

**THE EFFECTS OF APPLYING PICTOLOGICS (PLS) METHOD ON ENGLISH
VOCABULARY LEARNING BY MALAYSIAN YEAR SIX
PRIMARY SCHOOL STUDENTS**

by

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**Kesan Kaedah Piktologics (PLS) terhadap Pembelajaran Kosa Kata Bahasa
Inggeris dalam Kalangan Pelajar Darjah Enam Di Sekolah Rendah Di Malaysia**

ABSTRAK

Kajian ini mengkaji kesan kaedah Piktologi (PLS) terhadap pembelajaran kosa kata bahasa Inggeris dalam kalangan pelajar darjah enam di sekolah rendah di Malaysia. Seramai seratus tiga puluh orang murid darjah enam di dua buah sekolah rendah di Bukit Mertajam, Pulau Pinang, Malaysia menyertai kajian ini. Mereka dibahagikan kepada dua kumpulan: kumpulan eksperimen yang didedahkan dengan kaedah PLS; dan kumpulan kawalan yang didedahkan dengan kaedah konvensional. Penyelidikan ini merupakan Kaedah Bercampur Strategi - Triangulasi -Serentak (Concurrent-Triangulation-Strategy Mixed Methods), yang bahagian kuantitatifnya didedahkan dengan Reka Bentuk Kumpulan-Kawalan Praujian-Pascaujian (Pretest-Posttest Control-Group Design). Suatu ujian kosa kata TOEFL 50-item, di samping soal selidik pelbagai pilihan diberikan pada bahagian kuantitatif. Dua kaedah pengajaran, iaitu kaedah PLS dan konvensional merupakan pemboleh ubah atau variabel bebas. Sementara, skor yang diperoleh pelajar dalam kosa kata bahasa Inggeris, dan pendapat pelajar tentang kegunaan imaginasi dan gambar merupakan pemboleh ubah bersandar. Pemboleh ubah kawalan adalah gender pelajar. Di samping itu, imaginasi dan pemikiran kritis dianggap sebagai pemboleh ubah mencelah (perantara). Analisis data kuantitatif menunjukkan bahawa pelajar yang didedahkan dengan kaedah PLS secara signifikan memperoleh skor yang lebih tinggi dalam ujian kosa kata, berbanding dengan pelajar yang didedahkan dengan kaedah konvensional. Namun demikian, perbezaan skor di antara pelajar lelaki dan perempuan dalam kumpulan eksperimen adalah tidak signifikan. Selanjutnya, terdapat perbezaan yang signifikan di antara kumpulan kawalan dan eksperimen tentang pendapat mereka dalam penggunaan imaginasi dan gambar dalam pengajaran bahasa Inggeris: pelajar yang didedahkan dengan PLS berasa lebih positif belajar bahasa Inggeris melalui penggunaan imaginasi dan gambar. Dalam bahagian kualitatif, pelbagai temu bual diadakan dengan pelajar, guru bahasa Inggeris yang terlibat dalam sesi latihan PLS, dan ibu bapa pelajar; pemerhatian langsung penyelidik semasa eksperimen, catatan semasa kajian lapangan, video dan gambar; dan akhir sekali soal selidik pendapat (*open-ended*) dijalankan pada akhir eksperimen. Analisis data kualitatif ini menunjukkan bahawa kaedah PLS bukan hanya boleh membantu pelajar menguasai kosa kata bahasa Inggeris dengan lebih berkesan, malah mereka juga boleh menjadi pemikir yang lebih kritis. PLS juga mampu mengubah pendapat pelajar tentang proses pengajaran / pembelajaran bahasa Inggeris melalui penggunaan imaginasi dan gambar. Di samping itu, ia juga boleh menjadikan pelajar lebih fokus dalam bidang pengajian yang lain. Kajian ini merumuskan bahawa penggunaan kaedah PLS dalam kelas bahasa Inggeris, membolehkan pelajar belajar dengan lebih baik dan cepat. Selanjutnya, masa depan pelajaran mereka akan semakin cerah seandainya guru yang terlibat mendapat latihan secukupnya dan para pelajar diajar sebaiknya dalam penggunaan teknik yang terdapat dalam kaedah PLS.

