

ASSESSING STUDENTS' COOKING KNOWLEDGE BEFORE ENROLMENT IN A CULINARY ARTS PROGRAM

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ABSTRACT

The focus of the culinary curriculum in every institution is to provide individuals, especially the young seeking success in the foodservice industry, with a solid base of skills and knowledge in culinary preparation and management. This paper reports the study which identified the new culinary students' self-assessed knowledge of a few traditional Malay cuisines before enrolling in the culinary arts program, based on secondary school attended. The sample of the population included all first semester students enrolled in January 2007 in the Culinary Division of the Faculty of Hotel and Tourism Management (Penang and Dungun campuses) of MARA University of Technology. The findings of this study revealed that students from vocational schools were more knowledgeable about basic cooking than those students from normal, and other types of secondary school before enrolling in the culinary program. On the other hand, the result also signifies that a substantial number of students especially from normal schools chose to take culinary arts with little knowledge of the general aspects of cooking. With such distinct differences, two conclusions can be drawn. First, a profound lack of basic cooking knowledge among the students from normal and boarding schools means it will take them much longer to acquire knowledge and develop culinary skills in their program. Second, the craft oriented courses taken by the secondary school students clearly provide them with a better knowledge and understanding as well as the skills to advance in their career education program.

Keywords: *student, cooking knowledge, malay cuisine, culinary arts program*

INTRODUCTION

In the past, working in a kitchen either as a chef or a cook was perceived by the public to be a low-status job, which did not require a formal education. According to Borchgrevink et al.(1998), the culinary profession struggled for many years with these negative connotations. Nevertheless, in today's market chefs or culinary professionals are expected to be educated and highly skilled in the preparation of delicious meals, as well as meeting the current nutrition and health concerns of the customers (Baskette and Mainella, 1992). The culinary professionals, in fact, are now facing the challenges of understanding current food preparation practices, dietary needs as well as the nutritional value and knowledge of healthy food. In most cases, culinary personnel needs a formal training not only in developing, creating and producing traditional and new dishes but also in understanding the importance of following recipes and preparing the correct portion size (Drummond and Brefere, 2001). Therefore, a solid foundation in food cooking knowledge and skills is necessary to be successful as a culinary professional in this modern era (Cullen, 2000).

In response to the above, culinary institutions are proliferating in the world today. In the USA for instance, there are over 500 culinary programs offering to provide courses which improve the knowledge and skill of foodservice employees, and the situation is similar in other countries around the globe (Durocher, 2001). In Malaysia, to keep pace with increasing employment opportunities and demand for qualified and well-trained culinary professionals, there has recently been an increase in the number of hospitality institutions offering culinary arts programs. The significant changes in culinary training approaches are also due to government policy, which has transformed the educational focus from solidly academic to occupational competency-based programs. As of now, there are thirteen public and more than ten private institutions including universities, colleges, polytechnics and community colleges offering programs ranging from certificates, diplomas to bachelor's degrees in culinary arts (MOE, 2005). With a more systematic approach to training, the culinary professionals now are slightly more recognized by hotels, food service operators, manufacturers, retailers and the food entertainment industry. This recognition plus the increasing celebrity status of many culinary professionals have influenced many secondary school leavers to choose a culinary arts program. At some institutions, students' enrolments have increased two fold and even more.

In the institutions, the focus of the culinary curriculum is on providing individuals, especially the young seeking success in the foodservice industry with a solid base of skills and knowledge in culinary preparation and management (Hughes, 2003, thesis). Each student enrolled in the program is required to take the major or core and elective subjects related to culinary practical, theoretical and management related subjects. In the case of the Culinary Arts program at the Faculty of Hotel and Tourism Management, MARA University of Technology the core subjects include western cuisines, pastry, bakery and confectionery, Garde Manger (salad and cold food), Malay cuisine, and butchery. In addition, there are some management related subjects such as purchasing and procurement, principles of management, kitchen design and layout, cost

control, food science, food studies and some elective subjects. Nevertheless, despite the increasing numbers of school leavers choosing this program, the extent to which they have the basic knowledge of and skills in food preparation prior to enrolling in the program are not known. It is argued that some students have enrolled in the program without having either a clear picture of the curriculum and most importantly, basic cooking knowledge even of their native food or food that they have frequently consumed.

KNOWLEDGE

Before proceeding into the construct and methodology of the study, it is essential to define knowledge. As with concepts of truth, belief, and wisdom, there is no single definition on which scholars agree, but rather numerous theories about the nature of knowledge. Davenport and Prusak (1998) describe knowledge as

..... a fluid mix of frame experience, an important value, contextual information and expert insight that provides a framework for evaluation and incorporation of new experience and information.

