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**STUDENTS' EVALUATION OF ORAL HEALTH EDUCATION AVA TEACHING MODULE**

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**Abstract**

Audio-visual aids were widely used in raising dental awareness of the public. Faculty of Dentistry, Universiti Kebangsaan Malaysia introduced a 20-hour 'Oral Health Education – Audio-Visual Aids' (OHE-AVA) module requiring students to plan, produce, use and evaluate OHE-AVA materials for individual patients and in the community. Course evaluation was carried out at the end of the module to assess fourth-year dental students' perception on the conduct and usefulness of 'OHE-AVA' as a learning module in the undergraduate curriculum. Self-administered questionnaires with five-point Likert Scales on skills development and teaching-learning environment were disseminated to two Year Four cohorts. A total of 123 completed questionnaires were returned. In 'Development of Abilities', most students agreed on improvement of critical thinking, creative thinking, self-managed learning, adaptability, problem solving, communication skills and computer literacy. In contrast, the responses for interpersonal skills and group work development were poorer (1.6% and 4.9% disagreement). Responses were positive for 'Teaching and Learning Environment', except for Feedback to Assist Learning (21.1% and 22.8% undecided). Disagreement was reported higher in the two statements on Workload, scoring 7.3% and 4.9% respectively. Nevertheless, most students observed the relevance of the module to the Dental Public Health course (86.9%), to other modules (86.8%) and to the entire dental programme (89.4%). Of the 123 students, 87.8% agreed that learning objectives were stated beforehand and 84.5% agreed that the course objectives were met. In conclusion, the OHE-AVA module was positively rated by students. Nonetheless, concerns regarding students' interaction, assessment and workload could be improved.

**Keywords:** audio visual aid, community dentistry, dental curriculum, dental education, dental health education, public health dentistry

**INTRODUCTION**

Malaysia is no exception to the oral health inequalities observed worldwide. Although caries prevalence decreased over the years, it remains high among certain groups. Hence, current preventive efforts are customized to groups such as children, elderly, antenatal mothers, adolescents and adults (Ministry of Health Malaysia, 2011). One of the strategies is to impart health promoting knowledge and practices in community and healthcare settings, as suggested by World Health Organization (Petersen, 2003).

Although the most common form of delivering dental knowledge is by verbal provision of information (Humphris & Ling, 2000), the use of non-verbal adjuncts such as dental health publications can enhance communication. Media such as demonstration models, leaflets,

video-films, computers, and books can be useful (Goldsmith et al., 2005). Having that said, the producers of such media, especially the dental professionals, must be trained to deliver oral health messages effectively.

However, dental students are generally dissatisfied of courses focus mainly on memorization, passing rates and clinical competency test (Henzi et al., 2007). Therefore, dental academicians have attempted to incorporate courses which emphasize generic skills development (Broder & Janal, 2006; Hannah et al., 2004; Hottel & Hardigan, 2005). Clinical interpersonal skill is often taught by instructive learning and role-play (Carey et al., 2010; White et al., 2008). Nonetheless, to effectively propel oral health messages to the wider audience in the community, dental students should also learn about the fundamental of social marketing and mass communication.

Due to the wide usage of audio-visual aids in dental care practices and the students' demand for more interactive courses, the half semester 'Oral Health Education – Audio-visual Aids (OHE-AVA)' module was introduced into the Dental Public Health course in Universiti Kebangsaan Malaysia for dental undergraduate programme. It was hoped that this active learning module could train the future dental professionals to provide high quality dental care and health education. Moreover, the module was designed to provide a platform for students to enhance their generic skills such as critical thinking, interpersonal skill, teamwork and leadership (Universiti Kebangsaan Malaysia, 2010).

This paper reports on the evaluation of the OHE-AVA module by the last two cohorts of fourth-year dental students. It is envisaged that the effectiveness of this course is necessary to enable the department to identify the strengths and limitations so that substantive improvement can be done to achieve the objectives of the course.

## **MATERIALS AND METHODS**

### **Conduct of the Module**

The delivery approach of the module included didactic lectures, brainstorming, hands-on preparation and field application. Figure 1 showed the course outline of the 20 hour OHE-AVA module. This module comprised of a six-lecture sessions on development of health education materials, group dynamics, effective public speaking and evaluation of AVA materials. Students were then divided into four groups, each comprising of 10-14 students. Each group was given the opportunity to visit the Oral Health Promotion Unit at the Ministry of Health Malaysia to learn about the preparation and mass production of oral health education materials used in this country.