The Effects of Applying Pictologies (PLS) Method on English Vocabulary

Learning by Malaysian Year Six Primary School Students

ABSTRACT

This study investigated the effects of Pictologies (PLS) method on English vocabulary learning by Malaysian Year Six primary school students. One hundred and thirty Year Six Malaysian primary students in two public schools in Bukit Mertajam in the state of Penang, Malaysia participated in this experiment. They were almost equally divided into two groups: the treatment group which received their training with PLS; and the control group that received their instruction via a conventional method. The research was a Concurrent-Triangulation-Strategy Mixed Methods in which the quantitative section contained a Pretest-Posttest Control-Group Design. A50-item TOEFL vocabulary test, in addition to a multiple-choice questionnaire were administered for the quantitative section. The two methods of instruction, i.e. PLS and the conventional method were the independent variables. Moreover; students' gain score in English vocabulary, and students' opinion towards the usage of imagination and pictures were the dependant variables. The control variable was the students' gender. Also, imagination and critical thinking were considered as the intervening (mediating) variables. The analysis of the quantitative data revealed that students under PLS obtained a significantly higher gain score in the vocabulary test than the students under the conventional method. However, the difference between the vocabulary gain score between the male and female students in the treatment group was not significant. Furthermore, there was a significant difference between the control and the treatment groups as to their opinion towards usage of imagination and pictures in teaching English; the students under PLS felt more positive towards learning English via imagination and pictures. In the qualitative section of this study, various interviews with the students, the English teachers who had participated in the PLS training sessions, and students' parents; as well as the researcher's direct observations during the experiment, his field notes, video films and photos; and finally the open-ended version of the opinion questionnaire which was administered at the end of the experiment, were being utilized. The analysis of these qualitative data demonstrated that not only can PLS help students learn English vocabulary more efficiently; it can provide them with tools to become better critical thinkers. PLS also changes students' opinion towards the process of teaching/learning English by imagination and pictures. It can also help students to become more focused in their other subjects of study. This study concluded that by applying the PLS method in the English language classes, the students can learn better and faster. Furthermore, provided that the teachers be trained properly, and the students are taught sufficiently to use the various techniques which PLS improvises, they will face a brighter future in their education.

Chapter 1: Introduction

1.1 Background

The current Malaysian education system consists of pre-school, primary school (6 years), secondary school (5 years), and one to two years of pre-university or matriculation education (Yoong & Ayob, 2005; Ramlee, 2007). While many parents prefer their children to start formalised learning at the pre-school level, compulsory education in Malaysia begins at the primary schooling level. Primary schooling develops a solid foundation for life-long learning in children (“The Malaysia Government’s Official Portal,” n.d.).

Throughout the six years of primary education, students are assessed by various school-based evaluations until at the end of Year Six, when they undergo the first national examination known as the UPSR (Ujian Pencapaian Sekolah Rendah), or Primary School Achievement Test (PSAT) to evaluate their performance (Ramlee, 2007; “The Malaysia Government’s Official Portal,” n.d.).

There are three types of primary schools, each providing education in three different media of instruction respectively, namely Malay, Chinese and Tamil (Indian). Malay is the main medium of instruction in national schools; however, English is a compulsory subject. In vernacular schools, depending on whether Chinese or Indian vernacular

school, Chinese or Tamil is used as the main medium of instruction; Malay and English languages are compulsory subjects (Badrul Isa, 2006).

Children start school at the age of seven, and most choose schooling in their own mother tongue at the primary level. The first nine years of education is free and compulsory. The class size of Malaysian primary and lower secondary schools is fairly large, averaging between 35 to 40. Due to historical reasons, there exist a number of single gender schools for boys or girls. There are also a few special schools for blind, deaf or other handicapped children though students with special learning needs are in the process of being integrated into ordinary public schools (Yoong & Ayob, 2005).

