

Teachers Knowledge, Attitude, and Awareness of Sustainable Development Education Among Urban Malaysian School

Abdul Ghani Kanesan Abdullah and Aziah binti Ismail

University Science of Malaysia, Penang, Malaysia
e-mail: agk@usm.my

Abstract. This study aims to (a) identify the levels of knowledge, attitude, and awareness of teachers with regard to education for sustainable development; (b) identify the levels of knowledge about environmental education, (c) examine teaching methods to achieve sustainable development education, (d) examine the relationship of environmental education knowledge and sustainable education knowledge, attitude, and awareness. Teachers ($N = 104$) were randomly selected from two northern states of Peninsular Malaysia to participate in this study. Data were collected through a questionnaire adapted from Clarke (1996). Results indicate 50% of the respondents did not understand nor have sufficient knowledge on education for sustainable development. Only 10 percent of the respondents were well versed with education for sustainable development compared to 40% of the respondents with moderate knowledge or understanding of the subject matter. Respondents preferred discussion, debate, and research projects to disseminate knowledge on environmental education. There is a significant (moderate) relationship between knowledge of environmental education and understanding ($r = 0.583$; $p < 0.05$); attitude ($r = 0.531$; $p < 0.05$); and awareness ($r = 0.562$; $p < 0.05$).

Key words: education, environmental, sustainable development, knowledge, attitude, awareness

Abstrak. Studi ini bertujuan (a) mengenali tingkat pengetahuan, sikap, dan kesadaran guru terkait pendidikan pengembangan berkesinambungan, (b) mengenali tingkat pengetahuan tentang pendidikan lingkungan, (c) menelaah metode pengajaran untuk mencapai pendidikan pengembangan berkesinambungan, (d) menelaah hubungan pengetahuan pendidikan lingkungan dan pengetahuan, sikap, dan kesadaran pendidikan berkesinambungan. Sejumlah guru ($N = 104$) dipilih secara acak dari dua negara bagian di Utara semenanjung Malaysia untuk berpartisipasi dalam studi ini. Data diperoleh melalui hasil adaptasi kuesioner Clark (1996). Hasil menunjukkan bahwa 50% responden tidak mengerti dan tidak memiliki pengetahuan yang cukup tentang pendidikan pengembangan berkesinambungan. Hanya 10 % responden yang amat paham dibandingkan dengan 40% responden dengan pengetahuan yang cukup atau mengerti tentang masalahnya. Para responden lebih memilih diskusi, debat, dan proyek penelitian untuk menyebarkan pengetahuan tentang pendidikan lingkungan. Terdapat hubungan yang bermakna antara pengetahuan pendidikan lingkungan dan pengertian ($r = 0.583$; $p < 0.05$), sikap ($r = 0.531$, $p < 0.05$), dan kesadaran ($r = 0.562$; $p < 0.05$).

Kata kunci: pendidikan, lingkungan, pengembangan berkesinambungan, pengetahuan, sikap, kesadaran

Apart from the school principal, teachers play an important role in the implementation of a curriculum or school policy. Teachers are the protagonist in the class-

room and it is the similar situation when it comes to environmental education. The success of the environmental education in the classroom depends on teachers. They play vital in ensuring the successful implementation of environmental education among students (Said, Ahmadun, Paim, & Masud, 2003). Teachers with adequate knowledge about environment, are basically positive minded and have the awareness about the importance of environment, which hence found to be able to disseminate effective lesson and teaching pertaining to it. (Clarke, 1996). Meanwhile, teachers with lack of knowledge and information, skills and commitment

* This article was presented at the International Conference on Improving the Quality of Human Life: Multi-disciplinary Approach on Strategic Relevance for Urban Issues, on September 6-7, 2007 in Surabaya. Courtesy of Dr. Abdul Ghani Kanesan Abdullah and Aziah binti Ismail, School of Educational Programs and Institute for Research in Molecular Medicine (INFORMM), University Science of Malaysia, Minden, 11800 Pulau Pinang, Malaysia.

towards environmentalized curriculum of the environmental education will be an obstacle in the understanding and acquisition of environmental literacy among the students (Wilke, 1985).

