Dual-Language Programme in Malaysian Secondary Schools: Glancing Through the Students' Readiness and Unravelling the Unheard Voices

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ABSTRACT

Learning Science and Mathematics in English has its own advantages and disadvantages. Since the abolishment of English for Teaching Mathematics and Science policy (PPSMI), the Ministry of Education has introduced an initiative named the Dual-Language Programme (DLP) in 2016. This study aims to identify the level of readiness and confidence among the students in this programme. In tandem, it also aims to discover the difference in the level of readiness between Form One and Form Two DLP students as well as gender influence. Respondents were 145 DLP students comprising 80 Form One and 65 Form Two students. This study employed five-point Likert scale questionnaire as the instrument and open-ended questions to validate the findings. From the data analysis generated by SPSS 19, the level of readiness and confidence among the DLP students was moderate. The findings further revealed that there was no significant difference concerned between the variables, class and gender. English language mastery was found to be one of the main factors influencing the students' readiness towards this programme. To sum up, the DLP is a positive move put forward by the government aimed at valorising the standard of English among the students via the learning of Science and Mathematics. However, more initiatives and efforts are deemed essential to the execution of the DLP towards progressivism.

Keywords: Dual-Language Programme; language competency; education; readiness; policy implementation

INTRODUCTION

The issue of teaching and learning Science and Mathematics has long been discussed and debated in the Malaysian Education System. Some parties have advocated that the learning of these subjects should be conducted using the national language, which is Bahasa Melayu whereas some have proposed that the English language should be made the means of instruction for both subjects. Learning Science and Mathematics in the English language serves as a two-pronged approach, aiming at enabling students to have the access and exploration of knowledge in order to compete globally and to increase the marketability of the students in the working field. As proposed by Hudson (2009), Science education and English literacy development must be core elements in EFL preservice teacher education if

economic advancement is a national focus for international engagement of a nation. This reinforces the idea that competency in the English language and knowledge in the Science and Mathematics fields is interdependent and seen to be vital for students to embark in the prospective career.

In a drastic attempt to address the decline in English proficiency, the government reintroduced English as medium of instruction for Science and Mathematics in 2003 (Hazita, 2016). In fact, it was also due to the aim and vision of becoming a developed nation, that leads the Malaysian Ministry of Education to propose the teaching and learning of Science and Mathematics in English (PPSMI) as part of the government policy. Ashairi, Mohamed Yusoff and Melor (2017) asserted that PPSMI derives from the need to develop human capital in line with the objective of achieving developed nation status. As put forward by Melor and Saiful Islam (2017), the Education Ministry of Malaysia implemented the aforesaid educational reform in 2003 with the aims of improving students' command of English and accelerating their mastery in Science and Mathematics. The implementation of this policy began in 2003 with the Year 1 pupils in Primary School and Form 1 and Lower 6 students in Secondary Schools as the pioneer cohorts. However, after endless debate and arguments regarding the implementation of the policy, it was announced that the policy would be put to an end in 2012. This means that both Science and Mathematics subjects would be reverted to the National Language (Bahasa Melayu) as the medium of instruction. In addition, it was also announced that students who had started learning both subjects in English might continue learning Science and Mathematics in English until they finished their secondary education. In the end, the policy was only fully abolished in 2014.

In order to cater to the needs of some parents who support for the continuation of PPSMI, the Ministry of Education implemented a soft-landing approach named 'To Uphold Bahasa Malaysia To Strengthen Bahasa Inggeris' (MBMMBI) policy. Under this policy, an initiative which resembles PPSMI has been introduced. The Dual Language Programme (DLP) is commonly assumed to be the rebirth of the PPSMI policy. Undeniably, it resembles PPSMI but differs in several aspects of its implementation. According to Ashairi, Mohamed Yusoff and Melor (2017), DLP provides flexibility to the schools, teachers, students as well as parents their preferred language of instruction, making it very much open to the willingness of the schools to be part of it. To note, the programme is launched with three main objectives;

i.   Enabling students to have the access and exploration of knowledge in order to compete globally and to increase the marketability of the students in the working field
ii. Assisting and capturing students' enthusiasm of STEM education at tertiary level
iii. Increasing students' contact hours to the English language, that will indirectly solidify their command of the target language

The case of English competency and proficiency is an endless story and debate in the Malaysian education system. Thang, Ting and Nurjanah (2011) claimed that Malaysian students display poor effort in learning English even though its importance is generally acknowledged. This is in consensus with Melor and Saiful Islam (2017) who claimed that the proficiency of the English language among Malaysians has not seen much improvement since 1970. Despite the fact that the Dual-Language Programme is a voluntary policy, few issues have been raised over the first two years of its inception. At the beginning of 2017, hundreds of Indian NGOs and Tamil language activists held a protest in regard to the implementation of the programme in Tamil vernacular primary schools. They claimed that worries arose regarding the future of Tamil education if English or Bahasa Melayu were fully used in the

teaching of STEM. Adding to that, they were concerned that schools would have fewer teaching hours in Tamil which might lead to the parents abandoning the school (The Star, 3 January 2017). Concurrent to the protest, Penang Deputy Chief Minister II had also appealed to the Ministry of Education to abolish the Dual-Language Programme. Quoting from Malay Mail (29 December 2016), the DLP was introduced without consultation and feedback from education experts and the public while some parties have labelled the DLP as a new version of the PPSMI. Dr P. Ramasamy, the Deputy Chief Minister of Pulau Pinang argued that DLP will destroy vernacular schools and it is a danger to the vernacular schools in the country.

In addition, the National Education Action Council Chairman, Datuk Zainal Abidin Borhan claimed that Malay students will be victimised by the DLP. Similarly, the President of Parti Amanah Negara, Mohamad Sabu believed that the implementation of DLP would see the country regressing into an era of colonialism. He opined that 'We do not agree that English be the main medium for education. Doing so will see us having to overhaul the entire education system, complication matters for our teachers and gambling away the future of our students (Borneo Post, 3 April 2016). Furthermore, the Pena chairman, Dr Ibrahim Ghaffar claimed that the implementation of the DLP will bring about discrimination between the schools in the urban and rural areas as well as the vernacular counterparts. He stated that 'educational policies should be applied universally, rather than on a selected group. It is discriminatory for the programme to only be available to the schools involved in the pilot project. Not only that, this discrimination will also lead to a widening gap between urban and rural schools (Borneo Post, 3 April 2016).