1.2 Statement of the Problem

On March 10, 2009, the US President, Barack Obama, urges education reform (Obama, 2009). Outlining his plan for a major renovation for his country's education system 'from the cradle up through a career', he emphasized, "The solution to low test scores is not lower standards; it's tougher, clearer standards." At the same time, however, he urged states to develop standards "that don't simply measure whether students can fill in a bubble on a test but whether they possess 21st century skills like problem-solving and critical thinking, entrepreneurship and creativity."

In Malaysia, any administered policy has to follow the National Ideology, or generally referred to as the "Rukunegara". It is the country's common principle,

developed to address Malaysia's aspiration of unity and development, to bring together Malaysians and to create a sense of responsibility within each citizen (Badrul Isa, 2006).

According to Zakaria and Iksan (2007), there are generally two limitations considered in the traditional education: *lecture-based* and *teacher-centered* teaching. The former supports passive acquisition of knowledge in which students merely receive packages of information so called, 'knowledge'. This leads them to parrot or rote learning. The majority of work involves teacher-talk using either a lecture technique or a simple question-and-answer method that demands basic recall of knowledge on the part of the learners. In lecture based instruction, the teacher dominates classroom activities and produces an overload of 80 percent of the classroom talk. Generally, only correct answers are accepted by the teacher and incorrect answers are just disregarded. Students rarely ask questions or communicate thoughts with other students in the class. In the traditional classroom, activities are carried out in a way to merely verify previously introduced knowledge. Thus, instruction is not for conceptual understanding but rather for memorizing and consequently recalling the facts. Moreover, in the traditional teacher-centered education, the students rely on the teacher to decide what, when, and how to learn. Nonetheless, it seems that this traditional approach works relatively well, though it is not clear whether or not students will learn at a more advanced level of thinking.

Modern education must enable students to meet the future challenges and demands of the work environment and of the daily life. Thus, students not only need knowledge

but also communication skills, problem solving, as well as creative and critical thinking skills. (Zakaria & Iksan, 2007).

In *The Unschooled Mind: How Children Think and How Schools should Teach* (1995, p.3), Howard Gardner proposes a very startling opinion:

Even when school appears to be successful, even when it elicits the performances for which it has apparently been designed, it typically fails to achieve its most important missions. Even students who have been well trained and who exhibit all the overt signs of success- faithful attendance at good schools, high grades and high test scores, accolades from their teachers- typically do not display an adequate understanding of the materials and concepts with which they have been working.

What Gardner postulated in the year 1995 is in conformity with what President Obama has announced in 2009. That is to say, for a society to develop, the ‘would be’ makers of it should know how to think properly. This starts- at least in a formal way- with the primary education. Accordingly, in Malaysia, the National Philosophy of Education emphasizes the development of each individual’s education quality that will later contribute to the development of nation and society (Badrul Isa, 2006).

According to Pillay (1998), the Razak Report of 1956 which became the cornerstone of Malaysian educational policy, emphasised that a common syllabus was necessary to promote the development and unity of the new nation. The Razak Report also stated that English need to be taught in all schools as Malaysians would need the language in economic and professional fields.

Although Malay is the official language of administration, English is used widely in offices, high courts, and diplomatic service. Most local and international business in the private sector is also conducted in English (Pillay, 1998).

Mass media also exploits English via various ways. Television stations show many programs in English. There are also the English news on the radio and television, and three English national newspapers *The Star*, *The Sun*, and *The New Straits Times* (Pillay, 1998).

1.2.1 A brief historical view of teaching English in Malaysian schools

In 1991, then Prime Minister, Dr. Mahathir Mohammad made a press statement emphasising his concerns regarding the poor results of the national English language examination which was given at the end of secondary school. He warned that Malaysia might not only lose its economic competitiveness but also find it hard to progress in the industrial fields if its workforce was not proficient in English (Pillay, 1998).

In 1995, then Minister of Education, Dato' Sri Mohd Najib Bin Tun Hj Abd Razak urged for a big struggle in improving English standards. The most important concern was the improvement of standards through the introduction of a “tougher English examination” (Pillay, 1998).

According to Netto (2002), although in the past some of the country's authorities “frowned upon” the former colonial language, the recent increasing needs to compete in the global economy have made learning English politically viable.

