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Level of Knowledge on Environmental Issues and Enviromental Education of Primary Schools' Headmasters in Kuala Lumpur, Malaysia

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Abstract: This study focuses on the level of knowledge on various environmental issues and environmental education carried out on 30 primary schools' headmasters in Kuala Lumpur. A set of questionnaire which comprised of 20 questions was applied as the instrument for data collection. The result reveals that the headmasters' level of knowledge on environmental issues and environmental education is overall moderate (Mean score = 69.5%, S.D = 16.83). The study also finds that headmasters are more sensitive to environmental issues that are locally present such as extinction of animals and haze, but are less sensitive to issues that do not happen locally such as the El Nino phenomenon. This is due to less exposure and due to little understanding on these issues. In terms of knowledge of environmental education, this study finds that headmasters are less aware to the national implementation of cross-curriculum environmental education in schools. Cross curriculum environmental education has been moderately implemented in Malaysian schools in Malaysia since 199. Results of the study are used by the Curriculum Development Centre, the Institute of Aminuddin Baki (IAB) and the Department of Environment (DOE) to design courses for headmasters to manage environmental education in schools.

Key words: Environmental knowledge · Environmental issues · Environmental education · Headmaster

INTRODUCTION

Every day, human suffers various environmental issues. Some of the deepening issues are water pollution, air, soil, noise, badly managed waste disposal, landslide, flash flood, global warming and so on. The most effective way to heighten awareness is through education. Education has been accepted as a basic tool to control the environment and to control its sustainable development since the Tbilisi Conference in 1977 [1]. School will be one of the main ways to address problems related to the environment [2].

Thus, a resolution was reached at the Conference the Commonwealth Heads of Government on October 21, 1989, the Langkawi Declaration on improving the quality of the environment. Some of the actions agreed are to plan and to implement effective educational programs to ensure that all students are exposed to environmental education programs [3]. Environmental education in Malaysian schools starts in 1998 after the publication of the Teacher's Handbook of Environmental Education by the Curriculum Development Centre, Ministry of Education. Environmental education in Malaysia is not taught as a single subject, but as part of all subjects. Environmental education is also taught through extra-curricular activities such as the Environmental Club.

In order to achieve national environmental education, each party must play a role. This study focuses on examining the level of environmental knowledge of teachers, particularly on environmental issues and environmental education. Headmasters should have high degree of knowledge on the environment so that they can be models and sources of references for teachers and students. Quality school leaders are the main factor in

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excellent schools. Leaders must be able to formulate strategies based on the requirements of the Malaysia National Education Philosophy, Malaysia Education Development Mission 2001-2010 in line with Malaysia Vision 2020 [4].

METHODOLOGY

Sampling Method: This research is a descriptive research on primary schools' headmasters in Kuala Lumpur, Malaysia. A descriptive research aims to explain a phenomenon that is taking place or aims to explore an area that has not been reviewed or less [5]. Its research method is quantitative.

There are 30 headmasters from 30 primary schools in Kuala Lumpur involved. According to Gay and Airasian [6], a minimum sample size for a statistical analysis is 30. Minimum sample size is chosen because of limitation on researcher's capacity and researcher's fund to align with headmasters' tight schedules. The 30 schools are from four different zones which are Bangsar zone, Pudu zone, Keramat zone and Sentul zone. The chosen headmasters have at least given services for two years at their current schools.

Instrumentation: The instrument for this research is based on questionnaires designed by the researcher. The instrument has been examined by an environmental expert and two educational experts. The instrument has 20 items divided into two components, environmental issues and environmental education with 10 items each. The multiple choice items are used. Each question represents a score of 1 for a successful answer. Therefore, the total score is 20 marks out of 20 questions. Interpretation of mean scores of respondent's environmental knowledge is measured in percentage. Respondents who score 0% to 24% have a very low knowledge, 25% to 49% have a low knowledge, 50% to 74% have a moderate knowledge and 75% to 100% have a high knowledge based on Kartini Abdul Mutalib [7].

Data Analysis: A total of 30 questionnaires received from the headmaster has been analyzed. Descriptive statistical technique was used to analyze data from the questionnaires. Descriptive statistical analysis involves the calculation of information using frequency, percentage, mean and standard deviation.

RESULTS AND DISCUSSION

Headmaster's Level of Environmental Knowledge: Based on Table 1, the overall level of headmaster's environmental knowledge was moderate (Mean score = 69.5%, SD = 16.83). The headmaster's level of knowledge is at a moderate level for components of environmental issues (Mean score = 71.67%, SD = 19:13) and component of environmental education (Mean score = 67.33%, SD = 18:37).

