Exploring Primary School Teachers' Language of Thinking: A Case Study

Bahasa Berfikir Guru Sekolah Rendah: Satu Kajian Kes

Wan Mazwati Wan Yusoff,[*] Shamilati Che Seman,[**]
and Rahimah Embong[***]

Abstract

The aspiration of Malaysian education system as mentioned in the Malaysia Education Blueprint 2013-2025 is to produce students who are highly critical and creative. Since teaching for higher order thinking was made explicit since 1989, a systematic evaluation of the adequacy and pitfalls of teaching for thinking programs was not done extensively. If examination result is the yard stick to measure the impact of teaching for thinking, then it can be concluded that 2016 UPSR result painted a dismal picture of failure in teaching for thinking. Studies showed that there is a positive correlation between language teacher used to communicate in the classroom and the development of thinking dispositions among students. Using the framework of language of thinking put forward by Costa and Marzano (2001), this study was conducted to explore language of thinking used by teachers during teaching and learning sessions in several primary school classrooms. This preliminary study attempted to gain in-depth understanding of the phenomenon in the actual setting so that the insight can illustrate a wider picture of the issue. This exploratory case study employed structured observations to collect data in the classroom of nine primary school teachers. The data was analysed based on theoretical proposition by Costa and Marzano. Findings revealed that teachers needed to improve their language of thinking.

Keywords: Thinking skills, language of thinking, teaching for thinking, higher order thinking.

Abstrak

Aspirasi pendidikan Malaysia sebagaimana yang disebut dalam Pelan Pembangunan Pendidikan Malaysia 2013-2025 adalah untuk melahirkan pelajar yang berupaya berfikir secara kritis dan kreatif. Semenjak kemahiran berfikir pada aras tinggi

[*] Assistant Professor, International Islamic University Malaysia, email: wanmazwati@iium.edu.my

[**] Assistant Professor, Institut Penyelidikan Produk dan Tamadun Islam (INSPIRE), University Sultan Zainal Abidin (UniSZA), email: Shamilati.amran7175@gmail.com

[***] Assistant Professor, Institut Penyelidikan Produk dan Tamadun Islam (INSPIRE), University Sultan Zainal Abidin (UniSZA), email: rahimahembong@unisza.edu.my

disebut secara eksplisit dalam kurikulum sekolah menengah dan rendah dari tahun 1989 lagi, satu penilaian yang sistematik terhadap kejayaan dan kelemahan pengajaran untuk kemahiran berfikir tidak dibuat secara meluas dan menyeluruh. Jika keputusan peperiksaan dijadikan kayu ukur untuk mengukur keberkesanan pengajaran untuk berfikir, keputusan peperiksaan UPSR 2016 melukis gambaran kegagalan projek mengajar untuk kemahiran berfikir aras tinggi yang menyedihkan. Kajian menunjukkan ada perkaitan positif antara Bahasa yang digunakan oleh guru ketika berkomunikasi dalam bilik darjah dengan perkembangan disposisi berfikir dikalangan pelajar. Disposisi berfikir pula berkait langsung dengan tabiat berfikir dan kemahiran berfikir aras tinggi. Kajian ini bertujuan untuk meneroka Bahasa berfikir yang digunakan oleh guru dalam proses pengajaran dan pembelajaran di sekolah rendah. Bahasa berfikir yang diterangkan oleh Costa dan Marzano (2001) digunakan sebagai kerangka teori kajian ini. Kajian ini cuba untuk meneroka amalan berbahasa guru untuk memahami fenomena ini dalam situasi sebenar supaya hasilnya dapat memberi gambaran luas terhadap isu ini. Kajian kes eksplorasi ini menggunakan pemerhatian secara berstruktur untuk mengumpul data. Sembilan orang guru sekolah rendah terlibat dalam kajian ini. Data telah dianalisis menggunakan toeri Bahasa berfikir Costa dan Marzano. Dapatan kajian ini menunjukkan guru perlu menambahbaik Bahasa berfikir yang mereka gunakan semasa berkomunikasi dalam bilik darjah supaya aspirasi melahirkan pelajar berkemahiran berfikir aras tinggi dapat dicapai.

Kata Kunci: Kemahiran berfikir, bahasa berfikir, mengajar untuk berfikir, berfikir aras tinggi.