In 2002, the supreme council of the United Malays National Organization [UMNO] party, the key group in the ruling coalition, declared that it would support the wider usage of the English language in national schools and agreed to a proposal for science and mathematics to be taught in English from the primary school level on. The approach toward teaching English at every level would also be changed, with the focus on improving Malaysians' command of the language (Pillay, 1998). The then Prime Minister also announced that English literature should be integrated into the school syllabi. He also elaborated that by 'literature' he means the contemporary literature, not the classics.

On another occasion in September 2002, Dr. Mahathir insisted his proposal was not politically oriented, "It is not intended to undermine the culture or the identity of the different communities in Malaysia. It is simply because we have to acknowledge that English is the language of learning today. In the past it was Arabic or even Latin, now it is English." (Aglionby, 2002).

1.2.2 Today's status of English in Malaysian schools

A research ("The Sun," 17 Sept., 2008) granted by the Center of Malaysian Chinese Studies, and performed by three associate professors from the Universiti Sains Malaysia (USM) was conducted in order to investigate the impacts of six years of the "Go English" national program. This study involved 443 science or maths teachers, 787 Year Five pupils, 13 headmasters and seven senior assistants at random from 20 schools in three northern peninsular states.

Quoting some of the obtained data in this study, we will try to arrive at a conclusion:

- Only 10% of vernacular primary school teachers in northern Peninsular Malaysia have fully implemented the use of English to teach science and mathematics.
- A total of 8.4% of the maths teachers and 13.5% of the science teachers (interviewed) said they did not use English as the medium of instruction more than 80% of the time.
- A total of 87% of the teachers polled admitted that they face problems in implementing the policy because their pupils are not able to catch up with them.
- Three quarters of the teachers lamented that their pupils have a poor command of English and two thirds of the teachers said their classes prefer Bahasa Malaysia or Mandarin to English for the two subjects.
- Some 70% of the teachers also found that their pupils have problems answering questions due to their poor command of the language.
- Because of the preceding problem, more than 50% of the teachers interviewed said their students tend to be passive when the two subjects are taught in English.
- More than half of the teachers admitted that they are not fluent in English and have problems with science and maths terms in English.

In another report (Baharom, 2009), Dr Khalil Idham Lim Abdullah, chairman of the Perak Backbenchers Club in the former Pakatan Rakyat-led state government, debates,

“The teachers themselves have a poor command of English. How do we expect them to teach their students?”

Moreover, according to Robinson and Zaitun (2008), English Language proficiency has been declining among the Malaysian primary school students. The authors also claim that the students’ basic oral skills have been weakening due to lack of usage and reflective exercise. Quoting Nurita et al. (2007), they also add that, “The Economic Planning Unit of the Prime Minister's Department found that around 60,000 Malaysian graduates are unemployed due to lack of certain skills such as communication skill, poor command of English and lack of work experience.”

In addition, we can have a look at what an experienced teacher states in this regard (Ibrahim, 2008), “I have been teaching English in secondary schools and tuition centres for 41 years in Kuantan and most of my Form 5 and Form 6 students can neither speak nor write proper English. Almost every sentence has to be corrected.”

According to Sofiali (2003), even many trained Malay teachers of English agree that they lack the competence and confidence to use English. He also states that because experienced ESL teachers think that their students would not be able to understand completely if they teach them in English, teachers have the tendency to apply different variations of translation method in the primary schools. He further adds that the non-trained ESL teachers also shared the same pedagogical drawbacks; and that the ESL teachers believed that the students found English a difficult subject to learn.

Robinson and Zaitun (2008), also assert that there are frequent reports in the Malaysian newspapers about the deteriorating standard of English. They claim that many academic scholars acknowledge the weakening in the standard of English Language among the primary and secondary school students. They further argue that poor motivation and lack of English usage and exposure are some of the main causes of low English language communication and proficiency among the Malaysian learners.

As postulated by Murugesan (2003), Malaysia has recently suffered a heavy turn down in English language proficiency. Therefore, both governmental and private sector employers are not satisfied with the ability of the graduates even to be able to communicate in the basic English language.

Likewise, in a report ("The Star," 10 Dec., 2006) on the findings of a research project conducted by Dr. Juriah Long and her team from University Kebangsaan Malaysia's Education Faculty, most Malaysian students are weak in English.

