986). Therefore, the aim of this study is to explore "How does the component of strategic thinking skills contribute to the process orientation of language learning?"

4. Purpose of the Study

The lack of planning in any given task, be it, in project based learning, presentation or even in writing resulted in poor outcome. In addition to poor comprehension of a task requirement also resulted to poor process engagement. For this reason, comprehending in an open task engagement requires not only to process the information but also to process the task which requires students to decide on what to do, plan on how to do, to monitor and check what is wrong or should not be with careful evaluation of the results and outcome of the task process of which, how, what is happening along the way and lastly to be able to revise the whole process in order to achieve to its aims or goals. Hence, students need the strategies to learn the language and plan the process (Cohen, 2003). Thus, incorporating activities that inculcate strategizing thinking elements to comprehend language and processing on the task enable students to define their problems in both areas clearly and with progress towards language proficiency. Therefore, this study attempts to investigate the use of strategic thinking skills component in a process based orientation for second language learners of English language. It also aims to inculcate interest in language learning.

5. Research Methods

This study investigates the effectiveness of strategic thinking skills component for language writing process for ESL students. We use strategic thinking skills approach to learning in a concrete manner. We have activities that students undergo to help them remember the concepts and various learning strategies. A researcher-developed strategic thinking skills taxonomy was design to address language problems in writing class of 56 students. Motivated Strategies Learning Questionnaire (MSLQ) adapted to current context was used to measure the learning strategies, motivation and learning awareness (Pintrich, Smith, Garcia & McKeachie, 1991) in the pre and post treatment.

Data were gathered from two intact classes. Experimental group consist of 27 students while control group consist of 29 students. Both groups are of satisfactory to modest language users. Their language abilities were based on Malaysian University English Test (MUET) scores. Band 6 and 5 are highly proficient to proficient user, Band 4 is satisfactory user, Band 3 is modest user while, Band 2 and Band 1 is of limited to very limited user. Experimental group with 8 students (Band 4), 14 students (Band 3) and 5 students (Band 2) while control group with 8 students (Band 4), 16 students (Band 3) and 5 students (Band 2).

We use the taxonomy for the experimental group engagement to gauge students' strategic thinking skills that comprise of six thinking elements of decision making, planning, monitoring and checking, evaluating and revising. Each thinking skills comes with activities that enables students to incorporate the thinking engagement and task processes. As the task is being executed elements of language learning will also be imparted. The task required students to write an academic report based on a topic investigated by them. The task involve students to research on a particular topic, planning on timeline, monitor and check the writing and task progression, evaluate data and outcome and revise the report writing as the task is in progress. In addition, the task required students to go beyond recalling or restating learned information and also require students to manipulate the information in new or novel contexts. Such ill-structured problems should also have more than one defensible solution and should provide adequate collateral materials to support multiple perspectives (Lai, 2011). The control group was also engaged with writing a report.

Both groups were assigned to their task for 8 weeks. MSLQ (Pintrich et al, 1991) was administered for both groups as a pre-test during the first meeting and post-test during their final meetings. The questionnaires seek to determine students' motivation in language learning as well as learning strategies and learning awareness in relation to using the taxonomy. Experimental group did pre-test report writing after being taught through conventional method for four weeks. On the fifth week they were given the taxonomy which is conducted via online in a language laboratory and were asked to start again with the report writing. They completed their report for another four weeks with the aids of the taxonomy via online through thinking aloud protocols approach. The control group also did a pre test and post-test writing report according to normal classroom schedule. The post test gave more emphasis on face to face intervention. However, the data was not included as it not for the purpose of this paper . Language learning performance of report writing during the post- test focuses on grammar, vocabulary and meaning. The three areas were marked by four language teachers to investigate the use of language in report writing. The taxonomy process of ongoing learning was tracked via online engagement as comparison to language learning performance.
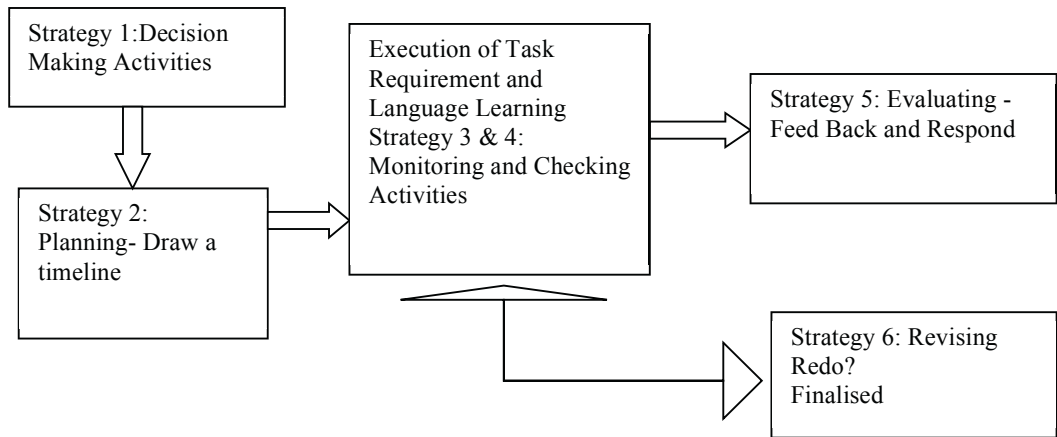
Fig. 1. The instructional approach of strategic thinking skills components

