



Relationship between Students' Learning Strategies and their Cognitive Engagement at International Islamic School Gombak

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

This study investigates the relationship between students' learning strategies and their cognitive engagement in English class at International Islamic School in Gombak, Malaysia. Explicitly, the research intends to fathom the correlation between three learning strategies (cognitive, meta-cognitive and social) and students' level of cognitive engagement that include deep and shallow engagement. This research was carried out with 191 students (male and female), who constitute the respondents of the study. Their ages vary from 13 to 18 years. Data were collected using a questionnaire, employing a five (5) point Likert's scale. However, correlations as statistical inference were employed in testing the relationships between learning strategies and cognitive engagement. The findings reveal that significant and positive correlations were found between three types of learning strategies (cognitive, meta-cognitive and social) with cognitive engagement. Subsequently, a significant negative correlation was also found between deep and shallow engagement, portraying an inverse relationship. Thus, teachers at International Islamic School Gombak have to dedicate themselves in preparing classroom instructions or activities that exhibit elements of cognitive, meta-cognitive and social strategies. This however, in essence, could help the students to exert mental efforts, pay attention and become active during lessons, which all indicate signs of cognitive engagement.

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1. INTRODUCTION

Educationists in language learning perceived the concept of student engagement as a fundamental factor for understanding a number of issues that relate to school setting which include students' psychological association with school environment. The pedagogical engagement of learners is not only another factor, but also regarded as a crucial hypothetical means to recognize and appreciate the students' feelings, behaviors and thoughts that bring about students' dropout from high schools [1]. Nevertheless, recent researches show that students at high school levels demonstrate a dramatic, social and academic disengagement [2]. Nowadays, students become cognitively disengaged for various reasons. Among these reasons, learning strategies might be essential aspects that have relationship with students' cognitive engagement. The deterioration of students' engagement in general serves as promising danger to learners' dropout from school even before obtaining the basic knowledge that will enable them get jobs in the modern societies [3]. Hence, the study of factors that influence students' engagement has become conspicuous, as educationists understand the importance of employing engagement-related strategies. These strategies stand as a means to stimulate students' passion for learning and to improve the learning environment [4].

Moreover, learning can be considered meaningful if it plays some important roles, which engaging student cognitively, is the most vital aspect of learning process [5]. Many scholars, including Richardson and Newby, [6] have seen cognitive engagement as a sign of learning process in which learners dispense mental effort on learning task. Additionally, people like Zhu, Chen, Ennis, Sun, Hopple, Bonellon, Bae and Kim [7] and Wysocki [8] maintained that cognitive engagement has become a benchmark for defining meaningful learning and which helps in constructing new knowledge and understanding in the minds of the students. Cognitive engagement is an inclusive in nature, which requires mental exertion and engaged learning task.

Cognitive engagement has received attention from diverse fields of study. These fields include psychology, anthropology, information systems, cognitive science, and education at larger point of view. Carno and Mandinach [9] are considered

as the pioneer researchers that first studied cognitive engagement. These scholars affirmed that cognitive engagement is observable when students display a sustained attention for an intellectually demanding task that may result to useful learning and accelerated levels of thinking. Certainly, Conrad and Donaldson [10] elucidated that high level of engagement leads to critical thinking. In addition, cognitive engagement becomes conspicuous through some methods of instructional delivery. For instance, face-to-face learning process, when students show sustained attention on learning tasks that need mental exertion, is one of the methods [11]. Contrarily, Zhu [12] emphasized that observing cognitive engagement in online learning is different from traditional system of learning. He expounds cognitive engagement can be appreciated in online environment from the intensity or richness of the discussed messages but not otherwise [12]. Therefore, regarding online learning setting, Zhu [12] illuminates cognitive engagement as mental exertion and concentration that a particular learner expends in the process of learning. He added that, cognitive engagement comprises learner's ability to pursue knowledge, interpret, criticize and summarize learning tasks. It also involves student's ability to reason and reach a particular and valuable conclusion through various techniques that students can employ.

1.1 Statement of the Problem

Learning strategies are methods that students employ to facilitate the acquisition and retention of information. Thus, scholars had made efforts to study relationship between learning strategies and other constructs such as self-efficacy [13], deep reflective comprehension [14], motivational beliefs [15], evaluation method [16] and learning styles [17]. On the other hand, many educationists as well have considered cognitive engagement as fundamental factor that leads to students' success in school. Hence, many researchers have studied the concept of cognitive engagement in relation to learning [18], motivational beliefs [1] and self-efficacy [19]. Sequel to this, it is indicated that scholars did not exert much efforts to study the relationship between learning strategies and cognitive engagement. Therefore, this study aims to find out relationship between the two constructs among the students of International Islamic school Gombak, Malaysia.