Furthermore, according to Halpern and Sanders (2004), thinking and language are closely tied constructs, because people's thoughts determine the language used to express them, and, in turn, the language that is used fabricates the thoughts. In addition, with reference to Mokhtar (2009), vocabulary is vital in our lives and thus, vocabulary acquisition is important to the English teachers who should make several decisions about ways of enhancing learners' repertoire. Mokhtar further debates, "Despite the fact that vocabulary is central to language and extremely important for L2 learners, lexis has

always been forgotten in the field of Second Language Acquisition (SLA) research” (p.3).

All the above-mentioned data and points of view indicate that the already-existing methods of teaching, as well as the curriculum have not met all the ideals of the society. Thus, any study which aims at somehow promoting the English knowledge of the students, e.g. primary school students can both facilitate the development of teaching/learning itself, and help other studies to push the educational system forward in this regard. Accordingly, the researcher believes that Pictologics or PLS, the newly developed teaching method, has made a subtle bridge among pictures, the art of imagination, and language. A picture can stimulate thousands of words, sentences, and memories in our mind in just a fraction of a second. It is possible to talk about a picture for hours without getting bored. Thus, when learning a new language, we can use our imagination to practice and use our newly-learnt knowledge, and move forward (Shirban, 2004c).

The art of imagination enables us to open wings and soar beyond a picture to the realms of knowledge. The inductive reasoning practiced in PLS increases students’ learning power, adds joy to training, and facilitates teaching. Imagination helps us to ‘see’ pictures with a new vision and travel across the land of dreams each corner of which reveals priceless pearls.

As the focus of the current study has been on the effects of applying Pictologics (PLS) method on English vocabulary learning by Malaysian Year Six primary school students, the researcher will further explain the objectives and significance of such a study in the next two sections.

1.3 Research objectives

The main purpose of this concurrent mixed methods study has been to investigate and better understand the problem in question, that is, Malaysian Year Six primary school students' weakness in learning English vocabulary; and to suggest remedies to this problem. Thus, firstly, this study was designed to assess whether this new teaching method (PLS) could be of any advantage in comparison to the conventional methods applied in the Malaysian context. At the same time, it was meant to investigate and recognize any possible gender differences among the Malaysian students with reference to the effects of this new method. Furthermore, because PLS relies firmly on the constant usage of imagination and pictures in the class, this study also aimed at estimating and comparing the students' opinion towards the usage of pictures and imagination in the class atmosphere in both treatment and control groups.

Subsequently, both quantitative (numeric) and qualitative (detailed views) data have been converged in order to gain more informative results. In this study, a 50-item TOEFL vocabulary test has been used to measure the effects of the new English language teaching methodology, Pictologics (PLS) on the English vocabulary intake by the students. At the same time, the phenomenological characteristics of this new teaching method have been explored and illustrated by employing questionnaires,

conducting observations, and utilizing interviews. This triangulation of data would particularly be important as far as the students' probable achievements, and the ways these achievements are made are concerned. Finally, one of the most central objectives of this study has been to inspect if PLS can help the students practice critical thinking skills and how to benefit from them.

1.4 Significance of the study

A study on the effects of applying PLS method on English vocabulary learning by Malaysian Year Six primary school students is significant for several reasons. First, it will add to the related literature through thoroughly examining a series of innovative techniques which are aimed to enable the students to enrich their English vocabulary, try to use their critical thinking abilities, and gain and sustain better attitudes towards learning procedures. Second, the study will introduce PLS method to the Malaysian English teachers, thus making it possible for them to use its ideas independently or integrated with other language teaching methodologies and approaches. Third, the concepts and design of this study, as well as the procedures which are employed will provide other researchers in the field with some useful inspirations. And finally, if the method proves practically effective on the Malaysian students, the education policy makers, particularly the authorities of the Malaysian Ministry of Education, may consider broader implementation of the idea for other areas in English language teaching/learning, other student populations, other languages, and even other subjects of study.