The focus of this study, as the title indicates is readiness. In the context of this study, readiness is defined as "The state or quality of being ready; preparation; promptness; aptitude; willingness. Prepared for what one is about to do or experience; equipped or supplied with what is needed for some act or event; prepared for immediate movement or action" (Turnbull et al, 2010). So, this is where the concern arises. Are the DLP students really prepared to join the programme? As mentioned earlier, students' agreement to join the programme is not among the criterion listed for the DLP to commence. It is their parents' consent that matters more. Bearing that in mind, the students will most likely to suffer should the programme fail to reach its aims and objectives. In fact, the students are the ones who will have to undergo the consequences of the DLP. Hence, this study is intended to identify the readiness of the students enrolled in the DLP as well as to understand the factors influencing their readiness level. In order to achieve these aims, this study addressed these research questions;

1. What is the level of readiness among the students enrolled in DLP?
2. What is the level of confidence among the students enrolled in DLP?
3. Why are the DLP students not ready for the programme?
4. What are the problems faced by the DLP students undergoing this programme?
5. Is there any difference in the level of readiness among the DLP students based on class and gender?

LITERATURE REVIEW

Learning Science and Mathematics in English language is not an easy task to do. As put forward by Zuraini (2014), teaching and learning Mathematics and Science in a language that is not the learner's main language is complicated. This is indeed true in the Malaysian context where English has become either the second or third language for majority of the students. The students will need to be competent in the target language in order for the learning process to succeed. In fact, this might be challenging as the students will have to deal with the language aspect and the content knowledge of both subjects. However, the teaching and learning of Science and Mathematics in the English language should not be perceived as

troublesome as it may somehow benefit the learners as well as the teachers. As claimed by Setati and Adler (2000), learning Science and Mathematics have elements that are similar to learning a language, since both disciplines involve a specific register, set of discourses, as well as conceptual and abstracted forms. Moreover, Hand et al. (2016) argued that Science cannot exist without some form of language, that is, one cannot explain old or construct new science knowledge without language (mathematical, graphical, verbal, or iconic). This somehow augments the idea that students learning both subjects in English will find some similarities pertaining to the learning aspects.

Learning Science and Mathematics in the English language enables students to explore the knowledge globally and at the same time, increases the potential of the students in the workforce. In addition, it also increases the students' contact hours to the English language, that may indirectly enrich their language competency and proficiency. The programme is in line with one of the goals in the Malaysian Education Blueprint (2013-2025) which is to produce students who are at least bilingual in the Malay language and English language (Ministry of Education, 2013). Undeniably, some students believe that they learn better in the English language than Bahasa Melayu. Melor and Saiful Islam (2017) are of the view that studying Science and Mathematics in English does facilitate their understanding better than in Bahasa Melayu. As a result, students who are given the opportunity to learn in the English language will be able to engage themselves better in the language, which indirectly enables them to perform better in the subjects. Faizah, Marzilah and Kamaruzaman (2011) argued that ETeMS has a crucial role to play in developing students who are competent in the English language so they can keep pace with the rapid advances in science and technology.

In addition, dual language (DL) education has also been practised in other countries. Steele et al. (2017) asserted that dual language immersion schools, which provide native English speakers and English learners with general academic instruction in two languages from kindergarten onward, have shown recent and rapid proliferation in the United States of America. To note, Tran et al. (2015) further emphasized that dual instruction programmes in elementary schools have become prevalent all over America. This indicates that DL is not new to the field of education system. Japan has also started the dual language programme since 2013 in order to support the expansion of the International Baccalaureate diploma programme in Japan secondary schools. According to Yamamoto (2016), the Dual Language IB DP policy was a strategic decision to enhance dissemination of the Diploma curriculum, pedagogy, and learning outcomes, even at the cost of compromising on the initial vision of enhancing global higher education mobility in and out of Japan and on the creation of global human resources with high-level English-language communication skills. This reinforces that DL is commonly used in the education system. According to Tran et al. (2015), DL offers promising results regarding language proficiency, reading and writing, academic achievement in reading and Mathematics and attitudes towards schools.

Undoubtedly, DL develops high level of proficiency in both languages. Students enrolling in this programme will benefit themselves in terms of their language repertoire. In the case of Malaysian education system, students learn and have more contact hours in Bahasa Melayu via other subjects since it is the medium of instruction in the schools. To reiterate, the purpose of introducing English as the medium of instruction in the teaching and learning of Science and Mathematics is mainly to enable students to keep up with the developments in science and technology by making it possible for them to access information about science and technology, which is mainly available in the English language (Mohd Fadhili et al., 2009). Therefore, the students will have better access to the English language through this programme, through the three subjects, Mathematics, Science and English. To further illustrate, assuming the student's first language is not Malay, he or she will develop

three languages competently as the exposure to the other two languages in school increases. The research conducted by Lindholm-Leary and Howard (2008) demonstrated that most Dual Language students were rated as proficient in their two languages, particularly by the upper elementary grade levels and students made excellent progress in both languages across the grade levels in both 90:10 and 50:50 programmes. In fact, English language learners were or more likely to be classified by state assessments as proficient in English if they were participating in Dual Language Education programmes than if they were enrolled in English mainstream programmes (Lindholm-Leary, 2012).

REVIEW OF PAST STUDIES

Numerous studies have been conducted pertaining to this issue. Firstly, Melor and Saiful Islam (2017) conducted a study on the pre-service teachers majoring in Science and Mathematics options concerning their perceptions on teaching Science and Mathematics in the English language. The findings denoted unfavourable perceptions, in which more than 50% of the respondents disagreed to teaching both subjects using the English language. Moreover, 74% of the respondents claimed that it was troublesome to teach the subjects in English. As mentioned, Tran et al. (2015) in their study on the effects of Spanish English dual language on students' achievement in Science and Mathematics focusing on grade 3, 4 and 5 students came to a conclusion that students who enrolled in DL programme outperformed their counterparts on non DL programme in both Science and Mathematics. In addition, the findings highlighted the potential impact of DL programme on the teaching and learning of Science and Mathematics, especially for students from diverse backgrounds such as on the language proficiency, reading and writing, academic achievement in reading and Mathematics and attitudes towards schools.