1.2 Research Objectives

1. To find out the relationships between cognitive learning strategy and cognitive engagement (deep and shallow) among the students of International Islamic school Gombak, in their English class
2. To find out the relationships between meta-cognitive learning strategy and cognitive engagement (deep and shallow) among the students of International Islamic school Gombak, in their English class
3. To find out the relationships between social learning strategy and cognitive engagement (deep and shallow) among the students of International Islamic school Gombak, in their English class.

1.3 Research Questions

1. What are the relationships between cognitive learning strategy and cognitive engagement (deep and shallow) among the students of International Islamic school Gombak, in their English class?
2. What are the relationships between meta-cognitive learning strategy and cognitive engagement (deep and shallow) among the students of International Islamic school Gombak, in their English class?
3. What are the relationships between social learning strategy and cognitive engagement (deep and shallow) among the students of International Islamic school Gombak, in their English class?

1.4 Scope/Delimitation and Limitation of the Study

This study intends to examine the relationships between students' learning strategies and their cognitive engagement, in their English class. Therefore, the data collection was conducted at the International Islamic School, Gombak. The population comprised of 375 secondary level students and 191 students were selected. However, in relation to this study only three strategies (cognitive, meta-cognitive and social strategies) were considered. To reiterate, studies including that of Abu Shmais [20], Al-Buainain [21] and Maryam [22] have indicated that successful language learners frequently employed these strategies. In addition, questions formulated to evaluate student's cognitive exertion were only limited to English language subject, which covered the entire cognitive

engagement a particular student dispense in an academic work.

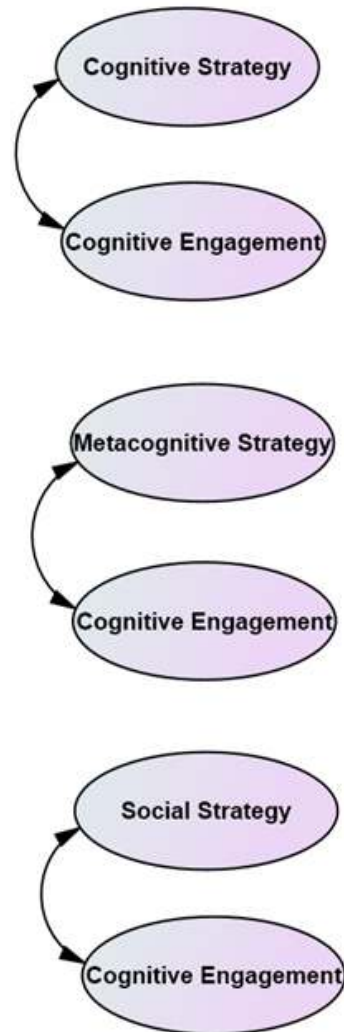


Fig. 1. Conceptual framework

However, this study had a number of limitations. Firstly, this study was limited to only International Islamic school Gombak, Malaysia. Therefore, the findings could not be relevant and generalized to other educational institutions. Secondly, the small number of the sample size (N-191) and the sampling technique used (purposive sampling) were also two major factors that can limit the generalization of this study. In addition, out of the 191 questionnaires distributed only 130 were able to be retrieved, and were used for the analysis. Moreover, female students participated more than male; therefore, no equal representation was available. Furthermore,

attention was not given in order to find out some of the factors that made majority of the students to associate to shallow engagement. Similarly, the study did not provide equally representation from the various grades; thus, majority of the participants were from grade 9. Therefore, random sampling technique should be employed in the future research. The Fig. 1 illustrates the relationships between the two variables.

2. REVIEW OF LITERATURE

Learning strategies have attracted enormous attentions and efforts of researchers because of their significance in learning. Scholars used the term and investigated different learning strategies that exist among different learners. Findings from their studies have contributed to the greater extent on how learning strategies influence learner's understanding and effort in learning process. In addition, Weinstein and Mayer [23], O'Malley and Chamot [24] associated learning strategies in respect to attitudes. Subsequently, Oxford [25] enlarged the meaning of LLSs to "operation employed by the learner to aid acquisition, storage, retrieval and use of information by adding specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations".

Majority of researchers observed that effective strategies for learning language are essential in promoting proficiency [26]. Consequently, if teachers become familiar with sound methods employed by learners, it will likely guide them to instill these efficient strategies to less proficient students in order to help them improve their language skills [22]. To determine the methods of language learning used by successful learners and to train students with lower proficiency, schools encourage teachers to evaluate the soundness of techniques utilize by language students. In addition, this provides the reason why majority of present studies on language learning try to appraise the different methods or strategies employed by language learners [22].

