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**CODE SWITCHING  
AMONG SCIENCE TEACHERS:  
A CASE STUDY**

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**DISERTASI DIKEMUKAKAN BAGI  
MEMENUHI SYARAT UNTUK MEMPEROLEHI  
IJAZAH SARJANA PENDIDIKAN**



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## PENGAKUAN

Saya mengaku disertasi ini adalah hasil kerja saya sendiri kecuali nukilan dan ringkasan yang setiap satunya saya jelaskan sumbernya.

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## DECLARATION

I hereby declare that the work in this dissertation is my own for quotations and summarize which have been duly acknowledged.



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## DEDICATION

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## ABSTRAK

'Code switching' berlaku apabila individu yang menguasai dua bahasa menggunakan kedua-dua bahasa tersebut secara bergilir-gilir semasa berkomunikasi dengan individu lain yang juga menguasai dua bahasa. Patuh kepada keputusan cabinet dimana Sains dan Matematik perlu diajar menggunakan Bahasa Inggeris di semua sekolah di Malaysia, guru-guru dilihat sebagai fasih dalam bahasa tersebut. Tujuan utama kajian ini ialah untuk mengkaji pada tahap mana (perkataan, prasa atau ayat) guru Sains 'code switch'. Kajian ini dijalankan di sekolah luar Bandar di Ketereh, Kota Bharu, Kelantan. Semasa proses tersebut, empat orang guru Sains dari sekolah tersebut telah dinilai dan ditemuramah. Dapatan data telah ditulis semula dan dianalisis secara manual. Pendekatan kualitatif telah digunakan semasa membuat analisis. Secara keseluruhannya, dapatan menunjukkan yang guru Sains 'code switch' di tahap perkataan, diikuti pada tahap prasa dan seterusnya tahap ayat lengkap. 'Code swithing' berlaku secara spontan. Dalam keadaan lain, 'code switching' menjadi satu strategi dalam sedar untuk menerangkan maksud menggunakan bahasa kebangsaan. Kajian juga menunjukkan kefasihan bahasa bukan faktor utama yang menyebabkan berlakunya 'code switching'. Ia bagaimanapun memenuhi keperluan komunikasi untuk memindahkan maksud.





## ABSTRACT

Code switching occurs when an individual who is bilingual alternates between two languages during his speech with another bilingual person. Abiding the decision of the cabinet that Science and Mathematics was to be taught in English in all Malaysian schools before, teachers were viewed to be fluent in the language. The main aim of this research was to study when Science teachers code switched. This study was conducted in a rural secondary school in Ketereh, Kota Bharu, Kelantan. Four Science teachers from the school were observed and interviewed. The data obtained from the observation and interview were transcribed and analysed manually. The qualitative approach was employed in analyzing the data from the observations and interviews of teachers. Generally, the findings revealed that Science teachers code switched mostly at word level, followed by phrase and sentence level. Code switching occurred spontaneously. Under some circumstances, code switching became a conscious strategy to emphasize a point made using the national language. The study also showed that language proficiency was not a major factor that caused Science teachers to code switch but was a supporting element to communicate information. It therefore served as a communicative purpose to transfer meaning.



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## LIST OF ABBREVIATIONS

MST	Mathematics and Science Teacher
ETeMS	English for Teaching Mathematics and Science
L1	Bahasa Melayu
L2	English Language





## CHAPTER 1

### INTRODUCTION



#### 1.0 Introduction

People develop languages through time. But what is language? In the Longman Dictionary of Contemporary English (1993: 586), language is defined as “a system of human expression by means of words”. In the perception of linguists, language is “a system of arbitrary symbols used for human communication” (Fromkin & Rodman, 1993: 26). For linguists, there is no ‘primitive’ language in this world. For them, every language has its own complexity and capability to express any ideas. According to Crystal (1996), language may refer to the concrete act of speaking, writing or signing in a given situation.





Language may function for many reasons and vary according to situations. The study of language variety deals with issues like the standard language, dialect, accent, register and bilingualism. When one country has many languages and language varieties, people tend to use more than one language or language variety when communication or interacting. They may start talking in one language or language variety, but then switch or change to another language or language variety based on the topic of discussion, the situation or the interlocutor. This phenomenon is commonly known as code switching.

Code switching is a feature of stable bilingualism. Code switching has been defined generally as the alternate use of two languages with a speaker switching from one language to another when the situation demands such use.