Introduction

Human being is endowed with a vital spiritual (immaterial) organ that is capable of conceptualizing and retaining meanings which enable him or her to attain knowledge requisite for the success of his life in the ephemeral and eternal world. It is *ʿaql* which has the potential for conceptual thinking[1] and it is the highest faculty of human, which makes him or her capable of achieving the highest of the human potential. Compared to animals, human is weaker for he or she has significantly lower physical strengths and abilities than animal; but *ʿaql* or

Rational soul in man abounds in marvels, both in knowledge and power. By means of it he masters arts and sciences, can pass in a flash from earth to heaven and back again, can map out the skies and measure

*Assistant Professor, International Islamic University Malaysia, email: wanmazwati@iium.edu.my
**Assistant Professor, Institut Penyelidikan Produk dan Tamadun Islam (INSPIRE), University Sultan Zainal Abidin (UniSZA), email: Shamilati.amran7175@gmail.com
*** Assistant Professor, Institut Penyelidikan Produk dan Tamadun Islam (INSPIRE), University Sultan Zainal Abidin (UniSZA), email: rahimahembong@unisza.edu.my

[1] Muhammad Asad, *The Message of the Qur'an: Translated and Explained* (Gibraltar: Dar al-Andalus, 1980).

the distance between them…can draw the fish from the sea and birds from the air, and can subdue to his services animals, like elephant, camel and horse.[2]

However, human is not born with innate ability to be highly critical and creative. Thinking is a skill which means that human can be trained to be very skillful in thinking and this thinking skills can be improved with practice. Since the time of Plato until the present, developing and improving thinking ability is one of the aims of education. Cognitive ability and thinking skills is the prequisite to achieve wisdom which is the highest achievement of human potential. Realizing that thinking could not be developed implicitly through subject content in schools, teaching for developing thinking skills has been made explicit in the curriculum of Malaysian education since 1989 to emphasize on "how" instead of "what". Furthermore, higher order thinking questions or open response questions have started to replace questions to assess memorization and knowledge in all levels of school national examination namely UPSR (primary school level), PMR (lower secondary school level) and SPM (higher secondary school level)[3]. Teaching for developing students who are excellent in critical and creative thinking is one of the aspiration of 2013-2025 Education Blueprint of Malaysia.[4]

Teaching for higher order thinking (HOT) has been implemented formally in Malaysian schools since the last few decades; and the components of explicit teaching for higher order thinking skills started to become prominent in the curriculum since then.[5] Beginning 2016, 50% of the questions asked in UPSR examination, 80% in PT3 examination, 75% of SPM examination on core subjects, and 50% on elective subjects

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[2] Al-Ghazali, Wonders of the Heart (Kuala Lumpur: Islamic Book Trust, 2007), 8.

[3] Lembaga Peperiksaan Malaysia, *Pentaksiran Kemahiran Berfikir Aras Tinggi* (Putrajaya: KPM, 2013), 168.; S. Supramani, "Penyoalan Guru: Pemangkin Pemikiran Aras tinggi Murid," *Jurnal Pendidikan*, (2006): 225–247.

[4] Malaysia Education Blueprint 2013-2025 (Putrajaya: KPM, 2013), 16.

[5] Caroline David and Abdul Said Ambotang, *Profesionalisme Guru Novis Dalam Pengurusan Pengetahuan, Kesediaan Mengajar Dan Kemahiran Berfikir Aras Tinggi (KBAT) Terhadap Pelaksanaan Pengajaran di Sekolah* (Seminar Kebangsaan Integriti Keluarga, 2014).; Sukiman Saad, Noor Shah Saad and Mohd Uzi Dollah, "Pengajaran Kemahiran Berfikir: Persepsi dan Amalan Guru Matematik Semasa Pengajaran dan Pembelajaran di Bilik Darjah," *Jurnal Pendidikan Sains & Matematik* 2, no. 1 (2013): 18–36.; Abu Bakar Nordin, "Kurikulum ke Arah Penghasilan Kemahiran Berfikiran Kritis, Kreatif dan Inovatif," *Jurnal Kurikulum dan Pengajaran Asia Pasifik* 1, no. 1 (2013): 10-18.

are to assess higher order thinking. This requires teachers to change their teaching practices to focus more on teaching for HOT. Moreover, teachers have to prepare students to identify HOT verbs so that they would be able to answer UPSR examination well beginning 2016.[6] Failure to identify HOT verbs in each question means failure to answer HOT questions. This type of questions are to be implemented to measure students' peformances in all school based assessment as well.[7]

However, implementing teaching for higher order thinking is challenging; and so far the success rate measured by students' performance in answering HOT questions was shameful.[8] The overall UPSR 2014 examination result declined by 0.02 GPN (National Grade Average) from 2013 result. Candidates who obtained straight A grade in UPSR in 2014 was 36,304 whereas 42, 646 students obtained all A in 2013. This means that students' performance had declined by 1.26%.[9] One of the factors contributing to the decline in students' performance was because of examination questions for science subject were difficult.