The module required students to plan, produce, use and evaluate oral health education AVA materials. To achieve the objectives, students were involved in group organization, brainstorming, consolidation of ideas, preparation of materials and presentations. Equal numbers of formal meeting slots were scheduled for the four groups. However students were also encouraged to work together during their free time.

Each student group was assigned to produce one set of OHE-AVA materials comprising of two pamphlets, two posters and one video for either: (i) young children and parents; (ii) primary schoolchildren; (iii) adolescents; or (iv) adults and elderly. Oral health messages incorporated must be suitable to the age group, habits and lifestyle of the target population. The project must be completed within 14 weeks.

Assessment of the OHE-AVA module was threefold, namely (i) initial assessment: class presentation by student groups of the theme, concept, aim and objectives of their Oral Health Education Messages on the sixth week, (ii) pre-production assessment: class presentation of their AVA materials prior to production and (iii) final assessment. The final assessment was a competition evaluated by a panel of three external judges. Criteria used in choosing the winning team were based on suitability and quality of content, creativity, practicality and impact of AVA, group dynamics as well as overall presentation. The AVA materials produced would subsequently be used at the end of the course in the annual Oral Health Promotion Community Programme (OHPCP) conducted at an identified village.

## **Course Evaluation**

At the end of the course, an evaluation was carried out using a questionnaire survey to invite constructive feedback from the students on the OHE-AVA module. The survey was conducted in 2011 on two undergraduate cohort groups (2009, 2010) who had gone through the OHE-AVA module. A total of 123 students responded and the response rate was 98%.

Due to the expectation of active students' involvement and interaction in this module, the Student Engagement Questionnaire (© 2005 David Kember, Doris Y. P. Leung and Carmel McNaught) was used, in order to reflect more accurately of the teaching and learning environment. The questionnaire was previously validated by Kember and Leung (2009).

The self-administered questionnaire used a five-point Likert scale with responses ranging from Strongly Agree to Strongly Disagree. Minimal modification was carried out of the Student Engagement Questionnaire. In addition to the 35 original questions, three questions were specifically developed according to the conduct of this module. For instance, students were asked on the opinion about method of assessment via a showcase presentation. Students were also asked on whether they know the learning objectives at the start of the course and whether they think the objectives of the course were met.

The questionnaire was distributed in a classroom setting at the end of the module. The students were instructed to complete and return the questionnaire within the half-hour time limit. Data collected were analyzed using Statistical Package for the Social Sciences (SPSS) version 20.0. Descriptive statistical analysis was done.

## **RESULTS**

A total of 123 students responded from the 2009 (n=56) and 2010 (n=67) Year Four cohorts. There were more females (78%) than males (22%). Generally, the students were positive about the course module. The results were collapsed by combining the 'Strongly disagree' and 'Disagree' into the 'Disagree' group; while the 'Agree' and 'Strongly agree' were combined under 'Agree'.

The results of this study showed that the majority of students rated the module highly in all areas (Table 1). In Development of Abilities, most of the students agreed on improvement of critical thinking, creative thinking, self-managed learning, adaptability, problem solving, communication skills and computer literacy. A slightly higher percentage of disagreement (1.6% and 4.9%) was received on interpersonal skills and group work development compared to the other items.

The students also agreed on most of the items questioned on Teaching and Learning Environment (Table 2). However, uncertainties were reported slightly higher in feedback to assist learning, in which 21.1% and 22.8% were undecided on the usefulness of the

explanations given and availability of feedback, respectively. On the other hand, disagreement was reported relatively higher in the statements on Workload, totaling 7.3% and 4.9% respectively on manageable stress and reasonable workload.

In spite of this, most of the students could see how the module is relevant to the Dental Public Health course (86.9%), complementary to other modules (86.8%) and enhances the dental course (89.4%). Majority of the students responded positively on the fulfillment of course objectives, with 87.8% agreed on clearly specified learning objectives were stated beforehand and 84.5% agreed that the course objectives were met.

## **DISCUSSION**

Course evaluation is a key component to assess the effectiveness and quality of academic programmes. However, dental students' opinions were often overlooked in developing dental curriculum although their perceptions of learning experiences are a crucial measurement on course success (Henzi et al., 2005). Therefore, this study was intended to consider the students' evaluations in improving a skills-based module.