Table 1: The percentage of the mean scores and the level of knowledge of the two components of environmental knowledge

Components of knowledge on the environment	Mean scores (%)	The level of knowledge
Knowledge of environmental issues	71.67	Moderate
Knowledge of environmental education	67.33	Moderate
Knowledge of the environment	69.50	Moderate

Table 2: Knowledge of environmental issues among headmaster in Kuala Lumpur

Item	Knowledge about environmental issues	Number and %Correct
A1	Celebration of World Environment Day	20 (66.7%)
A2	Animals that are threatened by extinction	27 (90%)
A3	Effects of ozone depletion	25 (83.3%)
A4	Causes of haze	26 (86.7%)
A5	Facts on biodiversity	24 (80%)
A6	Facts on carbon dioxide	25 (83.3%)
A7	Effects of acid rain	6 (20%)
A8	Causes phenomenon of the El Nino	24 (80%)
A9	Organizations involved in environmental management	20 (66.7%)
A10	Cause of flash floods in the cities of Malaysia	
	Minimum percentage	20%
	Maximum Percentage	90%

Table 3: Knowledge of environmental education among headmaster in Kuala Lumpur

Item	Knowledge about environmental issues	Number and %Correct
B11	Household waste management	28 (93.3%)
B12	Environmentally friendly practices	26 (86.7%)
B13	Reduction on carbon monoxide emission into the atmosphere	28 (93.3%)
B14	Teacher's Handbook of Environmental Education Cross Curriculum	15 (50%)
B15	The purpose of " Environmental Savior Project "" implemented	5 (16.7%)
B16	Components in the implementation of the Sustainable School	22 (73.3%)
B17	Principles ingrained in the Environmental Education Cross Curriculum	16 (53.3%)
B18	Stations of environmental education in schools	27 (90%)
B19	Signing of the Langkawi Declaration 1989	20 (66.7%)
B20	The subjects of environmental education incorporated in it.	15 (50%)
	Minimum percentage	16.7%
	Maximum percentage	93.3%

For analytical purposes of each item in the environmental knowledge component, a value 0 is given for an incorrect answer while a value of 1 for a correct answer. The percentages of correct answers are shown in Table 2 and Table 3. Based on Table 2, only six respondents which are 20% gave the correct answer for causes of phenomenon of El Nino. The maximum percentage of a correct answer is 90% which is animals threatened by extinction, 27 respondents gave the correct answer.

Based on Table 3, the minimum percentage of correct answer for knowledge on environmental education is 16.7% which is the purpose of "Environmental Savior Project" and only five respondents gave the correct answer. The maximum percentage of a correct answer is 93.3% which is household waste management and how to reduce the emission of carbon monoxide into the atmosphere and 28 respondents gave the correct answer.

DISCUSSION

The findings shows that the level of knowledge of primary schools' headmasters in Kuala Lumpur is moderate (Mean score = 69.5%, SD= 16.83). Similar studies were also carried out by Azizi Muda *et al*. [8] on 60 secondary schools' principals in the state of Kedah and Penang. Their finding shows that the principal's level of environmental knowledge is moderate.

In general, headmasters are more sensitive to environmental issues that locally present such as extinction of animals, ozone depletion and haze, but less sensitive to issues that are not locally present such as the El Nino phenomenon. This is due to less exposure and due to little understanding on these issues. In terms of knowledge on environmental education, the level is moderate. A component of environmental education which is Knowledge on "Environmental Savior Project" shows the weakest level. The "Environmental Savior Project " aims to recognize students who are actively involved in preserving and conserving the environment. This project is collaboration between the Ministry of Education and the Department of the Environment. Many headmasters are not aware of this project may be because of lack of exposure on the project. Most of the respondents were more familiar with the "Sustainable School" program. In addition to handling questionnaires to headmasters, the researcher also interviewed few headmasters. From the interviews, few headmasters do not sure about the existence of Teachers Handbook of Environmental Education Cross Curriculum since the book had not been issued since 1998. If headmasters are not decisive in the implementation of environmental education in schools, the teachers cannot perform to the best educational environment in the classroom. Studies which have conducted by Mohamed Zohir Ahmad and Sharifah Syed Norhaidah Idros [9] to 140 in-service teachers shows that about 65.3% of respondents said they failed to integrate environmental education in their teaching. Similar study was also conducted by Abdul Rashid Mohamed *et al*. [10] with 140 teachers in the service shows that about 90% of respondents failed to use or to refer to the Teachers Handbook of Environmental Education Cross Curriculum when teaching in the classroom.

As a result, several steps need to be taken to ensure that the headmasters get better exposure to environmental issues and environmental education. Headmasters are recommended to grasp more in-depth knowledge on environment through reading. Headmasters need to instill

positive values on environment so that they can be leading examples for teachers and students. To increase the number of schools' citizens that care for environment, schools need to add reference materials on environment such as books, magazines, videos, posters and so on. Schools need to transform environmental education as a fun process for teachers to teach and students to learn instead of burdening them. The school also may provide environment-related activities such as the Environment Day celebrations at the school, drawing competition, innovation and collaborative waste materials. The Ministry of Education, Department of Environment (DOE) and Institute of Aminuddin Baki (IAB, an institute for headmasters) also play a role in giving more exposure to headmasters on environment. DOE can work with IAB to provide courses related to implementation of environmental education apart from headmasters' leadership courses. Schools also can request DOE to give lectures, seminars or courses on environment. Cooperation with other agencies such as WWF-Malaysia, Petronas, Alam Flora and Shell also help to increase knowledge on environment. More efforts need to be put forward to ensure that the Environmental Education Cross Curriculum achieve its objectives in Malaysia inline with the National Philosophy of Education although the guide book has not been changed since 1998.

Headmaster's background

Gender		Age (years)		Experience as a headmaster (years)		Academic qualification	
Male	47%	41 - 45	3%	2 – 5	20%	Diploma	47%
Female	53%	46 - 50	33%	6 – 10	60%	Bachelor degree	40%
		□ 51	64%	□ 11	20%	Master degree	13%

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