In this chapter, the researcher will explain in depth about the background of the research and briefly explain the research framework. However, the framework will be thoroughly discussed in Chapter Three. The objectives, significance and limitations of this study will also be highlighted in this chapter.

Malaysia, being a multiracial and multicultural nation, is no exception to this particular kind of sociolinguistic behaviour. By and large, conversational code switching occurs practically everywhere – at homes, in schools or even at workplaces. One of the reasons for the occurrence of code switching in Malaysia could be attributed to the fact that the sociolinguistic profile of Malaysian society is one of immense diversity and plurality (Bolton, 1992). The







ability of Malaysian citizens to switch from one language to another is quite normal and it is even accepted in our setting. This might be because most Malaysians are bilingual or to be more precise, Malaysia is a multilingual country. Many Malaysians even know more than two languages. They tend to switch from Bahasa Melayu to English in different settings or contexts. Very often, the code switching patterns sound so natural, spontaneous and effortless.

Wardaugh (1986, cited in Journal MPIK, Volume XIV: 50) found that code switching is interesting in the sense that there are reasons behind the code switching taking place. Why do some people choose to use one code to another? What are among the reasons that make people code switch and why do some people occasionally prefer to use code formed from two other codes mixed together? This means that, there are unanswered questions here, which we need to look into especially when they do occur in our bilingual approach.

According to Ovando and Collier (1987: 86), “code switching shows a high degree of sophistication in understanding of uses and functions of both languages”. This claim is relevant to Malaysian pattern of bilingual education, where Bahasa Melayu is the primary language with English, Mandarin and Tamil are the secondary to it.





## 1.1 Background of the Study

The English Language has for more than a century played a significant role in the lives of Malaysians. According to Asmah (1982), prior to the 1970s, English was not only the medium of instruction in a small but increasing number of elite schools in the country, but also the undisputed key to academic, social and economic mobility for school leavers. Today, it no longer enjoys such pre-eminence in the educational system, it is often described as 'a strong second language' but is, in reality, a compulsory foreign language in all primary and secondary schools.

The role of English in the Malaysian education system has seen a shift, from English as the language of instruction in all subjects in the national schools to being taught as one subject only and now being used as the language of instruction in Mathematics and Science.

According to Asmah (1992), The New Education Policy (1971) had seen the gradual change in the use of the English language in the Malaysian Education System. All schools, national or national type, regardless of location would have to use Bahasa Malaysia (the national language) as the language of instruction in all subjects except for English. The whole process of this changeover was completed in 1980 when all subjects were taught in Bahasa Malaysia. Recently, English is taught as a subject and holds its role as the second important language.





In July 2002, the government introduced a new language policy, English should be used as the language of instruction in Mathematics and Science for students enrolled in Primary One, From One and Lower Six in 2003.

In 2004, Mathematics and Science in English were taught to students in Primary One, Primary Two, Form One, Form Two, Lower Six and Upper Six. The entire process of this changeover was completed by 2008 when Mathematics and Science were taught in English to all students in Malaysian secondary schools.

The policy to change the medium of instruction in the teaching of Mathematics and Science from Bahasa Melayu to English is an important innovation affecting teachers of Mathematics and Science (MST) generally. It poses special challenges not only for teachers who have been trained in the Malay medium but also for those trained in English, whose professional experience has largely involved the use of Bahasa Melayu as the medium of instruction. In the immediate context, to derive maximum benefit from this innovation the MST would need to develop (or in some cases, reactivate) their English language proficiency in order to access the wealth of information on the subject area currently available in English texts. Additionally, the MST would need to develop the practical competence to deliver their subject matter in the language.





In July 2009, the Malaysian cabinet reached a consensus. Beginning 2012, English for Teaching Mathematics and Science (ETeMS) will be phased out in stages. There will be a return of Bahasa Melayu and vernacular languages for the teaching of Science and Mathematics in primary and secondary schools. However, there will be no change for Form Six or Matriculation as Science and Mathematics will still be taught in English.

With two languages in their hands, people may code switch within a speech event to discuss a particular topic. It is often easier to discuss particular topics in one code rather than in another. In topic switch cases, the teacher alters his or her language according to the topic that is under discussion. This is mostly observed in grammar instruction, that the teacher shifts his language to the mother tongue of his students in dealing with particular points, which are taught at that moment. In these cases, the students' attention is directed to the new knowledge by making use of code switching and accordingly making use of native tongue.