In addition, Noriza et al. (2011) in their study on the lecturers' level of readiness to teach in English presented positive results. 65% of the respondents claimed that the lecturers delivered the content in the English language satisfactorily. Furthermore, about 60% respondents admitted that the lecturers were ever ready to help when students encountered any difficulties in learning the subjects in English. Conversely, Tuah and Mohini (2010) found that students' readiness in their study was at the moderate level. They distributed a survey to find out the students' readiness, interest and confidence to 309 third-year students in one of the public universities in Malaysia. However, the respondents supported the implementation of ETeMS and believed it is crucial for them to master English for their sake of their future workforce.

In addition, Isahak et al. (2008) conducted a survey alongside Science, Mathematics and English tests upon 3903 primary 5 students. The result revealed that more than 85% students said their Science and Mathematics teachers code-switched in teaching the subjects. An average of more than 80% students expressed that they did not understand or did not really understand Science being taught in English, though they had been learning the two subjects since 2003. Another study by Julianus (2007) concluded that the main problem faced by the Science and Mathematics teachers in a secondary school in Ranau was the students' lack of proficiency in English. Another reason was the lack of facilities in implementing teaching of Science and Mathematics in English. Finally, he also concluded that the level of proficiency among the teachers involved also contributed to the difficulties in implementing the policy.

Johari, Nor Hasniza and Meor Ibrahim (2006) conducted a study on 120 students in the rural area in regard to their learning of Mathematics in English language. The respondents in this study agreed that teachers' factor assisted them in their learning well. They also believed that the teachers would provide assistance to them whenever they faced difficulties

in their learning. This is similar to Noriza et al. (2011). Prior to that, when ETeMS was in the early years of implementation, Juriah Long's study found that about half of the students in both urban and rural schools were worried because they found it difficult to follow Science and Mathematics in English. This was one of the results from her 2005 survey of over 7 000 Form 2 students nationwide and she found the concern was greater among Malay students, those in rural schools and poor students (cited in Elizabeth & Aniza, 2008). All these findings are important to measure if there is any difference when the subjects are taught in the English language on a compulsory and voluntary basis.

THEORY

This study is based on the Constructionism Learning Theory, proposed by Papert (1980). This theory states that learning is an active process creating meaning to understand the world from different experiences. It promotes student-centred, discovery learning in which students utilise what they know in order to gain more information. In addition, it also further explains how students might acquire knowledge and learn. In other words, students will learn best by trying to make sense of something on their own with experience as the guidance to help them along the way. Whenever students encounter something new, they have to reconcile it with their previous ideas and experiences, which may change the belief or discard the new information as something irrelevant. Learning can work best when they are active in creating tangible objects in the real world. Moreover, they may be facilitated by the teacher who functions as the coach assisting the students to attain their own goals.

Constructionism is an educational philosophy which emphasizes that learners ultimately construct their own knowledge that then resides within them, hence each person's knowledge is as unique as they are. In this study, the students who have the language competency will find that they are able to engage with the lessons well. Prior to that, students' level of confidence will also demonstrate their readiness towards learning both subjects in English. When their surroundings are supportive, it will also contribute to their positive attitude in the programme. The supportive environment is represented by the teachers' assistance, parental and peers' support as well as the infrastructure that assists the learning process. Therefore, the readiness in learning both subjects using the English language will be demonstrated once the students are competent enough in the language, highly confident and motivated via the teachers' assistance, family support and sufficient resources and learning facilities.

METHODOLOGY

The research design of this study is quantitative in nature. Data were collected through a survey and open-ended questions. It employs cross-sectional survey research design as this is done by collecting and analysing data at one point in time only (Holmes, Dahan & Ashari, 2008). This helps the researcher to gather the needed data and analyse them without taking a long time. The instrument was adapted from Tuah and Mohini (2010). It is a five-point Likert-scale questionnaire. Kothari (2011) asserts that Likert-scale is a good instrument of choice because it is relatively easy to construct. In addition, she further added that each statement included in the Likert-scale is subjected to empirical test for discriminating ability, easy to be used and requires less time to construct. As for the instrument, it consists of three sections, namely the demographic profile of the respondents and followed by readiness and confidence constructs. The questions posed in the demographic profile of the respondents are class, gender and the general question on students' readiness of the programme. The readiness construct consists of eleven items while the confidence construct has twelve items. At the end of the questionnaire, the respondents would need to answer open-ended questions,

which are 'What makes you ready/unready to learn Science and Mathematics in English' and 'What is the problem you face in this programme'. These open-ended questions presented the views of the respondents pertaining to the issues related to the programme. In addition, these questions were designed to capture the unheard voices of the respondents.

The respondents involved in this study consisted of 145 DLP students from secondary schools in one of the states in Malaysia. The selection of the respondents varied as some of them were from the urban areas while some came from the rural areas. The respondents were made up of 80 Form One students and the remaining was Form Two. They were chosen based on purposive sampling technique. Purposive sampling technique was used intentionally because it is believed that the students have been through the main concept being studied (Creswell & Plano Clark, 2011). Regarding the data collection, the researcher distributed the instruments and explained the purpose of the study and the items available in the questionnaire to the respondents. The findings were then analysed using SPSS Version 19 and descriptive statistics involving frequency, percentage and mean were employed. Inferential statistic and T-test was also employed to answer the research question. As for identifying the level of readiness, the mean score was categorised into three classifications. Low level refers to the mean score of 1 – 2.33, moderate level implies the mean score of 2.34 – 3.66 while the high level constitutes the mean score ranging from 3.67 – 5. The findings generated will be discussed in the next section.

FINDINGS

DEMOGRAPHIC PROFILE OF THE RESPONDENTS

There were 145 respondents involved in this study. The demographic profile of the respondents is presented in the table below.

TABLE 1. Demographic Profile of the Respondents

Form	One	55.2%
	Two	44.8%
Gender	Male	44.8%
	Female	55.2%
Ready to Learn Science and	Yes	50.3%
Mathematics in English	Unsure	46.9%
	No	2.8%

STUDENTS' LEVEL OF READINESS

Table 2 describes the items pertaining to the students' level of readiness.