1.5 A brief introduction to Pictologics (PLS)

Pictologics (PLS) is a new method designed by the researcher which has proven successful in Iran. The word “Pictologics” is made of three parts: “picto”, “logic”, and “s”. **S** is a suffix which gives the whole word a noun form. **Picto** is the short form of ‘picture’. This has two meanings: as a noun, it means pictures of different subjects like people, animals, etc. Totally, there are just **300** picture cards used for all levels. ‘picture’ as a verb means ‘to visualize’ or ‘to imagine’. Via imagination, we can travel in time and place. Then, **logic** means ‘whatever word(s) or pieces of information that we can connect-directly or indirectly- to a certain picture or/and set of pictures picked by chance’ (Shirban, 2004c).

If students learn to do so, and if they learn to make the best of their five senses as well as their imagination, they can come up with producing many structures. It is very interesting that when we use more than one card at a time; i.e. if we deal with random combinations of two, three, and ... cards, and if we just see one concept from this picture and another from that, then we will have a very large number of chances. Therefore, there will be opportunities for the students to produce (both oral and written) structures, and chances for the teachers to check their students’ understanding and learning. Applying the formula $n! / m!(n-m)!$ with just 20 cards, we can have more than 2,000,000 combinations, each of which could be a good source for language production (Shirban, 2004c, p. 9).

1.6 Theoretical framework

The principles of PLS which have flourished through years of its practice have been in concord with the specifications of some of the most well-known theories in this realm. Precisely, five theories will be briefly examined for the purposes of this study: Jean Piaget's Genetic Epistemology, Lev Vygotsky's Theory of Social Development, Howard Gardner's Multiple Intelligences, the Schema Theory, and the Theory of Critical Thinking.

The two theories of developmental psychology of Piaget and Vygotsky have significantly influenced education, particularly, child education. Since the current study targets children, and because both Piaget and Vygotsky, though from different perspectives, favoured schema theory, the researcher will take a collective approach in viewing these three strands. On the other hand, because one of the basic assumptions in PLS is the continuous use of the physical senses both on the part of the teacher and the language learners, the researcher believes that Gardner's theory of multiple intelligences can help explain what actually happens in the minds of the students when learning with PLS. Finally, and most importantly, the researcher believes that the procedures and techniques implemented in PLS not only will help EFL/ESL learners to learn the language, it will do so by enabling them, or at least encouraging them to think critically.

The researcher's hypothetical model at the end of chapter two encompasses this collection of interwoven ideas.

1.7 Research questions and hypotheses

1.7.1 The quantitative method

As for the quantitative section of this study, the following research questions and null hypotheses will be put forward:

- 1- Is there any significant difference between the English vocabulary learning gain score by the Malaysian Year Six primary school students using PLS and the English vocabulary learning gain score by the other Malaysian Year Six primary school students using a conventional method?
- 2- Is there any significant difference in the English vocabulary learning gain score by the Malaysian Year Six primary school between male students and female students using PLS?
- 3- Is there any significant difference in the opinion towards English language learning through usage of pictures and imagination between the control and treatment groups of the Malaysian Year Six primary school students after the experiment?

H₀1- There is no significant difference between the English vocabulary learning gain score by the Malaysian Year Six primary school students using PLS and the English vocabulary learning gain score by the other Malaysian Year Six primary school students using a conventional method.

H₁- The Malaysian Year Six students who are taught with PLS will have higher English vocabulary learning gain score than the Malaysian Year Six students who are taught with a conventional method.

H₀₂- There is no significant difference between the English vocabulary learning gain score by the Malaysian Year Six primary school male students and female students using PLS.

H₀₃- There is no significant difference between the opinion towards English language learning through usage of pictures and imagination among the control and treatment groups of the Malaysian Year Six primary school students after the experiment.

H₃- The Malaysian Year Six students who are taught with PLS will have a more positive stand towards learning English through usage of pictures and imagination than those Malaysian Year Six students who are taught with a conventional method.

1.7.2 The qualitative method

- 1- What are the accomplishments of implementing Pictologics in the English classes of the Malaysian Year Six primary students?
- 2- How does Pictologics help the Malaysian Year Six primary students become better critical thinkers?
- 3- How does Pictologics help increase Malaysian Year Six primary students' positive opinion towards learning with pictures and imagination?