Preliminary analysis showed that questions for science subject were higher order thinking questions; and students were not able to answer HOT questions well. One reason for the decline in students' performance was students were not familiar with and not ready to answer HOT questions. It is also safe to conclude that teachers were not well prepared in teaching for higher order thinking.[10] Even though students performance were poor, the Ministry of Education decided to continue with teaching for higher order thinking program. In 2016, 50% of UPSR examination questions for all five subjects were higher order thinking questions. Majority of Malaysian public were shocked with the UPSR examination result. Only 4896 students obtained all As in UPSR examination which was 1.11% of the total candidates. This means that students' higher order thinking ability needed a lot of improvement. One

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[6] Lembaga Peperiksaan Negara, "*Pentaksiran,"* 168.

[7] Kementerian Pendidikan Malaysia, *Pentaksiran kemahiran berfikir aras tinggi* (Melaka: Surya Sdn. Bhd, 2013).

[8] Ibid.

[9] Ministry of Education, *Malaysia Educational Statistics* (Putrajaya: Ministry of Education, 2015), 29.

[10] Zulkarami Mohd Johan, "*Pelaksanaan Kemahiran Berfikir Secara Kreatif dalam Pengajaran di Institut Perguruan Tawau, Sabah*" (master's thesis, Universiti Teknologi Malaysia, 2011).; Heong, Y. M., Jailani MD Yunos, Widad Othman, Razali Hasso, Tee Tze Kiong, Mimi Mohaffyza Mohammad, "The needed analysis of learning higher order thinking skills for generating ideas," *Procedia-Social and Behavior Sciences* 59, (2012): 197-2013.

of the factors for such poor performance were teachers' knowledge, skill and efficacy in teaching for higher order thinking[11].

Status of Teaching for Thinking

Ministry of Education has introduced and implemented various transformation and innovation programs to equip teachers to develop and improve cognitive ability among students. However, studies have shown that teachers failed to improve students' higher order thinking skills.[12] Teachers put less emphasis on teaching for thinking; and specifically teaching for higher order thinking was still wanting.[13] Moreover, resource materials used in teaching and learning session were not directed towards developing higher order thinking and activities planned and implemented during teaching and learning process did not involve metacognition process.[14] Sadly, classroom activities invloved only lower level thinking; and thus higher taxonomy was not even reached.[15]

Studies also revealed that most teachers had minimal understanding on the concept of higher order thinking, did not know how to teach for higher order thinking and some of them were reluctant to do

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[11] Rosnani Hashim and Suhailah Hussein, *The Teaching of Thinking in Malaysia* (Kuala Lumpur: IIUM Press, 2003).

[12] Mohamad Mohsin Mohamad Said and Nasruddin Yunos, "Peranan Guru Dalam Memupuk Kreativiti Pelajar," *Jurnal Pengajian Umum*, 9 (2005): 57–72.; Balakrishnan a/l Govinthasamy, "*Penilaian pelaksanaan kemahiran berfikir secara kreatif dan kritis (KBKK) dalam mata pelajaran Sejarah KBSM tingkatan 4: Satu kajian kes di Daerah Tampin dan Rembau Negeri Sembilan*" (master's thesis, Universiti Kebangsaan Malaysia, 2002).; Idris Aman, "*Analisis Wacana Pedagogi di Sekolah: Satu Kajian Kes*" (Laporan Teknik Penyelidikan SK/4, Universiti Kebangsaan Malaysia, 2002).; M. K. Hamza and V. Farrow, "Fostering Creativity and Problem Solving in the Classroom," *Kappa Delta Pi Record* 37, no. 1 (2000): 33-35.

[13] W. S. Toh, "Student-Centered Educational Beliefs and Teacher Education," *Jurnal Pendidikan MPBI* 4, (2003): 20-22; Balakrishnan a/l Govinthasamy, "*Penilaian pelaksanaan kemahiran berfikir secara kreatif dan kritis (KBKK)"*.; Rajendran, *Teaching and Acquiring Higher-order Thinking Skills: Theory and Practice* (Tanjong Malim: Penerbit Universiti Pendidikan Sultan Idris, 2008).

[14] A. K. Ng, *Liberating the creative spirit in Asian students* (Singapore: Prentice Hall, 2004).; Idris Aman, "*Analisis Wacana Pedagogi di Sekolah"*.