TABLE 2. Level of Students' Readiness Towards Learning Science and Mathematics in English

No	Item	Mean Score	Level
1	I can master the English basic well	3.46	Moderate
2	I can read in English well	3.96	High
3	I can write in English well	3.66	Moderate
4	I can understand the information in English well	3.47	Moderate
5	I can communicate in English well	3.35	Moderate
6	I can understand the textbook, notes or reference books in English well	3.58	Moderate
7	Activities done to improve English master is sufficient	2.95	Moderate
8	Various learning facilities in English is sufficient	3.27	Moderate
9	I use reference books, reading materials and exercise books in English	3.56	Moderate
10	I can understand the exam instructions in English	3.74	High
11	The use and learning in English is supported by class environment	3.84	High

As illustrated in Table 2, the highest scoring mean was from 'I can read in English well', with 3.96. This explains that the respondents in this study are very confident in terms of their reading capabilities. However, when comparing this item with the other four items related to language skills, the results demonstrated contradicting findings. Items (2) 'I can write in English well', (4) - 'I can understand the information in English well' and (5) – 'I can communicate in English well' scored 3.66, 3.47 and 3.35 respectively. This is even concurrent to the item (6) - 'I can understand the textbook, notes or reference books in English well', with 3.58 mean score. In addition, only 64.8% of the respondents agreed that they could write well in English, 51% could understand well in English, 40% claimed that they could communicate well in English and 54.5% agreed that they could understand the textbooks, notes and references in English well. The results show that the respondents were more well-prepared in their reading skills, as denoted by 80.7% agreement. Hence, all these might have contributed to the lower mean score for item (1) - 'I can master the English basic well', which scored 3.46.

The other two items that scored high were (10) - 'I can understand the exam instructions in English' and (11) - 'The use and learning in English is supported by class environment', with 3.74 and 3.84 respectively. About 2/3 of the respondents agreed that they have no difficulties in understanding the instructions in the exam while about 70% of the respondents believed that the class environment supports their learning process. This is reiterated in the responses when some of them pointed out that the teacher plays a dominant role in creating a conducive environment in the class for the learning process to take place. An interesting point to ponder here is on the two least scoring items, (7) - 'Activities done to improve English master is sufficient' and (8) - 'Various learning facilities in English is sufficient' which had 2.95 and 3.27 mean score respectively. Only 32% of the respondents agreed that the activities done are helpful for the students to improve their mastery in the English language. Correspondingly, less than half of the respondents asserted that the facilities provided are enough to assist the learning process. This implies that the activities and facilities need to be improved to make the teaching and learning process better.

STUDENTS' LEVEL OF CONFIDENCE

Table 3 describes the items pertaining to the students' level of confidence.

TABLE 3. Level of Students' Confidence Towards Learning Science and Mathematics in English

No	Item	Mean Score	Level
1	The teachers' teaching style in English is easy to understand	3.51	Moderate
2	Teachers teach me when I have problems in learning Science/Mathematics in English	4.22	High
3	Teachers teach Science/Mathematics in English systematically	3.99	High
4	I can answer the questions from my friends in English	3.46	Moderate
5	I am brave to give opinions in English to my friends	3.08	Moderate
6	Teachers like to use many ways in teaching Science/Mathematics in English	3.93	High
7	Learning Science/Mathematics in English is easy	3.08	Moderate
8	My English skills is enough for me to understand Science/Mathematics in English	3.12	Moderate
9	The questions given by the teachers are easy	3.16	Moderate
10	I answer the questions in English orally	3.24	Moderate
11	I present the work in class using English	3.41	Moderate
12	I can follow the lesson if the teacher uses English fully in the class	2.97	Moderate

For the next construct, the three highest scoring items came from the items related to the teachers. The highest scoring item (2) - 'Teachers teach me when I have problems in learning Science/Mathematics in English', with 4.22 demonstrated the fact that students need

the teachers to assist them in their learning. This is crucial, in this case, as a number of the respondents did not learn the subjects in the English language when they were in primary school. As teachers have been equipped with the DLP training, they should use the knowledge they possess. This is also concurrent to the next two items related to teachers, item (3) with 3.99 mean score and item (6) with 3.93 mean score, in which teachers vary their teaching methods in order to attract the students' attention as well as to ease the students' understanding. It is essential for the teachers to use different ways of teaching so as not to hamper the students' learning process. One student might be learning in a different way from the others. It is also important for the teachers to teach in proper structure. They ought to follow the syllabus and try to engage with the students in order to ensure the students could follow the lesson well.

The three least scoring items in this construct portrayed the level of confidence among the respondents. Item (12) - 'I can follow the lesson if the teacher uses English fully in the class' had the lowest mean score (2.97). It somehow indicated that students hoped for the lessons to be taught in English and Bahasa Melayu. In fact, respondents were unsure if they can learn well if the teachers used full English instruction in the class as reported by 47% of the respondents. This is challenging for the fact that the teaching process should be conducted fully in English. If the teacher applies code-switching, it will defeat the purpose of this programme. Furthermore, item (5) - 'I am brave to give opinions in English to my friends' that scored 3.08 indirectly reflects the finding related to the speaking skill in the earlier construct. This emphasizes that respondents are unsure of their communication skill or perhaps afraid to voice their views using the target language. Item (7) - 'Learning Science/Mathematics in English is easy' which scored 3.08, enlightens us that the respondents are not in total agreement with this, which might be caused by the lack of language or content mastery.

As mentioned earlier, open ended questions were also posed to the respondents. Two questions 'What makes you ready/unready to learn Science and Mathematics in English?' and 'What is the problem you face in this programme?' were asked at the end of the questionnaire. Based on the open ended responses, R3, R9, R22, R145, R43 and R51 for instance, reported the following:

> *'I am ready because I can remember English easier' (R3)*
> *'I am ready because I like to talk in English' (R9)*
> *'I am ready to learn Science and Mathematics in English language for my future' (R22)*
> *'I am ready because I love English' (R145)*
> *'I am ready because I can answer in English' (R43)*
> *'I am ready to join this programme because it is more fun than Bahasa Melayu and I can understand the subjects well in English' (R51)*

It is evident that 'readiness' as underlined in the excerpts is associated with an easier process to remember and understand in English, learning English is associated with fun, sense of liking to talk in English, the understanding that English is important for the student's future, loving English language and ability to answer using the target language. Those responses indicate the immense influence of language aspect accounting for the students' readiness for the programme. On the contrary, R25, R106, R70, R7, R92, R89, R76 and R31 illustrated the following:

> *'I am not ready because I always don't understand the questions given' (R25)*
> *'I am not ready because I am not good in English' (R106)*
> *'I am not ready because I don't like it and I don't understand English' (R70)*
> *'I am not ready because I could not understand the questions in English' (R7)*
> *'I am not ready because I cannot explain in English' (R92)*
> *'I am not ready because I cannot answer in English but I know the answer in BM' (R89)*
> *'I am not ready because I cannot speak English well and shy to speak in English' (R76)*
> *'I am not ready because English is a difficult subject to learn' (R31)*

