



## Lifelong Learning through Distance Education for Rural Schools in Malaysia

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### ABSTRACT :

This paper investigates the role of distance education in encouraging lifelong learning among rural students on the West Coast of Sabah, Malaysia. Two national secondary schools, Sekolah Menengah Kebangsaan (SMK) Badin and SMK St. John in the Tuaran district, West Coast of Sabah, were chosen for this study. At the preliminary stage of the study, a total of 64 selected rural students were given questionnaires regarding their opinions on their science learning experiences. There were five questions pertaining to lifelong learning which were included in the questionnaires. Students were given teaching and learning modules on one of the Form 2 (year 8) science chapters. At the end of the study, these students were given the questionnaire as feedback forms pertaining to the researcher's teaching method. An analysis of the questionnaire revealed two salient findings : 84 percent of the respondents were interested in science, and 88 percent wanted to learn science in depth, other than using the text book. Meanwhile, a comparison between the students' pre- and post- written test marks showed an improvement over 40 percent, and this correlated with the majority who expressed great interest, through the questionnaires, in science-related activities. Based on the questionnaire feedback, 93 percent were inspired to pursue science courses in universities. This indicated that the students intended to make science-related subjects as their priority in earning a degree and thereby obtain science-based jobs after graduation.

### 1. INTRODUCTION :

Malaysia endorses the motto "Education for Life" for its citizens (Yip Kai Leong, 1997), which empowers Malaysians to create a purposeful life with the knowledge they gain. Education for life also means "to embrace the whole of society and the entire lifespan of the individual" (Faure, 1972), linking to lifelong learning. Lifelong learning in the Malaysian context is associated with obtaining diplomas, certificates or degrees from higher learning institutions (Gan, 2005). What motivates individuals to pursue higher education? According to Wlodkowski (1991), during their school-going days, they were inspired by their own cultures, families, schools and

their willpower to study. Motivated children have the tendencies to experiment "that will lead to occupational success in the 21st century and benefit the positive evolution of society" (Wlodkowski, 1991). Tengku Abdul Aziz's findings to predict academic achievement of rural children (1989) also echoed Wlodkowski's outcomes, with the addition of home environment and parents' academic support.

Based on the figures presented by the United Nations Development Program [UNDP], only five percent or 107,115 Sabah secondary students pursued tertiary education (2007). However, no official data were given regarding the number of, specifically, Sabah *rural* secondary students enrolled into universities and colleges. These

students were at risk of not continuing their education until the tertiary levels, as one of the reasons would be the lack of parental participation (Boylan & Rahman, 1996).

An eminent Malaysian educationist, Professor Awang Had Salleh (1983), stated that poverty results in low educational achievement. Due to their very low level of education, poor rural parents could not assist in their children's school-works. In addition, their children may also be needed to accompany them to perform traditional village occupations such as chili farming (UNESCO, 2001), paddy and rubber trees planting, as well as small-scale fishing (Abdullah, Aziz & Mohamad, 1987). Parents whose children excelled in their studies were more interested in gaining formal education. United Nations Development Program (UNDP) stated that 72 percent of the schools in Sabah are situated in rural areas. The Sabah Education Department stated that 20.5 percent of Tuaran's population, the chosen rural district, live in poverty (*ibid*, 2007).

Therefore, one way to encourage lifelong learning among Sabah rural secondary students is through distance education. In the United States of America (USA), many school districts incorporate distance education for various courses. For example, students would study foreign languages via videoconferencing, cable TV and satellite courses to listen and repeat after the instructors' guidance (Hannum, Irvin, Banks & Farmer, 2009). In Australia, courses correspondences played a significant role for rural students to study crucial primary school subjects in the 1900s (Barlow, 1922). Direct teaching via radio had stimulated rural students' interest in education, whether in the Australian interiors (Higgins, 1993) or in rural Mongolia (Lockheed & Hanushek, 1988).

The focus of this study was on the rural secondary students of Tuaran on the West Coast of Sabah. Though there are other Sabah districts which have higher poverty rates than Tuaran, this study takes into account the availability of the researchers' work schedules to travel and teach the rural students on a regular basis, which will be elaborated in the Methods section.

## 2. METHODS :

Two secondary schools in the West Coast of Sabah were selected for this study, namely Sekolah Menengah Kebangsaan (SMK) Badin and SMK St. John. Tuaran is chosen because it is 40 to 50 minutes from Kota Kinabalu, the capital of Sabah and is reachable by any transportation. In addition, the traveling times and the module teaching periods, needed to be planned meticulously. Both schools' authorities revealed that other researchers had previously conducted studies at their respective schools, thus easing procedures to obtain permission to conduct this study. The chosen students consisted of 27 hostel students of SMK Badin, and 37 of students from the top Form 2 class of SMK St. John. The methods were modeled on previous researches conducted respectively in Alaska, USA (Lipka & Adams, 2004); Ludhiana, India (Singh, 2002) and Victoria, Australia (Critchley, DeWitt, Khan & Liaw, 2007). The distance education mode used in this study was a module. It is a compilation of organized learning units, all in a book, for students to read, carry out activities and answer self-tests at their own pace (Latiff, Ahmad & Taib, 1983).

The experimented students were tested preliminary using their respective Science teachers' questions, and the marks obtained were categorized as Pre-Test marks in this study. These results were later used to compare with the Post-Test marks obtained at the end of the module teaching session. The researcher taught at both schools six times (late February 2009 until late March 2009), with each session lasting for two hours. At the preliminary stage of the study, students were given questionnaires through their science teachers, consisting of 40 Likert-scale questions with the scale range of one (Very Disagree) to five (Very Agree). These questions were modeled based on The Colorado Learning Attitudes about Science Survey, which were given to 5000 American students, to gauge their perceptions on physics. The word "physics" was changed to "science" to suit the Form 2 syllabus of the experimented students.