[15] Najeemah Mohd Yusof, *Penggabung Jalinan dan Penyerapan dalam Pengajaran aan Pembelajaran Pensyarah untuk Melahirkan Modal Insan Di IPTA*, Persidangan Pengajaran dan Pembelajaran Di Peringkat Pengajian Tinggi (Kuala Lumpur: Universiti Putra Malaysia, 2007), 33-40.

so.[16] These findings were similar to the findings of a study done by Rosnani Hashim and Suhailah Hussein.[17] This means that after a decade of trying to implement teaching for higher order thinking, we still failed to teach for thinking. Reasons stated by researchers were teachers were not confident to teach for higher order thinking;[18] teachers were not familiar with higher order thinking processes and skills;[19] teachers focused more on completing the syllabus to prepare students for centralized national examination, therefore less time were allocated to teaching for higher order thinking.[20] The same study also indicated that teachers frequently asked questions to assess memorization of facts which would not require students to use higher order thinking skills.

The success of teaching for thinking depended largely on teacher factor. Teachers make or break the curriculum.[21] Teacher behaviors and language used in the classroom influenced students' learning and behaviors. Many studies concluded similar findings that teacher behavior influenced students' achievement, self concept, social interaction and cognitive ability.[22] There is a maxim that says we cannot

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[16] Zulkaramai Mohd Johan, "*Pelaksanaan Kemahiran Berfikir Secara Kreatif"*, (2011).; Tee Tze Keong, Mohamed Nor Azhari Azman, Jailani Md Yunos, Yee, M. H., Mimi Mohaffyza Mohamad, Baharom Mohamad and Widad Othman, "The Development and Evaluation of The Qualities of Thinking Skills Module," *Journal of Technical Education and Training* (JTET) 5, no. 1 (2013): 52-67.; Sukiman Saad, Noor Shah Saad and Mohd Uzi Dollah, "Pengajaran Kemahiran Berfikir," 18–36.; Nur Aisyah Mohamad and Zamri Mahamod, "Tahap kemahiran metakognitif tingkatan empat dalam pembelajaran Bahasa Melayu," *Jurnal Pendidikan Bahasa Melayu* 4, no. 1 (2014): 41-47.

[17] Rosnani Hashim and Suhailah Hussein, *The Teaching of Thinking in Malaysia.*

[18] Rajendran, *Teaching and Acquiring Higher-order Thinking Skills.*

[19] Rosnani Hashim and Suhailah Hussein, *The Teaching of Thinking in Malaysia.*

[20] Sukiman Saad, Noor Shah Saad and Mohd Uzi Dollah, "Pengajaran Kemahiran Berfikir," 18–36

[21] A. L. Costa, *Habits of mind* (Virginia USA: ASCD, 2001).; ------ "Teaching for, of and about Thinking," in *Developing minds: A Resource Book for Teaching Thinking*, ed., A. L. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 2001a), 354-357.; ------ "Teacher Behaviors that Enable Student Thinking," in *Developing minds: A Resource Book for Teaching Thinking*, ed., A. L. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 2001b), 359-369.

[22] T. K. Dunn, "Mathematics Teaching and Learning in an Alternative High School Program: A Qualitative Study of Pre-Service Teachers and Learners" (PhD diss. Washington State University, 1998).; J. Thibeault, "The Relationship Between Student Teachers and Cooperating Teachers as a Foundation for The Development of Reflective Thinking: An Exploratory Study Based on Student Teachers' Perceptions" (PhD diss. McGill University, 2004).; K. M. Tyler, "A Descriptive Study of Teacher Perceptions of

give what we do not have. For teachers to be skillful in teaching for thinking, the teachers themselves should be very critical and creative. However, to train teachers to have high cognitive ability and to be skillful in developing students' higher order thinking requires a lot of investment in terms of time and resources. But we should not depair for studies have shown that there is positive correlation between language used by teachers and development of thinking in students.[23] Therefore, the quicker way is to develop language of thinking among teachers.

Before considering to make an investment in developing teachers' langauge of thinking, preliminary studies to explore the current practices in classroom should be conducted so that an informed decision could be made. Therefore, this study was done to explore the application of language of teaching in the actual setting. The present study attempted to provide comprehensive understanding of a small fraction of a bigger issue of teaching for thinking which has been haunting the education system for decades. The insight gained in this study is significant for the policy makers to make necessary decision for the improvement of teacher knowledge, skills and practices with respect to teaching for thinking. This exploratory study also made available valuable information and knowledge for further research.

Language of Thinking

Words are the basic units used for thinking. Even to explain the meaning of thinking, we need to find words and arrange those words in a meaningful sentence. Vygotsky[24] emphasizes the importance of language in the development of the intellect and posits that language is the foundation of teaching thinking. He describes how language naturally "taught" at home and in the community. He further explains that teachers' instructions should be focused on assisting and supporting students to move from one area of development to another area of development. Teachers' role, among others, is to continuously challenge their students to develop students' understanding so that they finally

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Self-Efficacy and Differentiated Classroom Behaviors in Working with Gifted Learners in Title I Heterogeneous Classrooms" (PhD diss. The College of William and Mary, 2006).

