

## **The Acceptability of Environmental Education Kit (EE) Kit among Teachers at Selected Schools in Peninsular Malaysia**

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**Abstract:** A qualitative study was conducted in an attempt to assess the use of the Environmental Education Kit (EE) Kit among teachers in Peninsular Malaysia. The study was conducted on teachers from four selected secondary schools, representing four school zones in Malaysia in April and May 2011. As a pilot study, only these schools receive the EE Kit. Data was collected through face-to-face interviews. Among 85 teachers, 15 volunteered to be interviewed. This study aimed to describe and analyze the experience of using the EE Kit for teaching environmental education components in the classroom. Four elements were discussed to represent the acceptability towards the EE Kit. This study revealed 73% (11/15) of the interviewee have positive views towards using the EE Kit. Four factors were identified as barriers to adopting the EE Kit: (i) Limited time, (ii) Limited audio-visual equipment, (iii) Limited access to the EE Kit and (iv) Language problem.

**Key words:** Environmental education • Acceptability • Secondary school and qualitative study

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### **INTRODUCTION**

According to the Tbilisi Declaration, 1977, Environmental Education (EE) involves learning *from* and *about* the environment to achieving the following objectives: 1) Awareness on environment and its associated problems; 2) Knowledge and basic understanding on environment and its associated problems through various experiences; 3) Acquiring values and instilling concerns for the environment; 4) Acquiring skills to identify and solve environmental problems; and 5) Active involvement in tackling environmental problems [1]. Since then, scholars have added several terms to the EE definitions, for example, education *about*, *in/through* and *for* the environment [2].

**Environmental Education (EE) in Malaysia:** Environmental Education (EE) across the curriculum was introduced in the Malaysian schools since 1998 [3]. Teaching and learning strategies of environmental education program are: knowledge and attitude; thinking skills; manipulative skills; and application of concepts and knowledge. In terms of formal education, the Curriculum Development Center in the Malaysian Ministry of Education has

introduced various teaching and learning strategies to enhance environmental awareness and internalize values on the importance of environmental protection [4]. In line with the policy 'Environmental Education across curricula', the Ministry of Education, World Wild Fund (WWF) Malaysia and local University partners (Universiti Putra Malaysia, Universiti of Malaya and Universiti Sains Malaysia) have developed the Environmental Education Module (known as Environmental Education Kit - EE Kit) to secondary schools (Form 1, 2 & 3). The EE Kit is introduced in each subject rather than taught as a single subject in school. The application of EE Kit is introduced to several traditional subjects; Science, Geography, English and Malay Language (Bahasa Malaysia). The EE Kit consists of teaching materials (e.g. Games and activities, power-point slides, magazines, etc.) that teachers can use in class. Four pilot schools (known as *Sekolah Lestari Anugerah Alam Sekitar- Komponen Kurikulum*) were chosen by the Malaysian Ministry of Education. The introduction of the EE Kit for Form 1 started in 2007 followed by Forms 2 and 3 in the following years. The EE Kit consists of 'fun' teaching materials that will aid teachers in incorporating environmental elements into selected topics for each subject.

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The data on the extent of the EE Kit used by these pilot schools is still limited; hence, the success of the EE Kit in inculcating environmental values through class activities is not fully evaluated [4]. Therefore, this study will provide an integrated picture of the usage of the EE Kit among teachers and the performance of teachers especially concerning the practices being implemented in the curriculum activities. The purpose of the study is to: (1) Evaluate an acceptability of the EE Kit among teachers; (2) Evaluate the extent of EE Kit use; and (3) Identify factors influencing the use of the EE Kit. This study will address two research questions: (1) What are the teachers' practice and needs in using the EE Kit; and (2) What are the barriers that prevent teachers from using the EE Kit?.