2.1 Learning Strategies and Learner's Characteristics

It has been a paramount part of descriptive research related to language learning strategies to associate self-reported strategy employed by students and constructs such as language proficiency and gender [27]. Among the

researches that examined the distinctive strategy employed among the males and females students revealed that female learners utilize more strategies compared to male students [28]. Contrarily, some studies indicated no variation in terms of strategies utilized by females and males students [29]. However, in the findings of Wharton [30], males were found to use more learning techniques compared with their female counterparts and this is supported by El-Dib [31], who affirmed that both opposite sex varied for strategies they used while learning language. Nevertheless, El-Dib did not specify the overall strategies used by either male or female students. Thus, the findings serve as an avenue to however, further investigate the type of strategy male and female students frequently associate with respectively [27].

Some studies were conducted towards determining the connection between techniques used in learning language and student's level of proficiency. Students with effective language competency employed a better or greater variety of language learning strategies [32]. Variation among effective and less proficient language learner has been notified through three major ways. Firstly, it deals with the number and variety of strategies the students employed. Secondly, it concerns the ways in which the employed strategies are used for the activity. Thirdly, it covers the suitability of the strategies for the activity. Interestingly, these studies highlighted that the major determinant of effective language used, depended on the ability of the learners to understand and appreciate those specific requirements for a particular task and whether the strategies being used could match the requirement in order to accomplish the target [33].

Furthermore, less anxiety with high confidence level serve as two major factors that contribute to higher levels of language proficiency, which in summary shows that student's emotional factors relate to techniques used in learning and have impact on their performance [34]. Therefore, the effects of teaching language learners should exhort them to explore variety of learning strategies, test and evaluate those strategies and finally to decide on their particular series of efficient strategies. More so, without exclusion, learners could benefit from understanding how to make use of meta-cognitive strategies for the purpose of planning, managing and accessing themselves within the learning process [27].

2.2 Empirical Studies Related to Students' Learning Strategies and their Cognitive Engagement

Numerous researches in the area of cognitive engagement and learning strategies have been evolving; this indicates the essential part of the two constructs. Such researches come up by using, most specifically inventories developed by some scholars. Biggs, Kember, and Leung [35], developed an inventory purposely for tapping learners' levels of cognitive engagement. Secondly, Strategy Inventory for language learning (SILL) developed by Oxford [25] has been broadly used in various researches related to EFL/ESL; and to investigate the relationship between learning strategies and other variables such as, motivation, self-efficacy and academic achievements. Therefore, the present study specifically intends to determine the relation of learning techniques employed by International Islamic school students in English class and cognitive engagement. The proceeding paragraphs review the literature limited on the studies that investigated these two constructs. The essence is to show how less efforts were given by researchers investigate the influence of strategies used in learning English and cognitive engagement.

Helme and Clark [18] carried a research with high school children in Melbourne to explore the relation between cognitive engagement and knowledge acquisition through finding those signs of cognitive engagement in the mathematics classroom. Sample of 24 children (14 girls and 10 boys) and seven teachers were selected. Interviews and observations were used in the study and the findings revealed two major issues. First, unique linguistic and behavioral indicators can consistently serve as indicators of cognitive engagement. Second, cognitive engagement can be enhanced through specific features of the classroom condition, namely: learning task and individual. On the other hand, numerous studies have investigated the correlation between the cognitive and motivational aspects of engagement such as Blumenfeld, Puro and Mergendoller [36]. Their findings showed that it is not necessary to associate high levels of cognitive engagement with the high levels of motivation.

Other research conducted by Arabzadeh et al. [19] explored the effects of teaching self-efficacy on high school students' cognitive engagement. The method used was cluster multiple-stage

sampling type, and Greene and Miller's [33] cognitive engagement questionnaire was adapted and administered to 50 students, albeit the study was experimental in nature. The findings showed that teaching self-efficacy to students had significant effect on their cognitive engagement, and enabled them to make use of cognitive strategies in order to enhance their learning. Again, Barbara and Christopher [1] have conducted a research to investigate the connections between learner's motivational beliefs and cognitive engagement among three high schools, in the Midwestern United States. Unit of analysis of the study comprised of 249 students ranging from 14-19 years. Students were selected from the English classes in order to ensure students' overall participation in the study, because the assumption was that, every student took English as a subject. Essentially, the findings of the study showed that there was a need to create some conditions in order to encourage learners to focus, develop understanding and concurrently to apply cognitive strategies to support learning. These conditions include, making them feel gratified and see themselves as esteemed members of classroom, feel loved by teachers and peer, and become contented that the present work is helpful to their future career.