These excerpts underlined have illustrated the unreadiness of the students is affected by difficulty to fathom and answer questions in English, limited proficiency in the English language, sense of disliking the English language, learning English is related with hardship, inability to respond and converse using the target language, low self-esteem in using the language and negative perception of the English language. In addition, this emphasizes the importance for the students to arm themselves with a solid foundation in the English language, to ease their learning of Science and Mathematics in English. In examining the problems faced by the DLP students, R1, R94, R101, R4, R85, R80, R41, R77, R88, R60, R63 and R114. reported the following;

> *'I'm okay with Maths but not Science cause <u>it's too difficult to answer in English</u>' (R1)*
> *'The <u>explanation in Science in difficult</u>'(R94)*
> *'I <u>cannot understand the teacher's English</u>' (R101)*
> *'I <u>cannot explain in English</u>' (R4)*
> *'<u>Difficult to understand</u> because I learn in Malay in primary school' (R85)*
> *'I <u>don't understand the questions in English</u>' (R80)*
> *'I <u>cannot communicate well and hard to understand the questions</u>' (R41)*
> *'No problem in Maths but <u>Science needs English sentences and Science words</u>' (R77)*
> *'I <u>cannot speak in English and shy to speak in English</u>' (R88)*
> *'I <u>don't know many words in Science and Mathematics</u>' (R60)*
> *'I <u>cannot understand some Science words</u> when translated into English' (R63)*
> *'<u>Difficult to understand few words</u> and never hear the words before' (R114)*

It is evident that language issue, as underlined has been the dominant obstacle impeding students' readiness towards this programme. Instances such as difficulty to answer questions in the target language, inability to understand English questions and words, incompetence to speak in English, ineptitude to explain in English and limited English vocabularies are found to be some of the hindrances encountered by the students in their learning process. Those problems might indirectly dampen their interest in the programme as they find difficulties pertaining to the language aspect. In addition, this situation might also lead to the deterioration of their performance in the subjects. With that, students should possess competency in the English language, that will later assist them in comprehending and digesting the lesson better.

DIFFERENCE IN THE LEVEL OF READINESS BASED ON CLASS AND GENDER

Table 4 describes the level of readiness between form one and form two students.

TABLE 4. T-test Result on Level of Readiness between Form One and Form Two Students

Scale	Class	N	Mean	Std. Deviation	t-Value	Sig.
Readiness of	Form One	80	3.566	.525	0.873	.384
DLP	Form Two	65	3.489	.523		

An independent samples t-test was conducted to compare the level of readiness between form one and form two students. It was found that there was no significant difference in the level of readiness between form one students (mean=3.566, s.d=.525) and form two students (mean=3.489, s.d=.523); (t=0.873, p=.384). However, the Form One students were found to be more positive than the counterpart. Perhaps, Form One students were still new to the programme and thereby more enthusiastic in undergoing the programme as compared to Form Two students who have been undergoing it for more than a year.

Table 5 describes the level of readiness between male and female students.

TABLE 5. T-test Result on Level of Readiness between Male and Female Students

Scale	Gender	N	Mean	Std. Deviation	t-Value	Sig.
Readiness of	Male	65	3.576	.610	0.924	0.357
DLP	Female	80	3.496	.442		

Then, another independent samples t-test was conducted to compare the level of readiness between male and female students. It was found that there was no significant difference in the level of readiness between male students (mean=3.576, s.d=.610) and female students (mean=3.496, s.d=.442); (t=0.924, p=.357). As shown via Table 5, no significant difference was found between the male and female students pertaining to their level of readiness. However, it is interesting to note that the male students were more ready than the female students in this case. Perhaps, there are more reasons contributing to this finding which can be discovered in future research.

DISCUSSIONS

As the Constructionism Learning Theory has proposed, learning is an active process of creating meaning by utilising what the learner has already known via their different experiences. In this study, the respondents have demonstrated their moderate level of readiness, particularly in relation to the language aspect despite the fact that they have been learning the English language formally for at least six years. They seem to display a moderate level of readiness although the exposure to the English language is prominent in their daily lives. This answers the question in the demographic section on their readiness towards the programme, with only 50.3% were found to be ready while 46.9% were unsure. Uncertainty of their own readiness is a serious matter to begin with. After six or seven years of learning English formally, the issue of language competency in relation to their level of readiness is still perpetuating. This is an important point to note when almost half of the respondents are still baffled with regard to their readiness in joining the programme. The respondents clearly understand the importance of learning in the English language, yet they are still unsure of their readiness. Prior to this, Melor and Saiful Islam (2017) asserted that the lack of the English language skills would be a great loss to the country and at present, the escalating pressure is felt as social media every now and then report on Malaysians' unfathomable, baffling poor grasp of English. In addition, Tuah and Mohini (2010) put forward that the programme is important for English mastery and career workforce in future. It is inevitable that the mastery of the English influences the participation in the programme. The students will have to juggle between their language competency and Science and Mathematics content knowledge. If they have the proficiency, it might ease their understanding of the content knowledge. However, those with limited mastery of language will also be able to go through the programme on the condition that they have the positive attitudes and willingness to improve their language skills from time to time.

In discussing the level of English mastery among the respondents, less than half of the respondents were found to agree that they master the foundation of English well, and hence supporting Melor and Saiful Islam (2017) that the proficiency of the English language among Malaysians has not seen much improvement since 1970. If the students are unable to master the basics of English, it might be difficult for them to learn the lesson. Furthermore, in the long run, competency in English language is deemed crucial as argued by Thang et al. (2016) that in Malaysia, it is generally accepted that students who have high proficiency in English will find it easier to find a job. In discussing the mastery of English language among the students, reading skill seems to be on the upper hand than the other three language skills. Speaking skill, on the other hand, was found to be the least competent skill among the respondents with only 40% agreed they could communicate well in English. This opposes

Amerrudin and Sarimah's study (2012) whereby speaking is the most important English language skill among the four language skills in the increasingly globalised world today. In fact, this finding reiterated Ashairi (2014) in which majority of the respondents agreed that speaking skill is the most difficult language skill. Students should be encouraged to converse using the English language, especially in giving justification of their answers. They should be made anxious-free of making mistakes and willing to come forward and offer their views because Nair (2000) asserted that students should be made to feel that learning to speak English could be fun. With that, a more interactive learning process will take place.