1.8 Delimitations & limitations of the study

Because of the specific nature of any study in treatment forms, the current study also faced the following delimitations (i.e. narrowing the scope of the study) and limitations (i.e. potential weaknesses of the study):

1.8.1 Delimitations

- 1- This study limited itself to two primary schools in Bukit Mertajam, a semi rural area in the State of Penang.
- 2- A maximum of 65 students in each school have been investigated in this research. Larger groups may change the outcomes.
- 3- Longer periods of implementing the treatment would reveal more information.

1.8.2 Limitations

- 1- The purposive sampling procedure in this study might decrease the generalizability of the findings.
- 2- Due to the short period of the experiment, a limited number of vocabularies had been dealt with.
- 3- Since the sample students were aware of the experiment, the results might have been affected by bias on their part, or the ‘Hawthorne Effect’.

- 4- Because of the qualitative viewpoint in this study, the findings might be subject to other interpretations.

1.9 Definition of terms

Critical thinking: According to Halpern (2003), critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome.

Five Senses: Every normal human being has five senses of sight, hearing, smell, taste, and touch. We perceive the world around us at least with one of these senses in the unit of time, though usually more than one sense at a time are involved.

Imagination: The ability to form characteristics of things in our mind that are not necessarily there in the present time or place, or even in the reality.

Intelligence: The ability or faculty to learn, understand, judge, reason, do, perform, conceive the world, etc.

Conventional Method: The method or eclectic combination of methods in teaching English which are in practice in the Malaysian primary schools. There are detailed guidelines for the teachers in this regards that are provided by the Malaysian Ministry of Education.

Pictologics, or ***PLS***: This is a new registered title which the researcher has coined. It refers to the new method which makes specific use of pictures in teaching languages. This very word is made of three parts: the ‘s’ at the end as a suffix; “picto” which is the short form of “picture” that means: 1-various pictures or photos, and 2- visualization or imagination; and finally “logic” which means a new vision in accepting what can be imaginary perceivable when using a language with reference to a picture or a picture combination (Shirban, 2004a, 2004b, 2004c, 2005, 2006).

Schema: A mental structure or frame which represents some aspects of the world. (Athey, 1970; Elkind, 1976; Furth, 1970; Gorman, 1972; Wadsworth, 1978; Yule, 1985).

Students’ Opinion: In this study means the way learners view all the teaching/learning procedures. If they have positive opinion towards the method, it means they can enjoy and benefit from it. In other words, they will be motivated and positively stimulated.

The 6th Sense: This notion is used in PLS quite differently. Since in this method there is too much emphasis on using the five senses (e.g. sight, hearing, smell, taste, and touch), and also because these physical senses are expected to be integrated and juxtaposed with what we (teachers as well as students) are able to do with the power of our imagination; thus, the practitioners of PLS call “imagination” “the Sixth Sense” (Shirban, 2004b).

Vocabulary: According to the Oxford Advanced Learner's Dictionary (1990), "vocabulary" means "total number of words which (with rules of combining them) make up a language." In one typology, these words can be divided into several categories named as parts of speech. The most important parts of speech are: nouns, verbs, adjectives, adverbs, prepositions, pronouns, articles, and interjections.

1.10 Conclusion

Regarding the current study, if we just consider each single word of any language as a ring which eventually - and together with other single words of course - constitutes the string of structures, then we will see that it would be quite useful if somebody tries to enrich his/her vocabulary in the best manner. On the other hand, and particularly when younger students or elementary-level language learners are concerned, vocabulary becomes the corner stone, since they are not expected to comprehend or produce more complex structures. Malaysian primary school students have, at least to some extent, good access to English. Radio, TV, mass media, etc. are there to provide them with a good quantity of intake. However, are these students good producers of language as well? Is there a good adaptor to provide them with the necessary information among all they are exposed to? Are there any means to stimulate their critical thinking power? Then, what will happen to the individual differences? Can the students gain a good pronunciation and accent, as well as a general view of the differences and similarities between their mother tongue and the English language? The researcher believes that the

best way is the safest way, and the safest way for a beginner is to start with the primary English vocabulary and structures. Thus, this study has aimed at finding out a feasible way based on the PLS method to teach good portions of needed vocabulary to the Malaysian Year Six students.