6. Findings

The use of strategic thinking skills component showed an increase in students' language learning of report writing.

Table 1 Pre test and post test on the use of strategic thinking skills in language learning of experimental group

	Mean	N	Std. Deviation	t	sig
LangPre	22.69	26	6.944	11.241	.000
LangPost	32.42	26	9.003		

$P < .05$

Table 1 shows significant difference in language learning after using strategic thinking skills taxonomy for experimental group in the pre test (M=22.69, SD=6.944) and post-test (M=32.42,SD=9.003) t(26)=11.241 p<0.5 α=.05.

Table 2 Correlation of Strategic Thinking Skills Component and Post-test language

		DM1	DM2	P1	P2	M1	M2	E1	E2	R	PosLang Ex
DM1	Pearson Correlation	1	.301	.401*	.515**	.414*	.432*	.648**	.681**	.497**	.699**
	Sig. (2-tailed)		.128	.038	.006	.032	.024	.000	.000	.008	.000
	N	27	27	27	27	27	27	27	27	27	27
DM2	Pearson Correlation	.301	1	.542**	.629**	.725**	.678**	.287	.229	.122	.695**
	Sig. (2-tailed)	.128		.004	.000	.000	.000	.146	.250	.543	.000
	N	27	27	27	27	27	27	27	27	27	27
P1	Pearson Correlation	.401*	.542**	1	.700**	.661**	.421*	.542**	.299	.369	.720**
	Sig. (2-tailed)	.038	.004		.000	.000	.029	.004	.130	.058	.000
	N	27	27	27	27	27	27	27	27	27	27
P2	Pearson Correlation	.515**	.629**	.700**	1	.598**	.697**	.645**	.567**	.463*	.889**
	Sig. (2-tailed)	.006	.000	.000		.001	.000	.000	.002	.015	.000
	N	27	27	27	27	27	27	27	27	27	27
M1	Pearson Correlation	.414*	.725**	.661**	.598**	1	.857**	.624**	.474*	.472*	.782**
	Sig. (2-tailed)	.032	.000	.000	.001		.000	.001	.012	.013	.000
	N	27	27	27	27	27	27	27	27	27	27

M2	Pearson Correlation	.432*	.678**	.421*	.697**	.857**	1	.613**	.597**	.457*	.806**
	Sig. (2-tailed)	.024	.000	.029	.000	.000		.001	.001	.017	.000
	N	27	27	27	27	27	27	27	27	27	27
E1	Pearson Correlation	.648**	.287	.542**	.645**	.624**	.613**	1	.853**	.847**	.787**
	Sig. (2-tailed)	.000	.146	.004	.000	.001	.001		.000	.000	.000
	N	27	27	27	27	27	27	27	27	27	27
E2	Pearson Correlation	.681**	.229	.299	.567**	.474*	.597**	.853**	1	.853**	.713**
	Sig. (2-tailed)	.000	.250	.130	.002	.012	.001	.000		.000	.000
	N	27	27	27	27	27	27	27	27	27	27
R	Pearson Correlation	.497**	.122	.369	.463*	.472*	.457*	.847**	.853**	1	.639**
	Sig. (2-tailed)	.008	.543	.058	.015	.013	.017	.000	.000		.000
	N	27	27	27	27	27	27	27	27	27	27
PosLang Exp	Pearson Correlation	.699**	.695**	.720**	.889**	.782**	.806**	.787**	.713**	.639**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	27	27	27	27	27	27	27	27	27	27

*. Correlation is significant at the 0.05 level (2-tailed).

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

Table 2 of Pearson correlation test shows there is positive correlation between strategic thinking skills and language results at sig.001. Two strategic thinking skills component, planning activity 2 (r=-889) and monitoring activity 2 (r=.806) shows significant correlation of strategic thinking component and language.