In addition, this study also posits the idea that the learning process is encouraged by the class environment, which is the second highest scoring item. About 70% respondents agreed that class environment places a big impact on the learning process. It can be said that teachers become the source of contributing factor towards students' ease of learning. As a number of the respondents did not previously learn the subjects in English, the assistance and support from the teachers who were involved in ETeMS is of paramount importance. This supports Thang's et al. (2016) study in which they proposed that Malaysian students believe that teacher-centred approach to learning is more effective. To note, many respondents affirmed that the teachers' assistance in the learning process has helped them to be more confident about the programme. They reported that *'teacher teaches very good', 'teacher explains well', 'teacher uses easy words to understand' a*nd *'teacher explains when I have problems'.* Teachers play a pivotal role in this programme. This finding supports studies by Noriza et al. (2011a) and Johari, Nor Hasniza and Meor Ibrahim (2006) on the role played by teachers in ETeMS. It should be taken into account that teacher is at the heart of the educational process and it highlights the importance of the teachers to engage students in the learning process. This is parallel to Siti Salina, Ramlee and Mustapha (2014) who put forward that teachers are encouraged to create an enjoyable learning environment by developing activities suited to students. When the students find the excitement in the learning process, this will indirectly develop their confidence level much better.

Apart from the teachers being the element of environmental support in the students' learning, the influence of supporting activities and facilities should not be discarded as denoted in the theory. Facilities and activities pertaining to English mastery improvement will enable the students to enrich their language proficiency, indirectly boosting the students' confidence level. This will contribute to the students' level of readiness participating in the programme. Although no resources are provided to the schools, DLP schools and teachers can collaborate to share facilities that will aid the learning process. Ashairi (2014) proposed that environment is seen as one of the factors contributing towards students' lacking of competency. Therefore, crucial steps need to be undertaken to stop the environmental factor from adversely affecting students' readiness and confidence level in the programme.

Concerning the level of confidence among the respondents, only three items recorded high mean score. All the three items are related to the teachers' ways of teaching and assistance, which again supports the Constructionism Learning Theory focusing on the role of the teachers. This posits the idea that teachers play an important role in instilling the confidence level among the students, especially in the teaching and learning of Science and Mathematics in the English language. This is supported by Siti Salina, Ramlee and Othman (2014), that teachers are encouraged to create an enjoyable learning environment by developing activities suited to students. Teachers play a dominant role to ensure the students feel comfortable and confident in learning the subjects as argued by Ahmad Zamri (2016) wherein teacher is an important factor in determining quality as well as the success of the STEM integration programme. If teachers are unable to assist the learning process, students' motivation and confidence level might decline. In this case, teachers' role is highly demanded in order for the teaching and learning process to take place well. This is even reinforced by

Ong (2009), that teachers' way of teaching is indispensable in increasing students' learning outcome and achievement in Science and Mathematics.

The respondents' level of confidence is considered to be at the moderate level, similar to their level of readiness. It is also worth mentioning that almost half of the respondents were unsure if they could follow the lesson conducted fully in the English language. This is in line with the theory underpinning this study in which if they are unsure of their confidence level, this might affect their level of readiness and it is demonstrated in the findings. In addition, this indicates that the respondents are still uncertain of their beliefs in learning the subjects using the English language. This is an important indicator for the teachers to ensure that the students are comfortable with learning both subjects in the English language. This finding was in assonance with Tuah and Mohini (2010) whereby 45% of the respondents in their study claimed that they would face difficulties if the English language was to be fully used in their teaching and learning process. Students should be given the platform for them to boost the confidence in the learning of both subjects using the English language. It should be noted that Ong and Tan (2008) opined that the purpose of teaching Science and Mathematics in English is to enable students to acquire proficiency in English while learning Science and Mathematics. Although Lay and Kamisah (2017) proposed that Malaysian students' achievement in Science and 21st century skills is not satisfactory, it is with ardent hope that the perception can be changed by means of the DLP.

CONCLUSION

This study has demonstrated that the idea that the students are still unsure of their readiness in embracing the change in the teaching and learning of STEM subjects. Their level of readiness is found to be moderate and this is greatly caused by their incompetent mastery of language. In contrast, teachers' assistance is found to be prevalent in the DLP. Though the respondents clearly denote the importance of learning in English, their uncertainties are inevitable. Mastery of language as well the dearth of facilities to support students' learning are some of the issues that need to be considered and solved in implementing the DLP. Undeniably, students' competency of the language is one of the major issues contributing to their lack of readiness in the DLP. Indeed, this is a positive move aimed at valorising the standard of English among the students via the learning of STEM subjects. However, it is crucial to arm the students with the necessary level of English mastery in order those problems as mentioned by past studies will not affect the implementation of DLP.

On the other hand, more initiatives and efforts are needed to execute the DLP more efficiently. This ought to be done hand in hand by all parties, from the top position of policy makers to the ones at the micro level of the simple management, i.e. practitioners. Ania and Widya Hanum (2017) asserted that the policy implementation process takes time, requires research and reflection that will result in new ideas, new ways of doing things and, inevitably, new problems. It should be noted that even if the students are ready towards this programme, the success also depends on other aspects of implementation. As noted by Mohamed Yusoff (2014), equal opportunity to access quality education for all is a crucial policy for Malaysia. This study provides some insights into the problems pertaining to the implementation of the programme, particularly on the influence of language mastery aspect. In addition, it also intends to enlighten the policymakers about the aspects that can be improved to improve the programme and make it better. As for future research, more respondents in other geographical locality can be involved in this study to provide more information and insights. Studies comparing the students' level of readiness between types of schools can also be done to cast light on the issue researched.

To sum up, DLP is a programme made to cater to the needs of certain parties that are more prone to using the English language in the teaching and learning of Mathematics and Science. With the aims of strengthening the English language as well as exposing students to the STEM field, it is also concurrent to Goal 4 of Sustainable Goals Development, which is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Undoubtedly, the aim of this programme is very significant in enriching students' language competency and building their knowledge repertoire in the STEM field. This is even posited by Faizah, Marzilah and Kamaruzaman (2011) in which ETEMS has a crucial role to play in developing students who are competent in the English language so they can keep abreast of the rapid advances in Science and technology. The findings in the present study revealed that improvements must be taken to ensure the success of this programme. As stated by Cone (2014), with support from both leaders and the community, having qualified teachers, and starting the programme early in a student's educational career, dual language students are able to learn a second language and have comparable test scores with traditional students. Thus, the Malaysian education system needs to undergo a comprehensive transformation if it is to meet the ambitious vision and aspirations of a Malaysian who is ready and willing to tackle the challenges of the 21st century.