At this point it may be suggested that a bridge from known (L1) to unknown (L2) is constructed in order to transfer the new content and meaning is made clear in this way. According to Cole (1998), 'a teacher can exploit students' previous L1 learning experience to increase their understanding of the L2'. For many bilinguals certain kinds of referential content are more appropriately or more easily expressed in one language than the other.





Technical topics are firmly associated with a particular code and the topic itself can trigger a switch to the appropriate code.

The teachers' use of code switching is not always performed consciously; which means that the teacher is not always aware of the functions and outcomes of the code switching process. Therefore, in some cases it may be regarded as an automatic and unconscious behaviour. Nevertheless, either conscious or not, it necessarily serves some basic functions which may be beneficial in language learning environments. These functions are listed as topic switch, affective functions, and repetitive functions by Mattson and Burenhult (1999:61).



In this study, the researcher was interested in investigating the factors that lead to Science teachers to code switch. The researcher planned to investigate the code switching behaviour among Science teachers and what actually influenced these educators to code switch.

Most Science teachers who teach in Malaysian schools were required to attend the professional preparation course to enable them to teach Science effectively. Through informal interviews with the Science teachers from rural schools, it was found that many of these teachers sought longer training in preparing themselves to teach Science in English. Teachers who were





schooling in the English medium may have mastered the English language and are competent to deliver Science lesson in English. Conversely, some teachers who were from the younger generation may not be conversant in English. This led to lack of self efficacy in handling day-to-day lessons and the feeling of inferiority in handlings students who have difficulty in learning Science. As a result, teachers who believe they lack professional preparation will opt to teach Science in English alternately with other languages (L1).

Professional preparation encompasses strategies to equip Science teachers to master the English language. In addition, it also encompasses the strategies for teachers to help the students to learn Science in English more effectively. A general observation of students showed that many Science teachers failed to implement steps to help students in overcoming difficulties in learning Science in English, although some of the teachers did quite well in helping the students.

### 1.3 Purpose of the Study

Code switching is not a new issue in language learning. In fact, it is considered as an intriguing criterion that colour our language in use. Locally, it cannot be denied that there are many code switching studies that have been conducted. Thus the aim of this study is to add to the corpus in the study of code switching especially among Science teachers.





## 1.4 Research Objectives

The main concern of this study is to study the use of code switching from English to Malay or vice versa in teaching Science in English. The researcher aimed to identify when Science teachers code switched and to determine the reasons Science teachers code switched.

From the objectives stated above, a clearer picture on when Science teachers' code switched can be obtained. Thus, the study investigated the phenomenon of code switching and how it related to the reasons for code switching among selected teachers in Kelantan and the instances in which they code switched.



## 1.5 Research Questions

The following are the research questions :-

1. Do Science teachers code switch at word level or phrase level or sentence level?
2. Why do Science teachers code switch?





## 1.6 Significance of the Study

Code switching is a phenomenon that is common among bilinguals. This means that for a person to behave in this manner, he or she has to know at least two languages. According to Auer (1998, cited in Meewis and Blommaert 1998),

*“It is common practice to discuss code switching as a phenomenon which operates against the background of full bilingualism and, hence, as a phenomenon emerging out of the alternation of linguistic material stemming from two (or more) closed, fixed languages or grammatical systems that are fully known to the speaker who performs code switching”.*

*(Auer, 1998: 76)*



The above statement supports the argument that bilinguals code switch using two languages that they are fluent in. Lehiste (1998) states that code-switching happen when a bilingual switches from one language to another language during a conversation. In this study, the focus will be on bilinguals who code switch between two fully-known languages.

The topic is of interest as it will indicate the reasons that cause people, Science teachers, to code switch. In addition, it will determine whether code switching plays an important part in learning.







## 1.7 Definition of Terms

For further and detailed understanding, related terms are discussed. In this study, terms like code and code switching are very crucial.

### 1.7.1 Code

The term ‘code’ refers to an arbitrary, prearranged set of signals. A language is merely one special variety of code and the science of linguistic deals, in its strictest delimitation, only with the aspect of communication (Gleason, 1961).

The term has come to the fore in sociolinguistics where it is mainly used as a neutral label for any system of communication involving language, and which



avoids sociolinguistics having to commit themselves to such terms as dialect, language or variety (Crystal, 1985).

According to Asmah (1982), code means language, dialect or style. Meewis and Blommaert (1998) agree with the second definition of code – that it is equivalent to language. According to Crystal (1996: 59), in general the term ‘code’ is “a set of conventions for converting one signaling system into another”. He elaborates that the code is related to the field of sociolinguistics where it is mainly used as a neutral label for any system of communication that involves language.