Sadeghi [37] has carried out a research to explore the connection between the learning methods used by university students in learning English as foreign language and motivational orientations, which include both extrinsic and intrinsic orientations. The participants were 131 in number (79 female, and 52 male students). Cluster sampling was used to draw the sample size. Additionally, SILL was adopted to assess the techniques used in English class, whereas language learning orientation scale (LLOs) developed by Noels, Pelletier and Vallerand [38], was used to appraise students' motivational orientation. Motivational motives stand as controlled constructs, while techniques used in language as independent construct. In their study, three research questions were raised and have been answered through multiple regressions. The results obtained showed that the relation between scored obtained from language learning strategies (LLSs) and motivation was significantly negative. In addition, the findings showed no significant correlation between extrinsic motives and techniques used in language learning. This tally with the result of Noels et al. [38], in which the extrinsic orientation was not good and there was no significant

correlation between extrinsic and English foreign language promising activities. On the other hand, the relationship between scored obtained from LLSs and intrinsic orientation was found to be significantly positive. This result however, also tallies with the view of Elliot [39] that language students who have intrinsic orientation tend to use different language learning strategies. Finally, it has been observed from the result of Elliot [39], that intrinsic motivation affects LLSs.

Two comparative studies have been carried out to find the language learning strategies use by two different colleges' students (Romanian and Turkish), and between successful and unsuccessful language learners respectively. Arslan, Rata and Yavuz [40] revealed that Romanian learners used high strategies than Turkish students. Additionally, in terms of grade levels the findings showed that there were significant differences between both of them concerning the utilization of language learning strategies. However, Ali, Maryam, Nabipoor-Ashrafi, Javad and Parviz [41] found that there were significant differences among the successful and unsuccessful learners in the utilization of leaning strategies.

The findings of Richard and Yibing [42], in a research conducted to figure out the interconnection between behavioral, emotional and cognitive school engagement among high school students was quite magnificent. It revealed that behavioral engagement (students' adherence to school and classroom rules) and emotional engagement (learners' attitudes, feelings, and perceptions regarding school) are related. Likewise, each serves as basis and an outcome of other. Additionally, the behavioral engagement influenced cognitive engagement. It was also affirmed that the extent to which learners become committed, involves an engagement in both social and academic activities in school. Thus, it provides an important ground in promoting competence, preventing academic failure and inspires students to achieve good performance. More so, some studies related to classroom learning project, recommended that the style of instruction and the quality peer relations both have an immense impact on the student cognition and meta-cognition [42].

3. METHODS

The study aims to investigate the relationship between learning strategies and cognitive engagement among International Islamic school

students in English class. Hence, survey method was used as described the most employed method in quantitative research. Moreover, data collected through survey method can be analyzed either descriptively or by using inferential statistics [43].

3.1 Population of the Study

The study used secondary school students of International Islamic school Gombak, Malaysia as the participants ranging from grade 7-11. The secondary section has five (5) grades, which are made of 375 students as the total number of the population; and each grade comprises of three (3) classes with 25 students respectively (Al-Ghazali, Al-Farabi and Ibn Sina). Thus, each grade has 75 students. Table 1 shows students' enrolment register.

Table 1. Registered students' enrolment

	Class 1 (Al-Ghazali)	Class 2 (Al-Farabi)	Class 3 (Ibn-Sina)
Grade 7	25	25	25
Grade 8	25	25	25
Grade 9	25	25	25
Grade 10	25	25	25
Grade 11	25	25	25
Total	125	125	125

Source: School enrolment register, 2013

3.2 Sample Size and Sample Technique

The sample size comprises selected number of respondents from the students' population, which served as representatives of the population under study. However, to obtain the sample size and to overcome non-response bias is essential in survey research. In order to draw the sample size for the present study, the researcher referred to Krejcie and Morgan [44]. Thus, out of total population of 375 students, 191 samples students were selected for the study through purposive sampling technique. Purposive sampling is known as judgmental sampling; and it is chosen because the participants (students) stand as informants who can provide the information needed. Hence, the researcher deliberately chose 191 representing 50% students out total population of 375 as the sample size.