[23] S. Tishman and D. N. Perkins, "The language of thinking," *Phi Delta Kappan* 78, no. 5 (1997): 368-374.

[24] Vygotsky, "Mind in society," in *Developing minds: A resource book for teaching thinking,* ed., A. L. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 1978), 144-149.

could function independently. In this context, it is vital for teachers to use correct language during teaching and learning sessions to help students develop meanings, concepts, problem solving, and to coming up with various central and creative ideas.[25]

Piaget[26] asserts that to develop thinking, one has to develop the language of thinking first. Children learn language through interpreting and translating thinking (assumption, disposition and natural disposition) into words. He emphasizes that teachers should teach by encouraging students to explore and discover; to classify and name the concepts that they found.[27] Moreover, Piaget had proven that children learn to speak on their own initiatives and curiosities without formal teaching if they were in the enviornment that is rich in language. What is more, children acquire more than 5000 vocabularies and internalize primary grammar rules at the age between three to four years. Similarly, psychologists such as Brunner, Kozulin dan Vygotsky[28] believe that thinking process should be developed as names and language concepts. Vygotsky explains that thinking can be sharpened through the use of specific and patterned language since the degree and direction of thinking is correlated to the depth and breadth of language development. Therefore, when teachers teach from this perspective, they could develop thinking and language simultaneously. This way, teachers assist students to translate ideas, feelings and experiences into language when images appear in their minds. At the same time, the precise and specific interpretation is determined by the depth and correctness of thinking.

Language functions as a tool of communication which can be employed by everybody at any place and any time without needing for planning. However, different context requires the use of different language and vocabulary. To develop higher order thinking, teachers

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[25] C. Goldberg, *Instructional Conversation and Their Classroom Application* (Santa Cruz, CA: National Centre for Research on Cultural Diversity and Second Language Learning, 1991).; R. G. Tharp and R. Gallimore, *Rousing Minds to life: Teaching, Learning, and Schooling in Social Context* (Cambridge: Cambridge University Press, 1988).; W. W. Wilen, "Thinking Skills Instruction," in *Crucial Issues in Social Studies, K-12,* ed., B. Massialas and R. Allen (Belmont, California: Wadsworth Publishing, 1994).

[26] J. Piaget, "Piaget's theory," in *Developing minds: A resource book for teaching thinking,* ed., L. A. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 1970), 144-149.

[27] N. S. Rajendran, *Teaching and Acquiring Higher-order Thinking Skills: Theory and Practice* (Perak: Universiti Pendidikan Sultan Idris, 2013).

[28] Vygotsky, "Mind in society," 144-149.

should at least understand the concept of thinking and language of thinking used during teaching and learning sessions. For instance, when the objective of teaching and learning is to enable students to think critically, they have to explore ideas; form concepts and make generalizations; to solve problems and develop meanings. Therefore, to be effective, the language used cannot be without proper planning.[29]

Language is the medium of communication between teacher and students and students and students during teaching and learning sessions. Lessons are delivered through language and students' achievement is measured and communicated through language. Language is the most vital tool for daily interaction, communication and activities in classrooms. Therefore, language is the tool for teachers to improve students' cognitive development. If teacher is the main agent to develop and deliver a successful program of teaching for thinking, then teacher should develop his or her language of thinking. Therefore, among the important roles of teachers is to become the medium through whom students experience learning and develop their cognitive ability.[30] Language used by teacher is the framework within which lessons are delivered, tasks are planned for students, rules for behaviors are outlined.[31] In other words, teacher uses language to tell students what they have to do, when they have to do it, and how they supposed to behave while they are doing what they supposed to do. Hence, language helps to create classroom culture which is agreed and shared by the classroom community. This classroom culture is the key to teaching effectively and it thrives through language.[32] To create a culture of thinking, teacher has to use language of thinking.

Since language of thinking is vital to create thinking classroom culture, then knowing and understanding meanings of language of

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[29] C. Goldberg, *Instructional Conversation and Their Classroom Application*.

[30] R. Feuerstein, Y. M. Rand, M. B. Hoffman and R. Miller, "Instrumental enrichment: An intervention program for cognitive modifiability," in *Developing minds: A resource book for teaching thinking*, ed., A. L. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 1980), 80-85.

[31] S. Tishman and D. N. Perkins, "The language of thinking," 368-374.