Thus, relevant studies pertinent to knowledge and teaching practices on environmental education are necessary. This is due to the primary aim of the environmental education, which is to provide sustainable environment for people to reside and work. Sustainable development refers to natural environment, economical development, social structure that are dependable with each other and interactiveness of these three elements that contributes to sustainable development and living that is with the improvement of quality of life and the environment. Environmental education is the foundation to the education for sustainable development.

The aim of the study is to (a) identify the level of understanding and knowledge of teachers pertaining to environmental education, (b) identify how teachers acquire information in regards to environment, (c) identify how teachers sustain the environmental education elements in teaching and learning process, (d) identify the relation between the knowledge of environmental education with knowledge, attitude and awareness of environmental education, and identify the level of teachers knowledge pertaining to education for sustainable development.

Method

Data for the research were collected through the

use of questionnaires adapted from Clarke (1996), comprising items of factual knowledge (10 items) and conceptual knowledge (9 items). Meanwhile, questionnaires related to ways on how teachers acquire information about environment, approaches in teaching about environment and the understanding of Education For Sustainable Development was prepared by the researcher. The Cronbach Alpha reliability for all the items is 0.82. A total of 104 teachers who was selected in random from secondary schools, located in urban surrounding from two states from the North of Malaysia Peninsula had returned the questionnaires in complete.

Results

Level of Knowledge in Regards to Environmental Education

Findings as shown on Figure 1. indicates that a total of 55 respondents comprising 53% is found to have average understanding of environmental education (EE). This is compared to 27 respondents (26%) with marginally low understanding of EE. Meanwhile, only 21 % (22 respondents) can be categorized for having high level of understanding with knowledge pertaining to EE. Through the result from this findings, it can be concluded that a large total of the respondents have average and high level of understanding on EE.

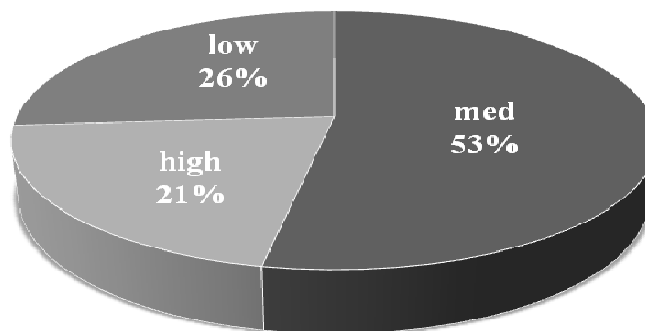


Figure 1. Level of knowledge in regards to environmental education

Method of Acquiring Information About Environment

Findings as shown on Table 1 shows that basically there are three major methods that dominates the way teachers acquire and search for information on environment. The methods are through discussion, internet and catalogs. In general it was found that teachers frequently acquire knowledge through discussion (min = 2.8); internet (min = 2.7) and catalogue (min = 2.6). Even though so, workshops, post or conference methods are largely not used by teachers from urban surrounding in the process of

acquiring information pertaining to Environmental Education.

Teaching Method and Approaches of Environmental Education

The findings as shown on Table 2 illustrates that the method and approaches that is prominent popular among teachers in urban schools pertinent to teaching of environmental education is through discussion (min = 2.78), followed by research project assignments (min = 2.59); debates (min = 2.56).