3.3 Instrumentation

Firstly, strategy Inventory for language learning (SILL) developed by Oxford [25] is adapted by the researcher in order to access students'

language learning strategies. The original questionnaire has 50 items and each of five items are classified into relevant construct that comprised of memory strategies, cognitive strategies, compensation strategies, meta-cognitive strategies, affective strategies and social strategies. In relation to this research, only three categories are considered: cognitive, meta-cognitive and social strategies with total number of twenty-seven items. To reiterate, number of studies including that of Abu Shmais [20] have indicated that successful language learners frequently employ these strategies. The researcher adopted all the items for cognitive, meta-cognitive and social strategies without

making any changes. Cognitive strategy involved 13 items; meta-cognitive strategy consisted 9 items and social strategy comprised 5 items. Tables 2, 3 and 4 indicate these three groups of 27 items.

In addition, another instrument that measures students' cognitive engagement is adapted in the study. Biggs, Kember, and Leung [35], developed the scale with 13 items. Thus, for all the questions, except those measuring level of processing, students responded to a Likert scale ranging from low of 1 (strongly disagree) to high of 5 (strongly agree). While questions measuring level of cognitive engagement, students

Table 2. List of cognitive strategy items

Category	Items statement
Cognitive strategy	<ol style="list-style-type: none"> 1. I say or write new English words several times. 2. I try to talk like native English speakers. 3. I practice the sounds of English. 4. I use the English words I know in different ways. 5. I start conversations in English. 6. I watch English language TV or go to English movies 7. I read for pleasure in English. 8. I write notes, messages, letters, or reports in English. 9. I first skim an English passage then go back and read carefully. 10. I look for vocabulary in my own language that are similar to new meaning in English. 11. I try to find the correct way of speaking English words 12. I find the meaning of an English word by dividing it into parts that I understand. 13. I try not to translate word-for-word

Table 3. List of meta-cognitive Items

Category	Items Statement
Meta-cognitive strategy	<ol style="list-style-type: none"> 1. I try to find as many ways as I can to use my English. 2. I notice my English mistakes and use that information to help me do better. 3. I pay attention when someone is speaking English. 4. I try to find out how to be a better learner of English. 5. I plan my schedule so I will have enough time to study English. 6. I look for people I can talk to in English. 7. I look for opportunities to read as much as possible in English. 8. I have clear goals for improving my English skills. 9. I reflect about my progress in learning English.

Table 4. List of adopted five items of social strategy

No	Item statement
1.	If I do not understand something in English, I ask the other person to slow down or repeat.
2.	I ask English speakers to correct me when I talk.
3.	I practice English with other students.
4.	I ask for help from English speakers.
5.	I ask my friends questions in English.

Table 5. List of cognitive engagement items

Category	Item statement
Cognitive engagement	I find that at times studying in English class gives me a feeling of deep personal satisfaction
	I feel that almost any topic in English class can be highly interesting once I get into it
	I find new topics in English class interesting
	I often spend extra time trying to obtain more information about many topics related to English class
	I find that reading my English books at home can at times be as exciting as a good novel or movie
	I test myself on important topics in English class until I understand them completely
	I work hard at my studies because I find the material use in English class interesting
	I spend a lot of my free time finding out more about interesting topics which have been discussed in the English class
	I come to English class with questions in mind that I want answer
	My aim is to pass English subject while doing as little work as possible
	I do not find English subject very interesting, so I keep my work to the minimum
	I generally restrict my study to what is specifically set, as I think it is unnecessary to do anything extra
	I make a point of looking at most of the suggested readings that go with the teachers

responded to a Likert scale ranging from low of 1 (never) to high of 5 (always). Specifically, items 1-9 measure deep cognitive engagement and items 10-13 measure shallow cognitive engagement. Table 5 shows the 13 items that measure students' level of cognitive engagement.

3.4 Validity of the Instrument

The present study however, used construct validity that includes measuring a scale in terms of hypothetical derived hypotheses regarding the type of the original construct or variable. Therefore, the experts in the field validated the instruments through content approach. The experts include three PhD students from curriculum and Instruction and one lecturer from research methodology class. Additionally, a consideration was given to the experts' views and feedback. Especially regarding some items that are general such as I practice the sounds of English and I ask questions in English. These items measuring cognitive and social strategy respectively are not specific. Therefore, based on the experts' view, the items were limited to I always practice the sounds of English and I ask my friends questions in English.

3.5 Reliability of the Instrument

The researcher conducted pilot testing in order to obtain the instrumental reliability and to ascertain

the consistency of the items. Twenty (20) questionnaires were distributed to randomly selected students from the five (5) grades (7-11). It was obtained that all the variables satisfactorily obtained both mean values and internal consistency reliability of Coefficient Alpha =0.667.