Chapter 2: Review of Related Literature

2.1. Introduction

Thousands of years ago, Plato was the first to declare the ‘Super-sensory world of ideas’, that is to say, what we can perceive in this world is just a copy of a copy, or an imitation of imitation of what actually exists in another world (or perhaps our mind). For Plato, the mind is an immortal soul, the realm of all reason (Plato, 1961). The soul, however, inhabits a body that is tied to a sensory and therefore, unreliable world. Plato’s philosophy focuses on the nature of rational thought. In his *Myth of the Cave*, Plato fantasizes the philosopher’s journey from living among the shadowy images of the world to experiencing the renewed clarity from the realm of true ideas. Through a series of dialogues, Plato argues that the world is shaped by ideas perceivable by the mind.

Reality for Plato is located in eternal and immutable ideas that are directly present in the mind. Plato compared mental images generated through sensory perception to the impressions of a signet ring on a wax tablet (Paivio, 1971). In his view, images were imperfect and insignificant copies of pure forms. Plato establishes a hierarchy of reality in which ideas are considered superior in their degree of being to physical objects and physical objects as being superior to images. In poetry, as in all things, Plato was concerned with the ontology of the object—the degree to which the images evoked by the poem could approach the metaphysical reality of pure reason.

It was not until centuries later when Immanuel Kant (1724 -1804) introduced the word “schema” to the world. However, the concept had to wait until many years later in the beginning of the 20th century.

2.2 Theories of cognitive development

2.2.1 Jean Piaget’s theory of cognitive development

Jean Piaget (1896-1980), professor of psychology at the University of Geneva, studied the thought processes of children and young adults for over 60 years. His approach was qualitative as distinguished from the quantitative approach of the American developmental psychologists before 1960. More specifically, he studied children’s mental development using the half-experiment, half-interview “clinical” method which was different from the quantitative approach that uses general intelligence or multiple aptitude tests. His approach gets at the kinds of operations and characteristics of thought process at different levels; whereas, the psychometric or intelligence test approach shows mainly that as children get older they are able to answer more questions on a test (Gorman, 1972). To Piaget, the processes children underwent in arriving at their answers in school tests- especially the incorrect answers- were much more important than the scores themselves (Piaget, 1977). Maybe there is no one in the history of psychology who has studied children more extensively than Jean Piaget. He has studied the development of their basic ways of thinking as well as their concepts of number, time, space, physical causality, life, morality, language, etc. (Gorman, 1972).

According to Gardner (1982), Piaget's work is absolutely fundamental to any study of children and their minds. This is true even if we do not completely agree with his developmental perspective, even if we do not share his convictions that each stage represents a qualitatively different way of thinking about the world, indeed of thinking altogether, or that each stage follows logically after its antecedent, in turn becoming the necessary ingredient for progress to subsequent stages. Gardner further acknowledges, "To conduct research in the area of developmental psychology without knowing about Piaget is about as sensible as pursuing biological studies without taking note of recent developments in genetics and molecular biology, or of pursuing physics while ignoring Einstein's conceptual breakthroughs," (p. 210).

As far as children's cognitive development stages are concerned and as Lansing (1969) has explained, Piaget has postulated three major stages in the children's cognitive development: the *sensorimotor period*, the *concrete operations period*, and the *period of formal operations*. Lansing further explains that the first stage lasts from birth to about the age of two. It involves a perceptual and motor adjustment to the world, yet it does not engage drawing or visual symbolic manipulation of any kind. The first spatial relationships that children comprehend perceptually, are topological in nature. That is to say, they can detect relationships of proximity, separation, order, enclosure, and continuity before they can see other spatial characteristics. *Proximity* means to see how close objects are to each other within the perceptual field. On the other hand, when children detect *separation*, they do not see the objects as a whole unit; whereas, they perceive them as being distinct and separate. Then, *order* means that children see things that appear in succession, such as the beads on a playpen. Being able