Table 1
Method of Acquiring Information About Environment

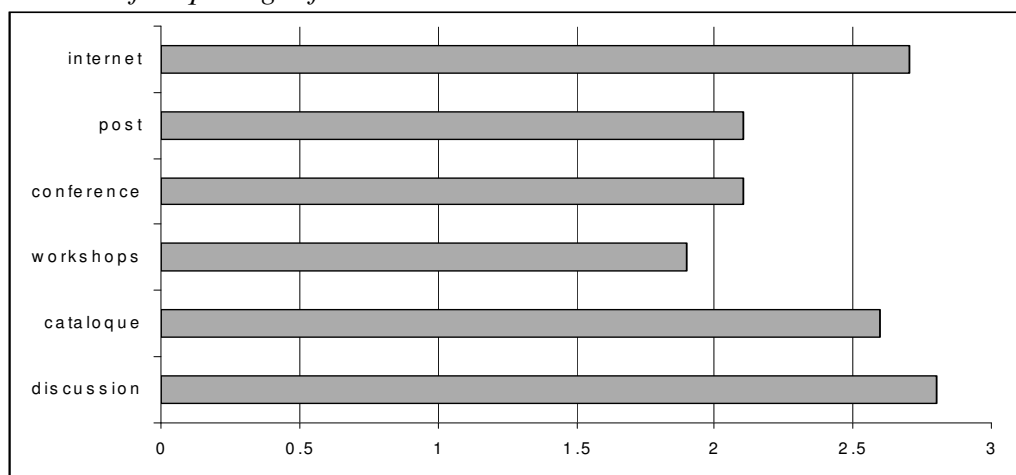


Table 2
Teaching Method and Approaches of Environmental Education

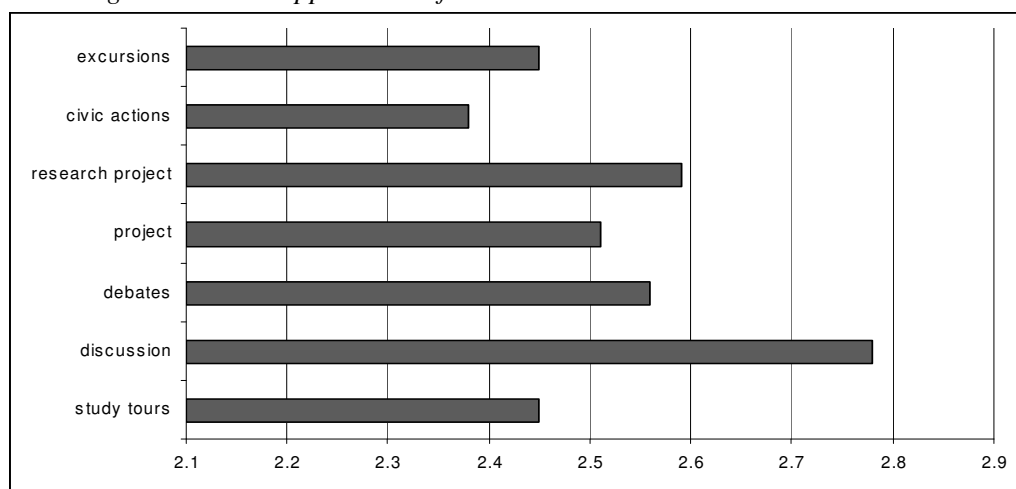
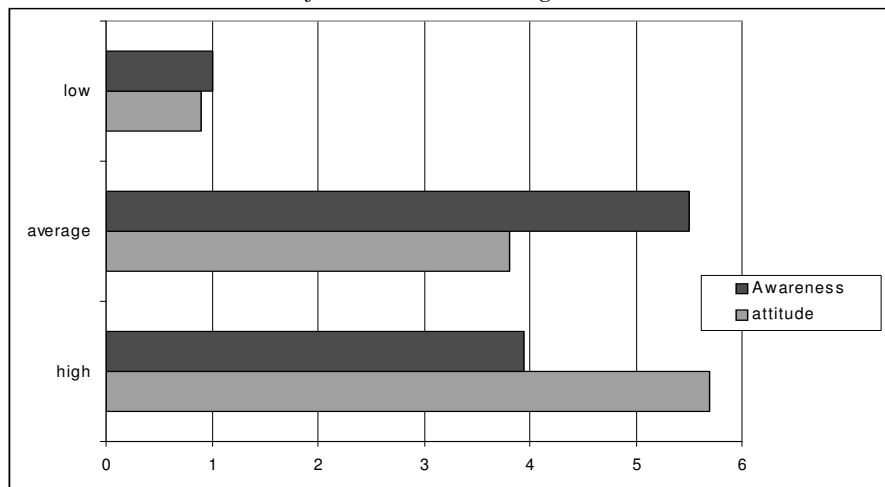


Table 3
Attitude and Awareness of Teacher Pertaining to Environmental Education



Whereas, the methods utilizing civic actions (min = 2.35) and excursions (min = 2.45) are found to be not frequently used by teachers during the teaching of environmental education.