3.6 Data Collection Procedure

First, the researcher secured an approval letter to carry out the research from the Institute of Education of International Islamic university Malaysia (IIUM). The letter was submitted to the head of school where the research was conducted. In order to administer the questionnaire, the researcher sought help from International Islamic school (IIS) teachers with the principals' consent. The questionnaire was self-administered which was done in classes with the class teachers' support and 191 students participated. The researcher read the instructions at the beginning to the participants in order to provide accurate understanding and to avoid confusion to the content of the instruments. The participants were encouraged to seek more clarifications on everything that was not clear to them for successful gathering of information. Generally, it took the students almost thirty-fourty (30-40) minutes to answer the questionnaire. The chart in Fig. 2 illustrates the data collection procedure.

DATA COLLECTION PROCEDURE CHART

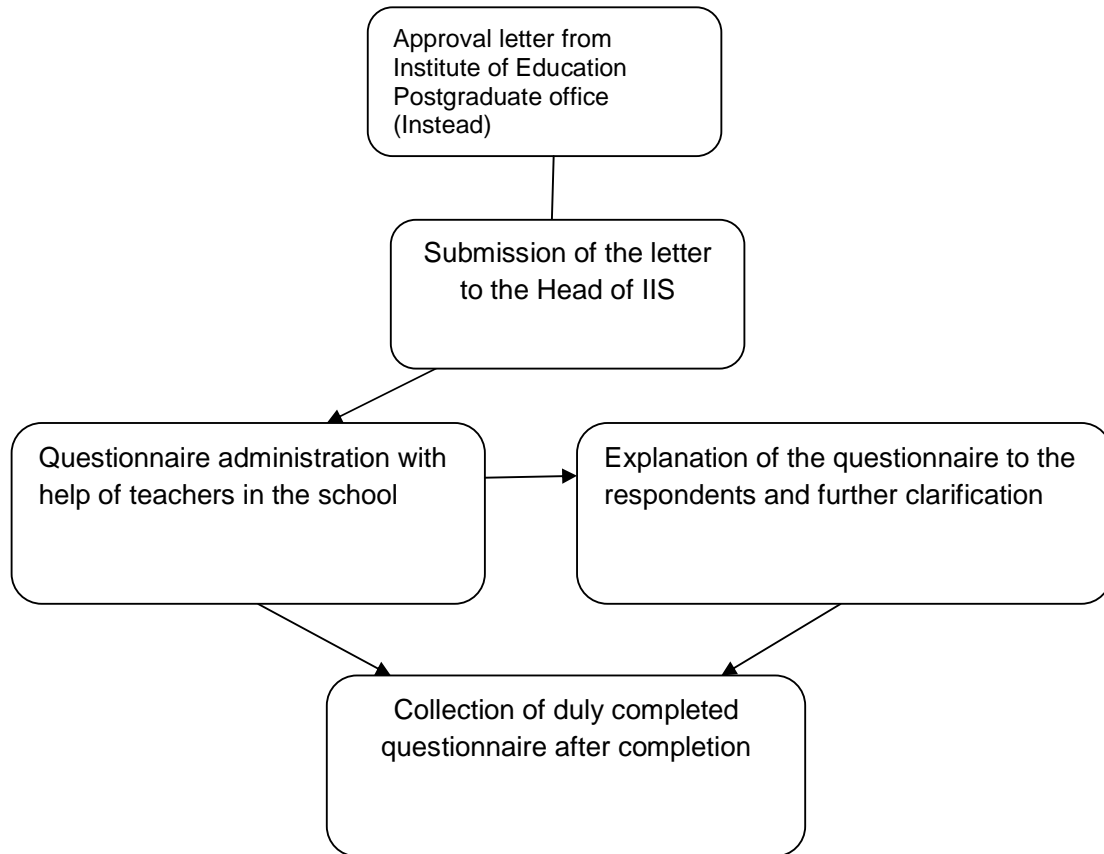


Fig. 2. Data collection procedure

4. DATA ANALYSIS AND PRESENTATION OF DEMOGRAPHIC RESULTS

The researcher employed Pearson moment coefficient to examine the relationship between students learning strategies and their level of cognitive engagement. Though, the instruments adopted for measuring and accessing both students' learning strategies and their levels of cognitive engagement were originally having five Likert scales (strongly agree, agree, neutral, strongly disagree, disagree); and (never, rarely, sometimes often and always); but in this analysis the scale has been collapsed to just three (disagree, neutral and agree) and (never, rarely, sometimes) respectively. This would help to reduce the task of analyzing processes as well as bring substantive findings. Table 6 shows descriptive statistics on the students' demographic variables, which are age, grade and nationality. The table also show that female

participants have greater percentage than their male counterparts do (N=78 which is 60% and N=52 representing 40%). With regard to the age of the participants, the score shows that 12 years is the minimum age group whereby 18 years is the maximum age group and a mean age is 14 and a half years (SD=1.43). The result has also shows that respondents falling within the mean age were 58 or 44.7%. On the other hand, the respondents whose ages were above the mean age were 72 or 55.3% and this implies that majority of the respondents were above mean age. In addition to that, Malaysian students made up 33% (N=42), while 67.7% were international students, which took far-reaching percentage. Considering the grades of the participating students, those from grade 9 were the highest with 30.8% (N=37). Coming third were students from grade 8 with 25.4% (N33) and the least were grade 10 students with 15.4% (N=20).