## MATERIALS AND METHODS

There are several techniques that can be used to collect data in qualitative study; interview technique was chosen because it is a useful tool to provide more detailed information of respondent's perspectives, experience related to the program and about any changes they perceive in themselves as a result of their involvement in the program. Interviews are often used to provide context to other data (such as outcome data), offering a more detailed picture of what happened in the program. Therefore, qualitative interview method is used in an effort to get close to the teachers individual perspectives in relation to their experience of EE Kit [5]. There are three types of interviewing techniques: formal interviews, informal interviews and open interview [6]. In addition, there are three types of interview technique: structured, unstructured and semi structured [7, 8]. The semi structured interview technique was used in this study because it can bring the best of both alternatives to the interview process which may be why it is the most widely used types of interview informative research studies [8]. This study started with a face-to-face interview with selected teachers and four elements will be discussed namely, teachers' perception, frequency of use, their acceptance and factors that encourage the use of EE Kit.

Interviewees were asked a broad range of questions in a semi structured interview format. Fifteen respondents from four schools volunteered to be interviewed. The four pilot schools selected for this study are: (i) Damansara Jaya Secondary School, located in the state of Selangor, (ii) Pinang Tunggal Secondary School, located in the state of Kedah, (iii) Lanchang Secondary School, located in the state of Pahang and (iv) Taman Kota Jaya Secondary School located in the state of Johor (Figure 2).



Fig. 1: Selected examples of EE Kit

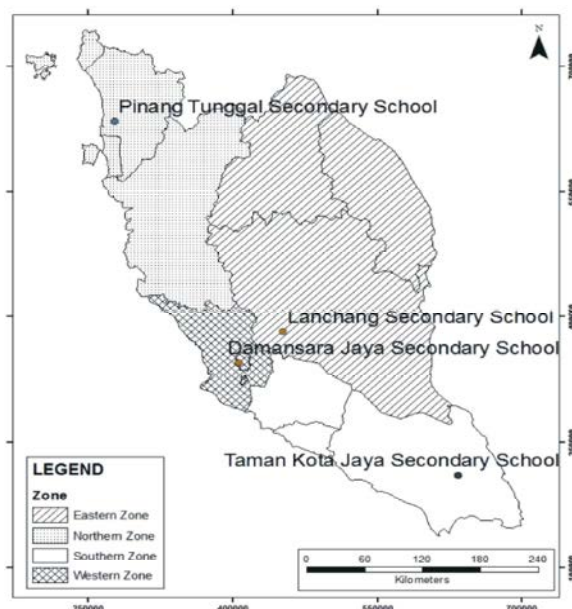


Fig. 2: The map on four pilot schools representing each school zone

A pilot study was conducted with two teachers from Pinang Tunggal Secondary School and minor modifications were made to ensure that the interview questions were clear and easily understood by the prospective interviewees. Fifteen respondents (14 female

and 1 male) were interviewed in their respective schools for approximately 15-30 minutes. Teacher interviews were coded by numbers (Interviewee 1-15). The process of data analysis begins during the data collection by the generating data from an interview; tape recorder was used to record the entire interview session and complementing with the observational notes. For ease of reference, each teacher's narrative was coded by numbers (S1-S3 represent teachers from the south zone, N4-N9 from the north zone, E10-E12 from the east zone and W13-W15 from the west zone). The researchers read the teacher's narrative several times and data were sorted by emergent themes that were mentioned by the teacher. After preliminary categories were formed, the researchers compared summaries through each category and theme before refining them to capture all perspectives. Researchers must be imaginative and analytical enough to see the relationship between the quotes [9].

## RESULTS AND DISCUSSION

In this qualitative study, the respondents consist of teachers teaching four subjects (English, Science, Geography and Malay Language), in four different schools which is located in four zones in the Peninsular Malaysia. The two secondary schools from the west and south zone are located in urban areas, meanwhile the other two schools are located in the rural area. Table 1 below shows the profile of the respondents in this study.