[32] R. J. Parelius, *Faculty cultures and instructional practices* (New Brunswick, NJ: Rutgers University Press, 1980).; S. C. Purkey and M. S. Smith, *Effective School: A Review* (Madison: Wisconsin Center for Educational Research, University of Wisconsin, 1982).

thinking is also critical. Costa and Marzano[33] developed seven components of language of thinking that can be used to create culture of thinking in a classroom. The ccomponents are correct use of terminologies, asking critical questions, providing information not solutions, giving instruction, dealing with specification not generalization, developing metacognition, and analyzing language logic.

Use Correct Terminology

Teachers often advice their students to think hard and they frequently criticize their students for not having thinking disposition.[34] However, teachers fail to realize that their advice and criticism is too ambiguous for students to understand. One of the reasons why students fail to think is they lack language of thinking since teachers do not explicitly use thingking words. Therefore, teacher should use the correct terminologies for thinking and demonstrate how students should apply the thinking words. For example, teacher commonly instructs students to perform a task by saying, "Let's look at the two pictures." This instruction is too vague that students probably just look at the pictures and wait for another instruction by the teacher. It is more accurate to say, "Let's compare these two pictures," and then show the students how to look for similarities between the pictures.

Table 1: Correct Terminology

Teacher usually says...	**More acurate to say...**
Lets look at the two pictures.	Lets compare the two pictures.
What will happen when ...?	What do you predict to happen when...?
Which group would you put this ...?	How do you classify this...?
Let's look at this problem.	Let's analyze this problem.
What do you think will happen...?	What do you speculate to happen...?
What do you think about this sto-ry?	What is your conclusion from the story?
How do you explain...?	What is your hypothesis about

[33] A. L. Costa and R. J. Marzano, "Teaching the language of thinking," in *Developing minds: A resource book for teaching thinking*, ed., A. L. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 2001), 379-382.
[34] Ibid.

	this...?
How do you know that this is true?	What re the evidences to support this...?
How can you use this...?	How do you apply this...?

When students hear these thinking terminologies everyday and develop the cognitive processes (that refer to the corresponding terminologies), they would be able to internalize the words and use them as part of their vocabularies. Moreover, teacher could give specific instructions in thinking process so that students could attach other words that share the same meanings with the thinking terminologies.[35] For instance, teacher explains to students the process that happens in the mind when they were doing the comparison activities; the steps that they should make in making decision; and the techniques that students could apply so that creative juice could flow steadily while writing fictional story.

Asking Critical Questions

One of teacher's responsiblities is to manage classroom misbehaviors. It is common for teachers to command students not to do something such as "Don't make noise". This command would not encourage students to think because they were not given any alternative and they would not reflect on the consequences of their action. However, students would be able to reflect on their actions, think of the consequences of their actions to all parties involved and to choose alternative actions[36] when teacher tells exactly the impact of their action; and when teacher asks them to find alternative ways of doing things that would not interrupt others.

[35] B. K. Beyer, "Practical strategies for the direct teaching of thinking skills," in *Developing minds: A resource book for teaching thinking*, ed., A. L. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 1985), 379-382.

[36] R. Bailis and M. Hunter, "Do your words get them to think?," in *Developing minds: A resource book for teaching thinking*, ed., A. L. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 1985).

Table 2: Questions that encourage appropriate behaviors

Teacher commonly says...	**More accurate to say...**
Don't make noise.	You interrupt us with the noises that you make. Are there ways you can think of so that we will not be interrupted by your noises.
Ali, go away from Samy.	Ali, could you find another place to do your task better?
Stop disrupting.	Since this is Ani's turn to speak, what do you have to do?
Stop Running.	Why do you think we have rules to always walk in the hall?

Provide Information not Solutions

It is common practice that teachers deny the opportunities for students to take responsibilities for their own actions by providing them solutions and telling them the impact of their actions; and how to behave. Whereas, teacher could teach them to be responsible by giving them information and sending "I" message (refer to Table 3). By giving information for students to process, teacher encourages them to make autonomuos decision of how to act; to be sensitive to the impact of their behavior on others; and to be more emphatic when they detect verbal and non-verbal cues from others.

Table 3: Information to make autonomous decision

When children...	**More accurate to say...**
Make noise by knocking their desks with their pencils.	I want you to know that knocking your pencil on your desk is bothering me.
Cutting while other is speaking.	I like it if you wait for your turn to speak.
Whining.	Your whining hurts my ears.
Polite.	I like it when you move quietly and politely to do your activities.
Chew gum.	I want you to know that chewing gum in class is bothering me.

Giving Instruction

Teachers often provide detailed instructions of what students should do and provide detailed information of what students need. This way of giving instruction robbed the opportunities for students to think and make their own conclusion. In contrast, teachers could ask questions that require students to analyze their tasks, identify things that they need to complete their tasks and then complete the given tasks.