Table 6. Demographic information of the respondents

Demographic	Frequency	Percentage
Gender		
Male	52	40.0
Female	78	60.0
Age		
12.00	13	10.0
13.00	24	18.5
14.00	21	16.2
15.00	32	24.6
16.00	30	23.1
17.00	9	6.9
18.00	1	.8
Nationality		
Malaysian	42	32.3
Non-Malaysian	88	67.7
Grade		
8.00	33	25.4
9.00	40	30.8
10.00	20	15.4
11.00	37	28.5

Table 7. Co relational analysis between the variables

Variables	M	SD	1	2	3	4	5
CS	3.67	.56					
MS	3.72	.70	.489**				
SS	3.93	.86	.295**	.550**			
DE	3.08	.89	-	.435**	.379**		
SE	3.05	1.05	-	-	-	-.427**	-

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

4.1 Correlational Analysis between Students' Learning Strategies and their Cognitive Engagement

Table 7 above indicates correlations among the variables in the study consisting of cognitive, meta-cognitive and social strategies alongside deep and shallow engagements. The findings demonstrate that cognitive strategy positively relates to meta-cognitive strategy ($r = .489$, $p < .001$) and social strategy ($r = .295$, $p < .001$). Similarly, it was also found that deep engagement negatively correlates with shallow engagement ($r = -.427$, $p < .001$), revealing an inverse relationship that the higher the deep engagement the lower the shallow engagement.

Besides that, the results showed that a positive correlation between meta-cognitive strategy and deep engagement ($r = .55$, $p < .001$) was found. The finding indicates a significant correlation that students who used meta-cognitive strategy tended to have deep engagement. Similarly, correlation was also found between social strategy and deep engagement ($r = .37$,

$p < .001$). The finding illustrated a significant correlation that students who use social strategy tended to have deep engagement.

5. DISCUSSION AND CONCLUSION

Regarding the relationship between different learning strategies that comprise of cognitive, meta-cognitive and social learning strategies and cognitive engagement, the findings revealed that all the three learning strategies significantly correlated with cognitive engagement. Specifically, meta-cognitive strategy positively and moderately correlate with deep engagement, indicating that students who used meta-cognitive strategy in learning English language are likely to exercise deep engagement practices towards learning of English language. Similarly, it was also found that social strategy positively but somewhat weakly correlate with deep engagement, portraying that students who used social learning strategy are likely to engage in practices that relate to deep engagement towards learning English language. The finding also revealed that a significant positive

relationship between meta-cognitive and social strategy with deep engagement were found.

The findings however revealed that meta-cognitive learning strategy influenced deep engagement more than that of cognitive and social learning strategies, despite the students preference of social learning strategy over meta-cognitive. The findings of the study is consistent with that of Kirby, Silvestri, Allingham, Parrila and La Fave [16], who found that learning strategies correlated positively with the deep engagement, although meta-cognitive strategy was found to influence deep engagement than other strategies. Likewise, this study almost corresponded with that of Kovach and Wilgosh [45] who found that there is a relationship between students' learning strategies and academic performance. However, the findings of this study slightly differ with the result of Entwistle and Waterson [46] that learning strategies positively related to level of engagement, but they did not clearly indicate which learning strategy correlated more to the level of cognitive engagement.

6. RECOMMENDATION

1. Future researches can investigate the relationship between other learning strategies (memory, affective and compensation) and cognitive engagement.
2. Furthermore, future researches can explore the relationship between learning strategies and cognitive engagement through mixed method/triangulation (instruments, interviews, and observations).
3. Likewise, this study can be replicated by using domestic/conventional school students to ascertain the differences in the results.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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APPENDIX 1: QUESTIONNAIRE*Assalamu alaikum warrahmatullahi wabarakaatuh***Students learning strategies and cognitive engagement questionnaire****Section A. Demographic information (Tick where appropriate)**

Gender:	Age: _____	Nationality
Male <input type="radio"/>		Malaysian <input type="radio"/>
Female <input type="radio"/>		Non-Malaysian
Grade: _____	Class: _____	Specify: _____

Section B: Section B: Strategy inventory for language learning (SILL):

Please tick the best options that represent your opinion in each of the question below.