A total of 15 respondents was successfully interviewed, 14 of the respondents are women and one male teacher. The gender ratio of the participants in this study does not reflect the gender ratio of teachers in Malaysia, which is 2:1 (female: male) [10]. Teacher's acceptability of EE Kit is measured in terms of:

- Teachers' perception of the EE Kit
- Teacher acceptance
- Frequency of EE Kit use
- Factors influencing the use of EE Kit

**Teacher's Perceptions of the EE Kit:** Perception was the first theme emerged from the interview and it refers to the view of teachers on EE Kit. Two questions were posed to the teachers: (i) "The EE Kit content is suitable to be used in the classroom" and (ii) "Is the EE Kit appropriate to be used as teaching aids?" The data from the interviews (n=15) were coded by allocating numbers as explained in

the earlier section. The findings showed that the perception among teachers towards implementation of the EE Kit was well received. The following are some excerpts from three interviewees:

*"For Science subject, the whole content of the EE Kit for Form 1, 2 and 3 does not deviate from the subject syllabus. Before this, we teach as usual, just insert only part of the environment. But with the Kit it made us more alert and used the Kit continuously."* (S1: Science teacher)

*"In terms of the syllabus EE Kit give more detail compare to the textbook. The EE Kit is really good, EE Kit is appropriate as a teaching aid."* (N8: Malay Language teacher)

*"The EE Kit is very nice. The EE Kit is very helpful and lots of information. The Kit format also looks good; there is a summary at the end of each chapter and it follows the exam format. So there is no reason for teachers not using the EE Kit"* (W14: English teacher)

All respondents gave positive feedbacks towards the EE Kit content. Two teachers suggested minor modification to be made to the EE Kit contents. The following are some excerpt from the interviewees:

*"The EE Kit is appropriate as a teaching aid, but the level of English language use is relatively high"* (N5: English teacher)

*"My students are weak in English Language. I think the content of EE Kit is not practical to be used and need to find another way so that students can easily understood"* (E11: Geography teacher)

In general, the EE Kit was well received by the teachers. Two suggestions made by the teachers, that is, use simple language and improved its content to suit the need of students from various academic backgrounds.

**Teacher Acceptance of the EE Kit:** The second theme emerged from the interview is the acceptance. Acceptance refers to how respondents accept and use the EE Kit. One question was posed to the teachers, "Why do you adopt the EE Kit"

The following are excerpts from the teachers highlight:

Table 1: Demographic data of teachers participating in this study (N=15)

Variables	Categories	Schools				Number
		Damansara Jaya Secondary school	Lanchang Secondary School	Taman Kota Jaya Secondary School	Pinang Tunggal Secondary School	
Sex	Female	3	3	2	6	14
	Male			1		1
Age	25 - 35	1		3	2	6
	36 - 45	2	3		1	6
	46 - 58				3	3
Educational level	Degree	2	1	3	6	12
	Master	1	2			3
Teaching experience (years)	1-9	1		3	2	6
	10 - 19		3		2	5
	20 - 29	2			2	4
Subject	Science	1		1	1	3
	English		1	1	2	4
	Geography	1	1	1	1	4
	Malay language	1	1		2	4

*"We were only aware of the EE Kit when we were invited to the workshop organized by WWF Malaysia. When environmental elements are incorporated in a formal education, I become more environmentally conscious. Before this, I have not given much emphasis on the environment when teaching. Now I could see its importance"* (E10: Science teacher)

*"There are a lot of environmental problems nowadays. I am concerned with our environment and can see the importance of the Kit. I teach geography and I did not have problems using the EE Kit, especially the environmental part"* (S2: Geography teacher)

*"I always look at the exercise first. The EE Kit looks nice and there is no problem with the content of the Kit. Most importantly, the exercise is appropriate with the student's level"* (N8: English teacher).

In general, teachers who were interviewed said that they learned a lot when they attended the EE Kit workshop. Teachers were able to get a clear picture and better understanding of the EE Kit. Prior to attending the workshop, the perception that EE Kit was an extra reading material they have to deal with. Therefore, they do not have time to use it. After the workshop, they understand that the EE Kit is a guide for them while teaching the subject.