Table 4: Instruction to teach meaning

Teacher commonly says...	**More accurate to say...**
For the field trip, don't forget to bring some money, shoes and jacket.	What do you must remember to bring for the field trip?
The bell has rung; it is time to go home. Empty your desks silently and queue at the door.	The bell has rung. What do you have to do to prepare for going home?
Get 52 cups, 26 pairs of scissors and 78 pieces of paper to cover the desks.	Each of you needs 2 paper cups, a pair of scissors, and 3 pieces of papers. The top of your desks must be protected. What do you need to do?
Don't forget to write your name at the right top corner of your paper.	What do you have to do to easily indentify the owner of the paper?

Dealing with Specification

Oral language is impregnated with meanings, ambiguities and generalization. It is from operational concept; value laden; and sometimes misleading and confusing. To encourage thinking carefully and precisely, teachers should provide opportunities for and encourage students to define terms that they used; clarify their actions; to make correct comparison; and to use precise descriptors.[37] Teachers should be careful with ambiguous terms or unstated terms, which are classified into several categories:

a) Universal, includes always, never, all, every person.

[37] G. Laborde, "Influencing with integrity," in *Developing minds: A resource book for teaching thinking*, ed., A. L. Costa (Alexandria, VA: Association for Supervision and Curriculum Development, 1984).

b) Ambiguous actions such as know about, understood, appreciate.
c) Comparison such as better than, never, cheaper, more nutricious.
d) Pronouns that do not refer to anybody or anything such as they, we.
e) Group that is not stated such as teachers, parents, something.
f) Rules or customs that are assumed such as should, need, have to.

A Good thinker is characterized by having the ability to use precise terms and concepts to avoid from making hasty or over generalization; and to support their assumptions with data and concrete evidences[38].

Table 5 : Avoid Generalization

When teacher hears...	**More accurate to say...**
He never listen to me.	Never? Not even once?
Each has one.	Each person? Who, to be exact?
Something is better than...	Which situation specifically?
Something is better than...	To go? How specifically?
Something is better than...	Better than what?
You don't have to do that...	What would happen if you do that?
Parents...	Whose parents?
I want them to understand...	What would they do if they understand?
This cereal is more nutricious.	More nutricious than what?
They would not abandon me...	Who are they?
The administrators...	Which administrators?

[38] R. H. Ennis, "A logical basic for measuring thinking skills," *Educational Leadership* 43, no. 2 (1985): 46.

Develop Metacognition

Thinking about thinking promotes more and better thinking.[39] Therefore, when teacher asks students to explain or illustrate the process of thinking that they used, they need information, they conclude their plans, and learn to think about their own thinking (metacognition) which is also refered to as "*talk aloud problem solving*."[40]

Table 6 : Thinking about thinking

When students say...	Teacher says...
The answer is 43 kg 7 g.	Explain the steps you have taken to get the answer.
I don't know how to solve this problem.	What can you do to begin...?
I am ready to start...	Explain your action plan?
We have memorized our poem.	What did you do to memorize?
I like the big one.	What criteria do you use to make the choice?
I have done.	How do you know that your answer is correct?

Students need to illustrate the processes that are happening in their mind for them to realize their own thinking process; develop flexibility in their thinking; to discover various ways of solving problems by listening to their friends' explanation of their own metacognition processes. Besides, teachers could model the process of metacognition by questioning the ways they solve their problems; sharing lesson plans; and sharing thinking by making their internal dialogues external.[41]

Analyzing Logic of Language

Higher order thinking can be developed by involving students to analyze the logic in linguistic expressions. Words and phrases such as linguistic cues/signals indicate logical relationships between ideas.

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[39] A. L. Costa, *Habits of mind*.

[40] A. Whimbey, "Students can learn to be better problem solvers," *Educational Leadership* 38, no. 8 (1985): 560-565.

[41] A. L. Costa and R. J. Marzano, "Teaching the language of thinking,".

Table 7 : Linguistic cue

Relationship	**Explanation**	**Examples of linguistic cue**
Addition (to say more)	Two ideas used together in various ways.	She is smart and kind.
Comparison	Sharing same characterisitics.	Both Siti and Sarah play the violin.
Contrast	Two contrasting ideas.	He is healthy, but he does not exercise regularly.
Sequence	An event that happens before, during or after another event.	He went home, then he went to the library to check few books and then he went back to school.
Cause and effect	A thing occured as an effect of something that happened.	Since there is nobody at home, he goes to the gymnasium.

Hence, by examining these linguistic cues (and, or, but, after, because), students may learn to identify related ideas in a sentence full of ideas (linguistic cues to identify other ideas are besides, comparison, contrast, sequence, and cause and effect).