REFERENCES

Ahmad Zamri Khairani. (2016). Assessing Urban and Rural Teachers Competencies in STEM Integrated Education in Malaysia. *MATEC Web of Conferences ENCON. Vol. 87*(04004), 1-5.

Amerrudin Abd Manan & Sarimah Shamsudin. (2012). Comparing Form Four Malay and Chinese Students' Spoken English. *The English Teacher. Vol. 1*(1), 13-26.

Ania Lian & Widya Hanum Sari Pertiwi. (2017). Theorising for Innovation: Implications for English Language Teacher Education. *GEMA Online® Journal of Language Studies. Vol. 17*(3), 1-17.

Ashairi Suliman (2014). The Interference of Mother Tongue/Native Language in One's English Language Speech Production. *International Journal of English and Education. Vol. 3*(3), 356-366.

Ashairi Suliman, Mohamed Yusoff Mohd Nor & Melor Md Yunus. (2017). Dual-Language Programme in Malaysian Secondary Schools: Are You Ready? Paper presented at Seminar Serantau. Malaysia: Universiti Kebangsaan Malaysia, September.

Borneo Post. (2016, 3 April). *Why The Hostility to Dual Language Programme?* Retrieved April 5, 2017 from https://www.pressreader.com/malaysia/the-borneo-post-sabah/20160403/281822872941894

Cone, H. D. (2014). Development and Support of Dual Language Policies. Doctorate Dissertation. *Electronic Theses & Dissertations*. 1172. Georgia Southern University.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and Conducting Mixed Methods Research* (2nd ed.). Los Angeles: SAGE Publications.

Elizabeth John & Aniza Damis. (2008). *Teaching of Maths and Science in English: Study Reveals Policy's Flaws*. Retrieved March 16, 2017 from http://www.prihatin.net/keratan-akhbar-terpilih/38-teaching-of-maths-and-science-in-english-study-reveals-policys-flaws.html

Faizah Mohamad Nor, Marzilah A. Aziz & Kamaruzaman Jusoff. (2011). Should English for Teaching Mathematics and Science (ETeMS) in Malaysia Be Abolished? *World Applied Sciences Journal.* Special Issue on Creating a Knowledge Based Society. 36-40.

Hand, B., Norton-Meier, L. A., Gunel, M. & Akkus, R. (2016). Aligning Teaching to Learning: A 3-Year Study Examining the Embedding of Language and Argumentation into Elementary Science Classrooms. *International Journal of Science and Mathematics Education. Vol. 14*(5), 847-863.

Hazita Azman. (2016). Implementation and Challenges of English Language Education Reform in Malaysian Primary Schools. *3L: Language Linguistics Literature®, Southeast Asian Journal of English Language Studies. Vol. 22*(3), 65-78.

Holmes, R., Dahan, H. M. & Ashari, H. (2008). *A Guide to Research in the Social Sciences.* Petaling Jaya: Prentice Hall.

Hudson, P. (2009). Learning to Teach Science Using English as The Medium of Instruction. *Eurasia Journal of Mathematics, Science & Technology Education.Vol. 5*(2), 165-170.

Isahak Haron, Abdul Latif Gapor, Md Nasir Masran, Abdul Halim Ibrahim dan Mariam Mohamed Nor. (2008). *Kesan Dasar Pengajaran Matematik dan Sains dalam Bahasa Inggeris di Sekolah Rendah*. Retrieved May 25, 2017 from http://profabdullah1.wordpress.com/2009/02/08/11a-kesan-ppsmi-di-sekolah-rendah

Johari Surif, Nor Hasniza Ibrahim & Meor Ibrahim Kamaruddin. (2006). Masalah Pembelajaran Matematik dalam Bahasa Inggeris Di Kalangan Pelajar Tingkatan 2 Luar Bandar. Paper presented at Annual Conference on Teacher Education. Malaysia: Kota Kinabalu, September.

Julianus Anggau. (2007). Masalah dan Cabaran Pelaksanaan dan Pengajaran Sains dan Matematik dalam Bahasa Inggeris di sebuah Sekolah Menengah Pedalaman Daerah Ranau. Masters Dissertation. Universiti Malaya.

Kothari, C. R. (2011). *Research Methodology: Methods and Techniques*. New Delhi: New Age International.

Lay Ah-Nam & Kamisah Osman. (2017). Developing 21st Century Skills through a Constructivist-Constructionist Learning Environment. *K-12 STEM Education. Vol. 3*(2), 205-216.

Lindholm-Leary, K., & Howard, E. (2008). Language and academic achievement in two-way-immersion programs. In T. Fortune & D. Tedick (Eds.). *Path-ways to bilingualism: Evolving Perspectives on Immersion Education.* England: Multilingual Matters.

Lindholm-Leary, K. (2012). Success and Challenges in Dual Language Education. *Theory Into Practice. Vol. 51*(4), 256-262.

Malay Mail. (2016, 29 December). *Ramasamy tells Education Ministry to abolish Dual Language Programme.* Retrieved April 9, 2017 from http://www.themalaymailonline.com/malaysia/article/ramasamy-tells-education-ministry-to-abolish-dual-languageprogramme#tIbVYFo0G0VwFAOY.97

Melor Md Yunus & Saiful Islam Ahmad Sukri (2017). The Use of English in Teaching Mathematics and Science: The PPSMI Policy vis-a-vis The DLP. *Advances in Language and Literary Studies. Vol. 8*(1), 133-142.

Ministry of Education. (2013). *Malaysia Education Blueprint 2013 - 2025.* Putrajaya.

Mohamed Yusoff Mohd Nor. (2014). Potential of Contextual Value-Added Measures in Assisting Schools Become More Effective. *International Education Studies. 7*(13), 75-91.

Mohd Fadhili Yahaya, Mohd Asri Mohd Noor, Ahmad Azman Mokhtar, Rafizah Mohd Rawian, Mahmod Othman & Kamaruzaman Jusoff. (2009). Teaching of Mathematics and Science in English: The Teachers' Voices. *English Language Teaching. Vol. 2*(2), 141-147.