**Frequency of EE Kit Use:** The third theme emerged from the interviews was how often they use the EE Kit in the classroom. Here are some excerpts of respondents:

*"I often used the EE Kit. Let's say, today I teach grammar, so I will use the textbook and then look at the EE Kit and use the related topic. If that week I have three classes to teach grammar so I will use the EE Kit."* (N8: English teacher)

*"This Kit is developed based on a selected topic, right now I teach in biodiversity topic and I used the EE Kit. I will use every week when the topic is in the Kit."* (S1: Science teacher)

*"So far I've used only once, once a year. I actually want to use it many times but because of time."* (W13: English teacher)

*"I might use once a week. But for Form 3, I use it less often because we focus on the examination."* (E11: geography teacher)

The data revealed that teachers are using the EE Kit but not often. The frequency of use among teachers differed.

**Factors That Influence the Use of EE Kit:** The fourth theme that emerged from the interview is the factors influencing the use of the EE Kit. One question was posed to the teachers "What factors influence the use of the EE Kit?" The following are some excerpts from interviewees:

*"Only one set of EE Kit given for each subject. When there is a teacher using the Kit, others cannot use. The problem here is we have to share the EE Kit"* (S2: Geography teacher)

*“Time constraints and audio-visual equipment (LCD) in most classes do not work well”* (W13: English teacher)

*“High level of English Language was used in the EE Kit, students in rural areas a bit slow to understand”* (N8: English teacher)

Four factors were identified, (i) Limited time, (ii) Limited audio-visual equipment (LCD), (iii) Limited access to EE Kit and (iv) Language problem (all modules, except Malay Language).

This qualitative study was limited to 15 teachers from four selected secondary schools in Malaysia and generalization cannot be made for other teachers experience in other secondary schools in Malaysia. The findings from this study show that teacher's perception and acceptance in the implementation of the EE Kit was well received. In terms of EE Kit use, not all the teachers use it. In terms of language, two teachers commented; *“My students are weak in English Language. I think the content of the EE Kit is not practical to be used and need to find another way so that students can understand”* and *“High level of English Language was used in the EE Kit, students in rural areas a bit slow to understand”*. The comment from the geography teacher who teaches in the East Coast state and an English teacher teaching in the North, are reflective of the power command of English Language among students in the rural areas compared to their peers in urban areas. Taking this into consideration, the module writers have to be aware of different level of English Language proficiency between urban and rural schools. As an option, the module has to be bilingual. This observation is supported by extensive research on the declining of English Language among Malaysian school children despite being exposed to English at an earlier age (four to five years old). Several studies have identified factors that contributed to low English literacy. Among these factors are: attitude (viewed as difficult to learn, not perceived as important, unwillingness to learn); geographical location (urban school children were more proficient, partly due to English widely spoken among urban families and social environment that do not encourage them to speak English); the interference of the mother tongue language system; and exam-oriented lessons (examination materials consist of reading and writing, no emphasis on speaking). There are ongoing efforts to make the English subject be more attractive. Activities such as, storytelling, choral speaking, public speaking and debate activities are incorporated.

However, language pundits argued that proficiency in English, especially among rural school children has yet to improve [11, 12].