The overall positive results were consistent with those of previous studies that documented favourable evaluations of communication skills programmes (Gorter & Ejikman, 1997; Nestel & Betson, 1999; Pine & McGoldrick, 2000). It is encouraging to note that dental students generally valued communication and interpersonal skills in their practice. However, the OHE-AVA module differs from previous studies because it also promotes communication to the public using audio-visual aids whereas preceding communication skills program emphasized solely on doctor-patient communication in the clinic. In contrast, mass media were more commonly employed in public health sectors (Noar, 2006).

One reason for the positive evaluations made by students in the present study may be that they found the module challenged their creative and innovative abilities beyond clinical routines, and the module provided opportunity to practice newly-learned skills of producing usable materials in realistic community setting. Previous research in United Kingdom, Canada and the United States has indicated that many dental schools employed passive training and didactic teaching on communication skills training involving few opportunities for real-life practice (McGoldrick et al., 1999; Yoshida et al., 2002). Hence, this skills-based module might be distinctive from other modules taught.

Although majority of the students have learnt to become an effective team or group member, a small group of students disagreed or were uncertain on feeling confident in dealing with a wide range of people after the course. This inconsistency could be due to the nature of the course module which exposed the students to the external panel of judges and general public in the later part of presentations. Therefore, although they were effective in teamwork and classroom environment, dealing with external judges and the public might put them outside their comfort zones.

Nevertheless, the teaching and learning environment was rated positively among the students, as most of the students appreciated active learning, teaching for understanding, relationship between teachers and students as well as the coherence of the curriculum.

However, some students were not convinced on the usefulness of the explanations provided and the sufficiency of feedback despite three stages of assessment carried out during the conduct of the module, where feedbacks were given to the students verbally on-the-spot. In view of this, perhaps the verbal feedback could be enhanced by the provision of written report on key areas, so that the learning experience could be maximized and retained over

time. Besides, student reflections in journal could aid in providing internal perspectives on personal development (Keselyak et al., 2007).

It is also recommended that the AVA produced be assessed objectively in the future, taking into account of the feedbacks from the intended audience in the community. Because health literacy skills directly influence access to care and compliance to medical care instructions, health promotion and patient education materials should be assessed to ensure the level of literacy required is appropriate for comprehension (Rudd et al., 1999).

When compared to the other areas in the questionnaires, the students were relatively less agreeable on the workload. More than half of the students disagreed or were uncertain about not unduly stressed by this module, while 8.9% disagreed that the amount of work was reasonable. This response was not surprising, since undergraduate dental program is often considered hectic and stressful (Acharya, 2003; Heath et al., 1999: 26; Polychronopoulou & Divaris, 2005; Sanders & Lushington, 1999; Westerman et al., 1993; Yap et al., 1996). Any addition to the conventional clinical-based curriculum might not be well-tolerated by some students. Despite that, the students were given ample time to finish the project in 14 weeks time.

Still, future improvement could take into consideration in avoiding the students' busiest semester, and encouraging out-of-class discussion (e.g. use of electronic and social network media) to avoid pressing time in clinical days. The latter suggestion is also relevant since 7.3% students did not frequently discussed ideas out-of-class with other students. Also, cooperative learning could be improved, as a quarter of the respondents disagreed or were uncertain about the benefit of out-of-class discussion in learning.

The opinion on the coherence of curriculum and fulfillment of course objectives were crucial to determine the relevance of this learning experience. The students' feedbacks on these items were encouraging, and attest to the potential of this module in developing various generic and specific skills at undergraduate level.

## **CONCLUSION**

Overall, the OHE-AVA module was rated positively among the students, thereby reflecting a success of the module in generating interest to effectively communicate oral health messages to the public. Nevertheless, concerns regarding students' interaction, assessment and workload could benefit from future refinement of the course. The purpose of this course module was to develop appropriate audio-visual aids which was achieved. Such experiences had undoubtedly enhanced the students' generic skills.

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Figure 1: Course Outline



Table 1: Development of capabilities

	Disagree n (%)	Uncertain	Agree n (%)
<b>Critical thinking</b>			
I have developed my ability to make judgements about alternative perspectives.	1 (0.8)	20 (16.3)	102 (82.9)
I have become more willing to consider different points of view.	0 (0)	11 (8.9)	112 (91.1)
<b>Creative thinking</b>			
I have been encouraged to use my own initiative.	1 (0.8)	13 (10.6)	109 (88.6)
I have been challenged to come up with new ideas.	1 (0.8)	17 (13.8)	105 (85.4)
<b>Self-managed learning</b>			
I feel that I can take responsibility for my own learning.	0 (0)	8 (6.5)	115 (93.5)
I have become more confident of my ability to pursue further learning.	0 (0)	21 (17.1)	102 (82.9)
<b>Adaptability</b>			
In this module, I have learnt how to be more adaptable.	0 (0)	19 (15.4)	104 (84.6)
I have become more willing to change my views and accept new ideas.	0 (0)	7 (5.7)	116 (94.3)
<b>Problem solving</b>			