Research Methodology

The research method employed to conduct this study was case study method which is "as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used."[42] Specifically, the qualitative research method used in this study was exploratory case study. Exploratory case study was applied to gain an in-depth understanding of a problem within its own context without the need to control the actual behavior. It aimed at understanding the problem investigated in order to help understand the wider issue.[43] For this case study, the researchers at-

[42] R. K. Yin, *Case Study Research: Design and Methods*, 4th ed. (Thousand Oaks, California: Sage Publications, 2009), 18.
[43] R. E. Stake, *The Art of Case Study Research* (Thousand Oaks, CA: Sage Publications, 1995).

tempted to describe a specific behavior, which is teachers' application of language of thinking, within an actual classroom context in order to have a glimpse of understanding of wider issue of how teachers teach for higher order thinking. However, the findings of this study are not being generalized to the whole primary schools. The study used the seven components of language of thinking developed by Costa and Marzano[44] to guide the researchers in data collection.

The participants for this research were nine teachers who were teaching at a primary school in Kuala Terengganu, Malaysia. They were three Malay language teachers, three science teachers, and three mathematic teachers. The study needed to gather information of the language used during teaching and learning sessions to discover whether language of thinking was employed to communicate with students. Therefore, the most appropriate method of data collection was observation of teachers while they were teaching. Each teacher was observed four times to ensure that the data collected was validly representing the teachers' behavior while teaching. Observation checklist with the items representing the seven components of language of thinking was used during observations. Adding onto this, the researcher recorded the learning sessions in order to cross-check the observation checklist. The data was analyzed based on theoretical proposition by Costa and Marzano.[45]

Findings

Table 8 shows the frequency of using language of thinking during teaching and learning sessions. Analysis of the data from observation during teaching and learning sessions revealed that teachers used correct terminologies, asked critical questions to reflect on behaviors, gave instructions to teach meanings, developed students' metacognition and used language logic not so often but more than sometimes.

[44] A. L. Costa and R. J. Marzano, "Teaching the language of thinking,".
[45] A. L. Costa and R. J. Marzano, "Teaching the language of thinking,".

Table 8 : Findings

Language of thinking	Frequency of usage					
	Never	Seldom	Several times	Less than often	Often	Always
Correct Terminology				■		
Critical Questions				■		
Providing Information			■			
Giving Instruction				■		
Dealing with Specification	■					
Developing Metacognition				■		
Analyzing Logic of Language				■		

Only Science teachers used correct terminologies frequently since the nature of science subject requires students to make hypothesis, speculate or predict what will happen, make inferences and conclusions, identify correlations between variables and so on. Teachers provided information for students to make their own decision and conclusion several times. This is because teachers used to spoon feed students with solutions because of time constrain. Teachers were worried that they would not complete the syllabus if they spent too much time waiting for students to complete the given tasks.[46] Therefore, it was easy for the teacher to make decision for their students. Shockingly teachers never dealt with specification, that is, teacher never made their statement specific and never corrected over and hasty generalization made by students. For example, teacher said that, "Parents always point fingers towards teachers when students did not achieve." In this statement, the teacher did specify who the parents were; and the meaning of "always" was over generalization.

[46] Malaysia Education Blueprint 2013-2025.

Conclusion

Malaysia Education Blueprint 2013-2025 highlight the the aspiration of Malaysia to produce students who are critical and creative so that they could provide creative and practical solutions for the advancement of Malaysia in all aspects in the future. Teaching for higher order thinking was made explicit since 1989 and the importance was emphasized since 2013. However, result of 2016 UPSR indicated that students were not able to apply higher order thinking to answer thinking questions. One of the reasons for this failure is teachers inability to teach for higher order thinking. Researches have shown that the easiest method that teacher could employ is using language of thinking while delivering their lessons and while interacting with students in the classrooms.

This study was conducted to explore language of thinking used in primary school classroom. The result of this study may inform policy markers on the implementation of teaching for thinking praticed in classroom and to provide some understanding of why 2016 UPSR result was so shocking. The findings showed that teachers needed a lot of improvement in using language of thinking when communicating with their students. If teachers did not have thinking disposition; did not make thinking as habit of mind and did not use language of thinking, how can we hope students' thinking will be developed and enhanced. Teachers are the model of thinking for students. If teachers could not model good behavior in thinking, then we could not hope for our students to be good thinkers. This finding is an eye opener for the authority to really look into the effectiveness of training programs. The first thing that the teachers need is for them to realize the importance of using the correct thinking language. School administrations should not pressure teachers to complete the syllabus because there is no value of finisihing the syllabus when students were not able to understand, apply the knowlegde and think critically and creatively.

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