Attitude and Awareness of Teacher Pertaining to Environmental Education

The result on Table 3 shows that most of teachers in urban schools have high level of awareness in regards to environment. Nevertheless, most of the respondents do not have positive attitude towards environment. Whereby, most of the teachers involved in the research was found to have average attitude towards environment .

The Relationship Between Knowledge, Attitude and Awareness towards Environmental Education

The correlation analysis (see Table 4) shows that there are significant relationship between level of knowledge and level of attitude ($r = 0.331$; $p < 0.01$); and level of awareness ($r = 0.384$; $p < 0.01$) towards Environmental Education.

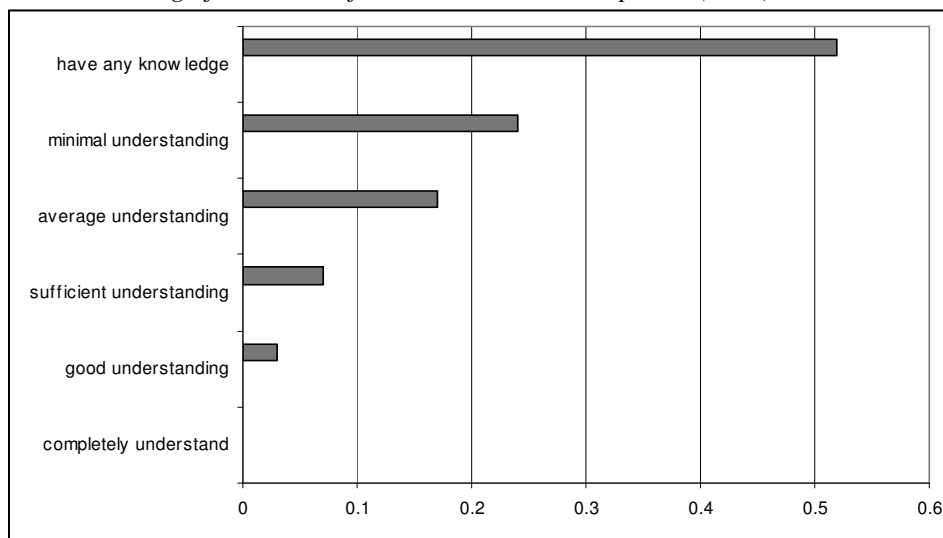
Understanding of Education for Sustainable Development (ESD)

Findings of the research (see Table 5) indicates that 76% majority from the respondents state that

Table 4
The Relationship Between Knowledge, Attitude, and Awareness Towards Environmental Education

Correlations					
Spearman's rho	ttahu		ttahu	tsikap	tsedar
		Correlation Coefficient	1.000	0.331**	0.384**
		Sig. (2-tailed)	.	0.001	0.000
		N	104	104	104
	tsikap	Correlation Coefficient	0.331**	1.000	0.582**
		Sig. (2-tailed)	0.001	.	0.000
		N	104	104	104
	tsedar	Correlation Coefficient	0.384**	0.582**	1.000
		Sig. (2-tailed)	0.000	0.000	
		N	104	104	104

Table 5
Understanding of Education for Sustainable Development (ESD)



they do not comprehend or have any knowledge about ESD (52%) and a total of 24% have low level of understanding about ESD. Meanwhile none of the teachers from the urban schools are found to completely understand the fundamental of ESD. Nevertheless, only minimal fraction of less than 10% from the respondents that admit to have good understanding or sufficient understanding about ESD. Meanwhile the remaining respondents are categorized under the group with average understanding or minimal understanding of ESD.

Discussion and Recommendation

From the aspect of understanding about environmental education, teachers from urban schools, in majority have medium and high level of knowledge pertaining to Environmental Education. This result is coherent with the findings of Said et. al., (2003) on research conducted on 285 teachers from Selangor. This indicates that from the perspective of knowledge, teachers from urban schools have commendable understanding. High level of knowledge would be able to assist teachers in the teaching process and leads the teachers towards being competent in it. Teachers should possess high level of knowledge pertaining to environment to enable them to

effectively present the lesson. If teachers are weak in knowledge, then, their teaching practice in classroom would be limited (Gunstone & White, 1977). The research of Lee (1996) on teachers in Hong Kong was found to indicate that a fraction of teachers are not competent in teaching environmental education due to inefficiency and lack of knowledge and skills that are relevant to it.