I have improved my ability to use knowledge to solve problems in my field of study.	1 (0.8)	10 (8.1)	112 (91.1)
I am able to bring information and different ideas together to solve problems.	1 (0.8)	16 (13.0)	106 (86.2)
<b>Communication skills</b>			
I have developed my ability to communicate effectively with others.	1 (0.8)	13 (10.6)	109 (88.6)
I have improved my ability to convey ideas.	0 (0)	19 (15.4)	104 (84.6)
<b>Interpersonal skills and group work</b>			
I have learnt to become an effective team or group member.	2 (1.6)	13 (10.6)	108 (87.8)
I feel confident in dealing with a wide range of people.	6 (4.9)	24 (19.5)	93 (75.6)
<b>Computer literacy</b>			
I feel confident in using computer applications when necessary.	2 (1.6)	19 (15.4)	102 (83.0)
I have learnt more about using computers for presenting information.	2 (1.6)	14 (11.4)	107 (87.0)

Table 2: Teaching and learning environment

	Disagree	Uncertain n (%)	Agree
<b>Active learning</b>			
Our teaching staffs use a variety of teaching methods.	1 (0.8)	21 (17.1)	101 (82.1)
Students are given the chance to participate in classes.	0 (0)	11 (8.9)	112 (91.1)
<b>Teaching for understanding</b>			
The teaching staffs try hard to help us understand the course material.	3 (2.4)	13 (10.6)	107 (87.0)
The course design helps students understand the course content.	2 (1.6)	15 (12.2)	106 (86.2)
<b>Feedback to assist learning</b>			
When I have difficulty with learning materials, I find the explanations provided by the teaching staff useful.	0 (0)	26 (21.1)	97 (78.9)
There is sufficient feedback to ensure that we learn from the work we do.	3 (2.4)	28 (22.8)	92 (74.8)
<b>Assessment</b>			
The program uses a variety of assessment methods.	0 (0)	19 (15.4)	104 (84.6)
To do well in assessment in this program you need to have good analytical skills.	0 (0)	18 (14.6)	105 (85.4)
The assessment tested our understanding of key concepts in this program.	0 (0)	22 (17.9)	101 (82.1)
The final method of assessment via a showcase presentation to outside judges was very motivating and helps boost our morale.	1 (0.8)	15 (12.2)	107 (87.0)
<b>Relationship between teachers and students</b>			
The communication between teaching staff and students is good.	1 (0.8)	12 (9.8)	110 (89.4)
I find teaching staff helpful when asked questions.	0 (0)	12 (9.8)	111 (90.2)

<i>Workload</i>			
I manage to complete the requirements of the program without feeling unduly stressed.	24 (19.5)	38 (30.9)	61 (49.6)
The amount of work we are expected to do is quite reasonable.	11 (8.9)	30 (24.4)	82 (66.7)
<i>Relationship with other students</i>			
I feel a strong sense of belonging to my group.	3 (2.4)	19 (15.4)	101 (82.1)
I frequently work together with others in my classes.	3 (2.4)	15 (12.2)	105 (85.4)
<i>Cooperative learning</i>			
I have frequently discussed ideas from this course with other students out-of-class.	9 (7.3)	29 (23.6)	85 (69.1)
I have found that discussing course material with other students outside classes has helped me to reach a better understanding of the material.	6 (4.9)	26 (21.1)	91 (74.0)
<i>Coherence of curriculum</i>			
I can see how this module fitted in to make a coherent Dental Public Health course.	0 (0)	16 (13.0)	107 (87.0)
This module was well integrated with other modules in Dental Public Health course.	0 (0)	17 (13.8)	106 (86.2)
This module was relevant and enhances other modules in the whole dental course.	1 (0.8)	12 (9.8)	110 (89.4)
<i>Course objectives</i>			
The information presented by the lecturer at the start of the course clearly specified what I should learn and accomplish.	1 (0.8)	14 (11.4)	108 (87.8)
The objectives of the course were met.	1 (0.8)	18 (14.6)	104 (84.6)