The students had to answer and hand them back to the researcher during the first session. They were taught face-to-face using the teaching Form 2 science module focused on “Light” (“Cahaya” in the Malay language). During the teaching sessions, students were rewarded with small gifts as encouragement to answer the researcher’s questions. They were also provided with inexpensive tools to carry out three of the module’s experiments entitled “Shadow Drama” as shown in Figure 1, “Is the Light

Moving in a Straight Line?” and “Bubble Show” also shown here in Figure 2 below, to investigate the physics of light refraction and light reflection.

After completing the module, the students were assessed in the following week, using a questionnaire with 20 objective questions and 3 subjective questions, to gauge their understanding on the topic. Finally, they were given feedback forms pertaining to the teaching module used during the researcher’s teaching session.



Figure 1. The “Shadow Drama” session, where students told a story with hand shadows

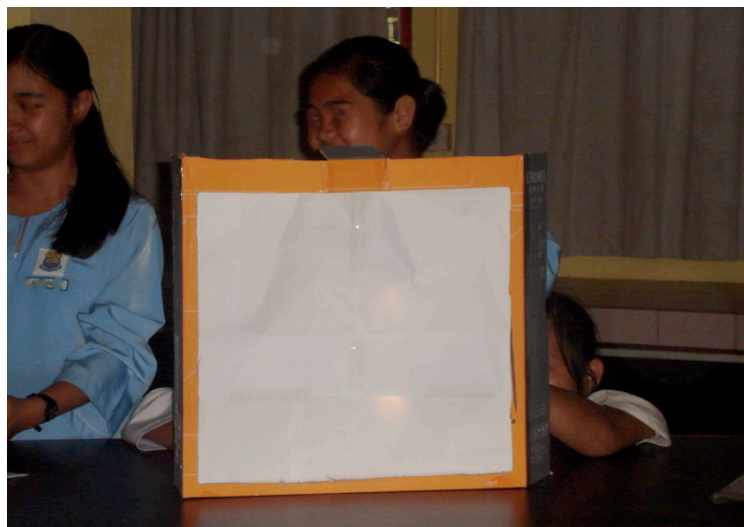


Figure 2. The treated students used plastic lids to create medium-sized bubbles.

### 3. RESULTS :

Five questions from the preliminary study questionnaire pertaining to lifelong learning were analyzed. The first question, *“I am not satisfied until I understand why something works the way it does”*, garnered 73 percent agreement. The main key to learning science is interest. The deeper the need to comprehend a science phenomenon, the more curious students will be. This supported by a study conducted at seven Australian secondary schools by Bryce & Withers (2003) who found a strong correlation between curiosity and the level of understanding with a value of 0.757. In addition, a random telephone survey conducted on Californian residents in the United States revealed that 43 percent believed “science understanding was primarily acquired for reasons related to personal interest, need and/or curiosity (Falk, Storksdieck & Dierking 2007).

Next, majority of the experimented students (84 percent) professed their interest in science and 54 students (84 percent) answered positively to the third question *“Almost everyone will know science in depth if they work hard to find the solutions”*. The fourth question, *“Learning science has altered my idea in how this world functions”* was agreed by 70 percent of students. This finding is crucial as Hapkiewicz (1992 ; 1999) and Berthelsen (1999) listed out numerous scientific misconceptions conceived by selected science students and also adults. Among the inaccurate conceptions were *“Light is not necessary to see since we can see a little in a dark room”*, *“Light travels from the eyes to the object”*, *“Sunlight is different from other sources of light because it contains no color”* and lastly, *“Moon and sun are about the same size”*.

This study discovered 88 percent wanted to learn more about science in depth (other than using the science text book). The Colorado Learning Attitudes about Science Survey discovered that the possibilities of an American student taking science as a major subject highly correlates with one’s personal interest survey scores (Adams, *et al.*, 2006).

The experimented group's Pre-Test mean mark was at 32.02 percent. After applying the module, the group’s mean marks for Post-Test increased to 72.63 percent, a difference of 40.61 percent. This result was expected as the research by Lipka & Adams (2004) also showed an improvement in an experiment on rural treated students' academic performance, with an increased average mark between 30.21 percent to 37.19 percent. In addition, a research paper by Singh (2003) reported that his experimented students had gained “significantly in knowledge after going through two teaching and learning modules in Physiology and gave positive feedbacks about them”.

Meanwhile, in the post study feedback forms, 93 percent of the students expressed interest in furthering their studies in science related fields when they reach tertiary level. This expectation matches that of Critchley and researchers’ observation (2007) where 70 percent of the participants who used a learning module on rural health issues reported an increase interest in the topic, while 47 percent expressed interest in serving the rural areas.

### 4. CONCLUSION :

The results have shown that distance education, through module usage, have significantly improved the selected rural students’ academic performances and also their interest in science due to the more casual, and two-way communication between students and teacher. This study is vital, as it could give hope to rural students to break the chain of poverty, as well as to cultivate a desire for gaining knowledge as part of their lifelong learning. If more experts in science-related backgrounds could contribute their knowledge to develop easy-to-use modules, the prospects of Malaysian rural distance education can be widened, and in the end, benefit rural society.

The students' positive responses indicate a good sign for lifelong learning. With a science-related background to rely on after they graduated from higher institutions, they

would strive to look for career prospects which are also science-related. This brings hope to the rural community, who are able to change their mindsets about education and also cultivate the eagerness to learn, and thus to improve their lifestyles.

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