A code can be used to refer to any kind of system that two or more people employ for communication (Wardough, 1986). In this study it refers to code switching between English-Malay or vice versa that is verbal. When we communicate, we are required to select and to use a particular code and this is known as code-choice. Ovando and Collier (1987: 86) claimed that people might also decide to switch from one code to another to suit the different setting or purpose of communicating and when they do this, they are code switching and when they decide to mix codes it is known as code mixing.

### 1.7.2 Code Switching



The term 'code switching' refers to the alternate use of two or more distinct languages or varieties of a language within the same conversational discourse by the same individual. Code switching is not a new issue in language studies. In fact "linguists have stressed the point that switching is a communicative option available to a bilingual member of a speech community on much the same basis as switching styles or dialects in an option for the monolingual speaker" (Romaine, 1994: 60). Ovando and Collier (1987) also defined code switching specifically as "the alternate use of two languages which can occur at the word, phrase, clause or sentence level". Generally, code switching can be defined as switching from one language to another (Fromkin & Rodman, 1993).

There are several definitions of code switching given by several researchers. According to Trudgill (1974: 82), code switching is "switching





from one language variety to another when the situation demands”. According to Gumperz (1971: 274-310), code switching refers to “the alternate use of two languages”. However, Haugen (1973: 21) reaffirms that code switching is “the alternate use of two languages including everything from the introduction of a single, unassimilated word up to a complete sentence or more into the context of another language.

Milroy and Muysken (1995), definition of code switching is similar to Haugen. But the theorists are more specific when they state when code switching happens. They define code switching as the alternative use of two languages by bilinguals in the same conversation. They elaborate that sometimes, code switching occurs between the turns of different speakers in the conversation, between utterances within a single turn, and even within a single utterance.

Code switching is “a phenomenon which reflects the change from one code to another in the speech of a particular speaker in a particular situation” (Asmah, 1982: 128). Additionally, Asmah (1982) elaborates that code switching occurs both at inter-lingual and intra-lingual levels. However, there are also monolinguals who code switch depending on the social context attended.





### 1.7.3 Word

Word is defined as ‘a unit of expression which has universal intuitive recognition by native speakers in both spoken and written’. In other words, a word is ‘physical definable unit which one encounters in stretch of writing or speech’ (Crystal: 379-380).

### 1.7.4 Phrase

A phrase is ‘a term used in grammatical analysis to refer to a single element of structure typically containing more than one word, and lacking the subject-predicate structure typically of clauses’ (Crystal: 236). A group of words,



which makes sense, but not complete sense, is called a phrase. It is a group of related words without a subject and a verb.

### 1.7.5 Sentence

A sentence is ‘the largest structural unit and it is the expression of a complete thought’ (Crystal: 313). Moreover, a sentence is ‘a group of words that forms a statement, command, exclamation or question which usually contains a subject and a verb’; also in written English, a sentence will begin with a capital letter and ends with full stop or exclamation mark or question mark (Longman Dictionary, 1987: 952).





## 1.8 Limitations of the Study

The focus of this study was to identify when Science teachers code switched and the reasons for code switching among Science teachers. There are more aspects of code switching that can be analyzed such as sentence structures and the grammatical aspects of the sentences and also the frequency of using different codes in conversations. However, these cannot be examined in such a limited research. In terms of gender and ethnicity, there may be a balanced number of responses from the participants as the number of school teachers may vary.

Another limitation is the setting of the study. Since the study was conducted in a secondary school in one state, the results are limited. Educators from other states may have a different view of code switching. This again limits the finding of this study.

## 1.9 Summary

The purpose of introducing English as the medium of instruction in the teaching and learning of science is mainly to enable students to keep up with the development in science and technology by making it possible for them to access this information which is mainly available in the English language. Teachers of science generally understood this need and were trying to facilitate this move.





However, some of these teachers felt that they themselves lacked the necessary language skills to teach in English and they chose to code switch.

The ETeMS programme that was introduced by the Ministry was only an urgent interim measure to ensure that these teachers have some basic capacity to use English as the medium of instruction (ETeMS Module, Facilitators Notes, 2002). Therefore, this research will try to find out when science teachers code switched and for what reasons. There are limitations to this research as it is only a small scale research. The researcher hopes to give comments, suggestions and recommendations that will benefit other teachers.