Not aware of the existence of the EE Kit as well as not clear about the purpose of using the Kit in the classroom seemed to be common among respondents. Among the comments made were: *“Yes I have heard about it but I have not seen it yet”*, *“No I have not heard about it, do we have it in our school?”* *“A lot of materials in the Kit, I cannot find time to use it?”*, *“More reading material?”*. Some teachers mentioned that they like to use the Kit but they do not know where to begin. In response to this, a three-day workshop on EE Kit was carried out. Teachers, who attended this workshop, were taught how to use the Kit. After the workshop, they were clear that the EE Kit is developed to guide teachers incorporating ‘environmental activities’ while teaching individual subjects. Unfortunately, not all teachers had the opportunity to attend the workshop. Due to limited financial resources for training, only selected teachers were invited. Those who attended the workshop were given the responsibility of conducting the in-house training at individual schools, however this has not materialized. A lot of teachers, especially those who have limited environmental knowledge, are still having problem using the EE Kit. They see EE as a separate entity, not to be used inside the classroom. They also had the impression that they have to do all the activities suggested in the Kit. By doing so, they will not have enough time to complete the school syllabus. Due to these constraints, they opted not using the Kit at all. Some of the teachers teaching language subjects did not see the relevance of the EE Kit and were not eager to adopt it. On the other hand, some geography teachers reported using the EE Kit because they have previous exposure with the EE curricula. They see the importance of emphasizing environmental components in their class. They expressed gratitude for the materials and resources provided in the Kit. The EE Kit provides an opportunity for them to apply their environmental knowledge. The finding of this study suggests that teachers, especially those with limited exposure to EE curricula, should receive special training how to use the EE Kit effectively. Studies in the United States showed that most teachers have no or limited training on how to teach EE in class hence they are not comfortable with it [13, 14]. Teachers with limited science knowledge and skills are often afraid to make EE part of their daily routine. They are lack of environmental knowledge and skills to conduct EE activities. The need for teacher training is

highlighted [15, 16]. Rachel and their co-workers found that prior to attending the EE workshop, teachers were uncertain and uncomfortable when asked about the use of environmental topics in the class. After the workshop, they showed increased teaching self efficacy and confidence levels. This new evidence was further supported by Mastrilli [17] who pointed out that EE must be consistently used and fully integrated in the classroom so that the teachers will not have problem teaching environment concepts. Despite the positive perception and acceptance towards the EE Kit, there are barriers that prevent them from fully using them. Ten teachers said they use the EE Kit when it is related to the topic, five teachers said they only use it once in a while. These responses indicated lack of motivation by the teachers. This situation arises because the use of the EE Kit in the classroom is not compulsory. The implementation of the EE Kit depends on individual schools and most importantly, commitment from the school principal. Since all activities related to environmental education are carried out as extracurricular activities, with the introduction of the EE Kit in class, it has created confusion among the teachers. Teachers questioned as to why extracurricular activities are conducted in the classroom. From this interview, four factors were identified as barriers that prevent them from using the EE Kit (i) Not enough time to do in class because they have to finish the school syllabus or perform examination related activities, (ii) Not enough audio-visual equipments, (iii) Limited access to the EE Kit, they have to share and (iv) Academically weak students have problems adapting the EE Kit due to language barrier. These barriers, as expressed by the respondents, are not confined to the Malaysian schools. Earlier studies [18] showed that among the factors that researchers had identified that acts as barriers to EE are; lack of time (in class and preparation); lack of instructional materials; lack of fund; lack of teacher competence; and lack of commitment among teachers. The same view was expressed among teachers in Hong Kong such as “lack of class time” “class size too large” were perceived as barriers to teaching environmental education [19, 20].

### CONCLUSION

From in-depth analysis, this study shows that teacher's acceptance in the implementation of the EE Kit was well received. In terms of EE Kit use, not all the teachers use it. As suggested, there should more hands-on activities to suit the need of less academically oriented

students. Four factors were identified as barriers to using the EE Kit (i) Limited time, (ii) Limited audio-visual equipments, (iii) Limited access to EE Kit and (iv) Language problem (all modules, except Malay Language). They also identify the need for special training to better understand and use the EE Kit efficiently. Training can improve environmental knowledge and awareness and help teachers to learn more about EE activities. In addition, ample teaching resources and instructional guidance are among the factors that can increase self confidence and self efficacy in teaching EE, which will increase the likelihood of teachers attempting to implement the EE components into their classroom. Teachers need a supportive system from the school as well as the Ministry of Education, so that they are given the opportunity to infuse environmental education in their classroom irrespective of the subjects they are teaching.

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