Table 3 Control group language learning in pre-test and post-test

		Mean	N	Std. Deviation	Mean(paired differences)	t	Sig. (2-tailed)
Lang Control	PreLangCn	25.62	29	6.422	-2.448	-8.156	.000
	PosLangCn	28.07	29	6.740			

As for control group pre-test (M=25.62, SD=6.422) and post-test (M=28.07,SD=6.740) t(29)=8.156 p<0.5, α=.05 show there is significant difference between both test scores on languages.

Table 4 MSLQ pre-test and post-test for experimental and control group

	Mean	Std. Deviation
ExpreMSLQA	84.15	14.686
ExpreMSLQB	86.15	13.032
ExpreMSLQC	82.59	13.042
ExposMSLQA	95.63	12.141
ExposMSLQB	99.70	11.200
ExposMSLQC	106.78	13.560
CnpreMSLQA	79.83	11.193
CnpreMSLQB	79.17	8.710
CnpreMSLQC	74.14	7.090
CnposMSLQA	77.76	10.218
CnposMSLQB	78.21	7.641
CnposMSLQC	74.07	7.081

Table 4 indicates mean for pre test and post-test for MSLQ test of MSLQ A on motivation for experimental pre-test (M=84.15, SD 14.686) and post-test (M=95.63,SD=12.141). While control pre-test (M=79.83, SD=11.193) and post-test (M=77.76,SD=10.218). MSLQB of learning strategy for experimental pre-test (M=86.15,SD=13.032) and post-test (M=99.70, SD=12.141) and control group learning strategy pre-test(M=79.19, SD=8.710) and post-test (M=78.12,SD=7.641). Experimental post test for MSLQC learning awareness (M=106.78,SD=13.560) and MSLQC learning awareness of control post-test (M=74.07,SD=7.081)

The analysis indicates the use of strategies from strategic thinking skills taxonomy showed positive result in the process of learning language. The process required students to focus on targeted objectives, monitoring and evaluating before performing the next phase. Result of MSLQ indicates that motivation plays an important role in sustaining interest and perseverance. Students also improved in their learning strategies as they dwelt in thinking of strategies that enable them to accomplish their task. Hence, they are more aware of their learning habits.

7. Conclusion

The study indicates the use of thinking components in the taxonomy enable students to practice activities of cognitive engagement. The strategic thinking skills component used in the process orientation for language learning indicate that learning language need strategies such as decision making, planning, monitoring, evaluating and revising to perform and to improve in language learning. These processes help students to be aware of errors and mistakes made and to be able to improvise on those errors based on feedback given. Language learning is a gradual process; students need ways and means to learn the rules and regulation of the language. It also signifies that process of learning requires motivation, learning awareness, constant monitoring and evaluation to sustain interest and to improve. The study also internalized some of the requirement for process based learning in writing which provide practice for strategic learning that is, firstly writing has a few strategy that takes place during learning, secondly, it is a process oriented and third it is an open task based learning. However, the face to face intervention on control group also resulted in changes of language learning performance.

Therefore, both the approaches of strategic thinking skills and face to face intervention do have significant effect in language learning performance. As our interest is on the component of strategic thinking skills, result showed positive effect on the thinking components towards language learning and task based orientation. The thinking components integration help students to gauge strategies used and the need to go through the process one by one, once familiarized and understood the ideas that underlies between cognitive domain and activities, students will be able to execute a strategy in learning language and strengthen strategic thinking skills development.

References

Bailin, S. (2002). Critical thinking and science education. *Science & Education*, *11*(4), 361–375
Beyer, B. K. (1987). *Practical Strategies for the Teaching of Thinking.* George Mason University: Allyn and Bacon, Inc
Burke, J.(2004). Learning the language of academic study. *Voices from the Middle*, *11*:4, 37-42
Cohen,A.(2003). Strategy training for second language learners. *Eric digest*, EDO-FL, 03-02
Pintrich, P.R., Smith, D.A.F., Garcia,T and Mc Keachie,W.J.(1991). Motivated Strategies for Learning Questionnaires. *Educational and Psychological Measurement AUTUMN 1993 53: 801-813,*
Sternberg, R. J. (1986). Critical thinking: Its nature, measurement, and improvement. *National Institute of Education*. Retrieved from http://eric.ed.gov/PDFS/ED272882.pdf
Lai, E.R. (2011). Critical Thinking: A Literature Review. *Research Report*. Pearson Publication