Most teachers involved in the research are categorized under mediocre level of attitude even though possess high level of awareness in regards to environment. This shows that high level of awareness is not a contributing factor in instilling positive attitude towards environment. As teachers teaching environmental education, they should have both the awareness and attitude towards environment. The attitude of teachers with the environment subject and environmental education influences the teachers teaching and students learning process.

Correlation analysis illustrates that there are significant relationship between level of knowledge and level of attitude of teachers towards environment. The result shows that good level knowledge supports the positive development of attitude in relation to environment. This results correlates the view of Kunz (cited in Krantz, 2002) where teachers with competent knowledge of environmental concepts possess positive attitude towards teaching

of environmental education. Thus, teachers should have relevantly good level of understanding pertaining to environmental education. Combining the Theory of Planned Behaviour (Ajzen, 1985) and Environmental Education Commitment Model (Shuman & Ham, 1977), positive attitude will effect to the commitment of teachers in teaching of environmental education. The higher, the positive attitude towards environment are, the higher are the commitment of teachers, even though they face obstacles in classroom implementation. Meanwhile, lower level of attitude of teachers towards environmental education is found to have significant relation to average strength with level of awareness in regards to environmental education. In improving the knowledge, more workshops and conferences need to be organized in the form of in service training for teachers.

The findings above shows that the workshop and conference methodology are rarely used by teachers in urban schools in the quest to acquire information pertaining to environmental education. Enhancing programs on knowledge and delivery methods should be given emphasis and augmented in teacher training level in ensuring teachers readiness with environmental education and Education of Sustainable Education.

The saddening matters is that after more than 15 years (since the Rio De Janerio Earth Conference) and the declaration of year 2005 – 2014 as the United Nations Decade of Education for Sustainable Education through the 57/254 resolution, majority of teachers under research were found to have no understanding or low understanding about Education for sustainable development. Efforts need to be emphasized to ensure that teachers are sensitive with current development, especially in relation directly with teaching profession and teaching field. Different improvement of the direction and approaches in relation with environmental education for environmental education for sustainability with relevant political efforts, nature lovers and scientific with environmental education during the 90's and 80's (Tilbury, 1997) requires knowledge and teachers new perception pertinent to environmental education and the relationship with education for sustainable development.

References

- Ajzen, I. (1985). From intention to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action-control: From cognition to behavior*. Heidelberg: Springer.
- Clarke, B. (1996) Environmental attitudes and knowledge of Year 11 students in a Queensland High School. *Australian Journal of Environmental Education*, 12, 19-26.
- Cuthill, M. (1998). Exploring the concept of 'Education for a Sustainable World': Report of work in progress. *Australian Journal of Environmental Education*, 13, 49-56.
- Gunstone, R. F., & White, R. T. (1997). Teacher's attitudes about physics classroom practice. *International Newsletter on Physics Education*, 41, 47-63.
- Krantz, P. D. (2002). *A study of the impact of environmental education workshops on teachers' attitude and efficacy*. Ph.D. Dissertation. University of Missouri-Columbia. Umi ProQuest Digital Dissertations.
- Lee, C. K. (1996). *Environmental Education in the Primary Curriculum in Hong Kong*, Unpublished Ph.D. Thesis. Division of Education, The Chinese University of Hong Kong Graduate School. <http://www.fed.cuhk.edu.hk/en/cuphd/96cklee/conclusion.htm> (24.7.04).
- Said, A. M., Ahmadun, F-R, Paim, L. Hj., Masud, J. (2003) Environmental concerns, knowledge and practices gap among Malaysian teachers, *International Journal of Sustainability in Higher Education*, 4(4), 305- 318.
- Shuman D. K., & Ham, S. H. (1997). Towards a theory of commitment to environmental education teaching, *Journal of Environmental Education*, 28(2), 25-33.
- Tilbury, D. (1997). Environmental education and development education: Teaching geography for a sustainable world In D. Tilbury & M. Williams (Eds.). *Teaching and learning geography*. London: Routledge.
- Wilke, (1985). Mandating preservice environmental education teacher training: The Wisconsin experience." *Journal of Environmental Education*, 17(1), 1 – 8.