1=strongly disagree 2=disagree 3= neither agree nor disagree 4=agree 5=strong agree**Cognitive strategies:**

S/N	Item (s)	SD	D	N	A	SA
1	I say or write new English words several times.	1	2	3	4	5
2	I try to talk like native English speakers.	1	2	3	4	5
3	I practice the sounds of English.	1	2	3	4	5
4	I use the English words I know in different ways.	1	2	3	4	5
5	I start conversations in English.	1	2	3	4	5
6	I watch English language TV or go to English movies	1	2	3	4	5
7	I read for pleasure in English.	1	2	3	4	5
8	I write notes, messages, letters, or reports in English.	1	2	3	4	5
9	I first skim an English passage then go back and read carefully.	1	2	3	4	5
10	I look for vocabulary in my own language that are similar to new meaning in English.	1	2	3	4	5
11	I try to find the correct way of speaking English words	1	2	3	4	5
12	I find the meaning of an English word by dividing it into parts that I understand.	1	2	3	4	5
13	I try not to translate word-for-word.	1	2	3	4	5

Metacognitive strategies

S/N	Item (s)	SD	D	N	A	SA
14	I try to find as many ways as I can to use my English.	1	2	3	4	5
15	I notice my English mistakes and use that information to help me do better.	1	2	3	4	5
16	I pay attention when someone is speaking English.	1	2	3	4	5
17	I try to find out how to be a better learner of English.	1	2	3	4	5
18	I plan my schedule so I will have enough time to study English.	1	2	3	4	5
19	I look for people I can talk to in English.	1	2	3	4	5
20	I look for opportunities to read as much as possible in English.	1	2	3	4	5
21	I have clear goals for improving my English skills.	1	2	3	4	5
22	I reflect about my progress in learning English.	1	2	3	4	5

Social strategies

S/N	Item (s)	SD	D	N	A	SA
23	If I don't understand something in English, I ask the other person to slow down or repeat.	1	2	3	4	5
24	I ask English speakers to correct me when I talk.	1	2	3	4	5
25	I practice English with other students.	1	2	3	4	5
26	I ask for help from English speakers.	1	2	3	4	5
27	I ask my friends questions in English.	1	2	3	4	5

Section C: Level of Cognitive Engagement

Please circle the best option that represents your opinion in each of the question below.

		1=Never	2=Rarely	3=Sometimes	4=Often	5=Always			
SN	Item (s)	NV	R	ST	O	AL			
28	I find that at times studying in English class gives me a feeling of deep personal satisfaction	1	2	3	4	5			
29	I feel that almost any topic in English class can be highly interesting once I get into it	1	2	3	4	5			
30	I find new topics in English class interesting	1	2	3	4	5			
31	I often spend extra time trying to obtain more information about many topics related to English class	1	2	3	4	5			
32	I find that reading my English books at home can at times be as exciting as a good novel or movie	1	2	3	4	5			
33	I test myself on important topics in English class until I understand them completely	1	2	3	4	5			
34	I work hard at my studies because I find the material use in English class interesting	1	2	3	4	5			
35	I spend a lot of my free time finding out more about interesting topics which have been discussed in the English class	1	2	3	4	5			
36	I come to English class with questions in mind that I want answer	1	2	3	4	5			
37	My aim is to pass English subject while doing as little work as possible	1	2	3	4	5			
38	I do not find English subject very interesting, so I keep my work to the minimum	1	2	3	4	5			
39	I generally restrict my study to what is specifically set, as I think it is unnecessary to do anything extra	1	2	3	4	5			
40	I make a point of looking at most of the suggested readings that go with the teachers	1	2	3	4	5			

Correlations

		CS	MS	SS	DE	SE
CS	Pearson Correlation	1	.489**	.293**	.126	.053
	Sig. (2-tailed)		.000	.001	.153	.550
	N	130	130	130	130	130
MS	Pearson Correlation	.489**	1	.550**	.439**	-.123
	Sig. (2-tailed)	.000		.000	.000	.162
	N	130	130	130	130	130
SS	Pearson Correlation	.293**	.550**	1	.375**	-.043
	Sig. (2-tailed)	.001	.000		.000	.624
	N	130	130	130	130	130
DE	Pearson Correlation	.126	.439**	.375**	1	-.427**
	Sig. (2-tailed)	.153	.000	.000		.000
	N	130	130	130	130	130
SE	Pearson Correlation	.053	-.123	-.043	-.427**	1
	Sig. (2-tailed)	.550	.162	.624	.000	
	N	130	130	130	130	130

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

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