Nair, M. A. (2000). *Teaching of English as a Foreign Language*. Kuala Lumpur: Utusan Publication.

Noriza Majid, Saiful Hafizah Jaaman, Maslina Darus, Roslinda Mohd Nazar, Siti Norafidah Mohd Ramli, Nur Riza Mohd Suradi, Azmin Sham Rambely, Rokiah@Rozita Ahmad, Ummul Khair Salma Din, Faridatulazna Ahmad Shahabuddin, Zalina Mohd Ali, Najib Mahmood Rafee, Wan Rosmanira Ismail, Nur Jumaadzan Zaleha Mamat, Nora Muda, Norkisme Zainal Abidin, Mohd Salmi Md. Noorani, Abdul Malek Zakaria, Zaidi Isa, Hamizun Ismail, Zainol Mustafa, Abdul Ghafur Ahmad, Muhammad Ikhwan Azlan, Ishak Hashim. (2011). The Readiness of Mathematics and Science Lecturers to Teach in English from Students' Perspective. *Procedia Social and Behavioral Sciences. Vol. 18*, 342-347. https://doi.org/10.1016/j.sbspro.2011.05.048

Ong, C. L. (2009). Impak Bahasa Pengantar Ke Atas Pembelajaran Sains dan Matematik Pelajar. Masters Dissertation. Universiti Malaya.

Ong, S. L. & Tan, M. (2008). Mathematics and Science in English: Teachers Experience Inside The Classroom. *Jurnal Pendidik dan Pendidikan. Vol. 23*, 141-150.

Papert, S. (1980). *Mindstorms: Children, Computers and Powerful Ideas*. New York: Basic Books.

Setati, M., & Adler, J. (2000). Between Languages and Discourses: Language Practices in Primary Multilingual Mathematics Classrooms in South Africa. *Educational Studies in Mathematics. Vol. 43*(3), 243-269.

Siti Salina Mustakim, Ramlee Mustapha & Othman Lebar. (2014). Teachers' Approaches in Teaching Literature: Observation of ESL Classroom. *Malaysian Online Journal of Educational Science. Vol. 2*(4), 35-44.

Steele, J. L., Slater, R. O., Zamarro, G.,Miller, T., Li, J., Burkhauser, S. & Bacon, M. (2017). Effects of Dual-Language Immersion Programs on Student Achievement: Evidence from Lottery Data. *American Educational Research Journal. Vol. 54*(1), 282-306.

Thang Siew Ming, Ting Siew Ling & Nurjanah Mohd Jaafar. (2011). Attitudes and Motivation of Malaysian Secondary Students towards Learning English as a Second Language. *3L: Language Linguistics Literature®, Southeast Asian Journal of English Language Studies. Vol. 17*(1), 40-54.

Thang Siew Ming, Lee Kean Wah, Puvaneswary Murugaiah, Nurjanah Mohd Jaafar, Choon Keong Tan & Nurul Iman Ahmad Bukhari. (2016). ICT Tools Patterns of Use among Malaysian ESL Undergraduates. *GEMA Online® Journal of Language Studies. Vol. 16*(1), 49-65.

The Star. (2017, 3 January). *Indian NGOs Protest Dual Language Programme.* Retrieved April 2, 2017 from http://www.thestar.com.my/news/nation/2017/01/03/indian-ngos-protest-dual-language-programme/

Tran, N. A., Behseta, S., Ellis, M., Martinez-Cruz, A. & Contreras, J. (2015). The Effects of Spanish English Dual Language Immersion on Student Achievement in Science and Mathematics. *E-Journal of Education Policy*. 2015 Special Issue.

Turnbull, J., Lea, D., Parkinson, D., Philips, P., Francis, B., Webb, S., Bull, B., & Ashby, M. (2010). *Oxford Advanced Learner's Dictionary*. UK: Oxford University Press.

Tuah Ishak & Mohini Mohamed. (2010). Pengajaran dan Pembelajaran Sains dan Matematik dalam Bahasa Inggeris (PPSMI): Suatu Isu Berulang. *Jurnal Teknologi. Vol. 53*, 95-106.

Yamamoto, B. A., Saito, T., Shibuya, M., Ishikura, Y., Gyenes, A., Kim, V., Mawer, K., Kitano, C. (2016, June 16). Final Report on Implementation and Impact of the Dual Language IB DP Programme in Japanese Secondary Schools.

Zuraini Ramli. (2014). Teaching and Learning Mathematics and Science in a Second or Third Language. Doctorate Dissertation. Deakin University.

APPENDIX (QUESTIONNAIRE)

A. DEMOGRAPHIC PROFILE OF THE RESPONDENTS

FORM	( ) ONE	( ) TWO
GENDER	( ) MALE	( ) FEMALE
ARE YOU READY TO LEARN SCIENCE & MATHEMATICS IN ENGLISH	( ) YES ( ) UNSURE ( ) NO	

B. READINESS ASPECT

NO	ITEM	STRONGLY DISAGREE	DISAGREE	UNSURE	AGREE	STRONGLY AGREE
1	I can master the English basic well					
2	I can read in English well					
3	I can write in English well					
4	I can understand the information in English well					
5	I can communicate in English well					
6	I can understand the textbook, notes or reference books in English well					
7	Activities done to improve English master is sufficient					
8	Various learning facilities in English is sufficient					
9	I use reference books, reading materials and exercise books in English					
10	I can understand the exam instructions in English					
11	The use and learning in English is supported by class environment					

C. CONFIDENCE ASPECT

NO	ITEM	STRONGLY DISAGREE	DISAGREE	UNSURE	AGREE	STRONGLY AGREE
1	The teachers' teaching style in English is easy to understand					
2	Teachers teach me when I have problems in learning Science/Mathematics in English					
3	Teachers teach Science/Mathematics in English systematically					
4	I can answer the questions from my friends in English					
5	I am brave to give opinions in English to my friends					
6	Teachers like to use many ways in teaching Science/Mathematics in English					

7	Learning Science/Mathematics in English is easy					
8	My English skills is enough for me to understand Science/Mathematics in English					
9	The questions given by the teachers are easy					
10	I answer questions in English orally					
11	I present the work in class using the English language					
12	I can follow the lesson if the teacher uses English fully in the class					

Please answer these two questions and write your responses in the space provided.

1. What makes you ready/unready to learn Science and Mathematics in English?

   _____
   _____

2. What is the problem you face in this programme?

   _____
   _____

~ THANK YOU ~

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