More than one type of knowledge exists (Abernathy, et al., 1999; Garud and Nayar, 1994; Bhagat et al., 2002; De long and Fahey, 2000). De long and Fahey (2000) developed a useful framework to classify knowledge which distinguished human, social and structured knowledge. Human knowledge is what humans know or know how to do. For example, this can be based on previous experience such as that of a culinary professional who has many years of experience in assembling food together to achieve a final product, or of a new student who is in the process of acquiring skills in culinary preparation. Social knowledge is usually tacit knowledge that arises out of relationships. An example of social knowledge is the way chefs on different levels of the kitchen hierarchy interact with other kitchen staff. Structured knowledge is rooted in the system, processes, rules and routines of an organization and is usually explicit knowledge. Of all these three types of knowledge, human knowledge is considered the most appropriate in this study as it relates to the experience of knowing something. In other words, knowledge is the confident understanding of a subject, potentially with the ability to use it for a specific purpose.

Having succinctly described knowledge, this study will, therefore, identify new culinary arts students' self-assessed knowledge of three traditional Malay cuisines (rendang, curry, and Masak Lemak) before enrolling in the culinary arts program, based on secondary school attended. It is worth noting here that the reason for choosing traditional Malay cuisine for this study is because students are arguably more familiar with these dishes in their daily life compared to other Malay dishes.

INSTRUMENTS

The instrument was developed by the researchers based on a review of the literature of previous studies. The questionnaire is divided into three sections. Section 1 consists of respondents' demographic variables such as gender, secondary school attended and

prior working experience. Section 2 measures students' knowledge of three selected Malay cuisines (rendang, curry and Masak Lemak) using questions based on a four point Likert-type scale (4= know a lot, 3=know some, 2= know a little, 1= know nothing). Section 3 measures the students' knowledge of the ingredients of those dishes through short quiz questions. Face and content validity was established by colleagues from the Department of Culinary Arts. Revisions were made based on recommendations from these colleagues. A pilot study was conducted using 30 randomly selected first-year students with varying backgrounds. Cronbach's alpha reliability for section 2 of the instrument was .74.

SAMPLE

With the intention of getting the actual information, new students entering the Culinary Arts Program were selected as a sample for this study. The population included all first semester students enrolled in January 2007 in the Culinary Division of the Faculty of Hotel and Tourism Management (Penang and Dungun campuses) of MARA University of Technology. From the information gathered there was a total of 130 students enrolled in the program on both campuses. As noted by Lashley and Barron, (2005) to achieve a maximum response, especially when dealing with students, questionnaires should be administered in the controlled environment of formal classes. Ticehurst and Veal (1999) describe this approach to a questionnaire survey as a 'captive group survey' and suggest that this method of questionnaire administration is expeditious and less problematic than in less controlled situations. Using a similar approach, the questionnaire was administered in the lecture theatre during the first week of the new semester in January 2007 under the supervision of researchers and the head of the Culinary Program at both campuses. Owing to the controlled nature, 100 per cent of responses were gathered in both campuses from the total of 130 students.

Description of the sample

The analyzed sample comprises **53.8 (n= 70)** percent of female students compared to 46.2 (n= 60) percent of male students. More than three-quarters of the total respondents (69.9 percent, n= 87) attended the normal schools compared to 20 per cent (n=26) from vocational schools and 13.1 (n= 17) per cent from other types of secondary schools. The significant proportion of students from normal secondary schools may indicate that the culinary arts program has attracted students from this type of school. On the other hand, it appears that students regardless of gender and secondary school background place equal importance on gaining their academic qualifications and probably are keen and interested in pursuing a career in the culinary field.

ANALYSIS AND RESULTS

In measuring students' self-assessed knowledge on three traditional Malay dishes before enrolling in a culinary arts program a descriptive statistic was undertaken. The data in Table 1 show mean scores for all the items.

Table 1: Showing the mean scores of students' self –assessed cooking knowledge

Items	n	Mean	S.D
Ingredients used for making rendang	130	2.41	.619
Ingredients used for making curry	130	2.43	.569
Ingredients used for making “Masak lemak.”	130	2.45	.558
Basic preparation for making rendang	130	2.29	.615
Basic preparation for making curry	130	2.47	.573
Basic preparation for making “masak lemak”	130	2.45	.623
Cooking method for making rendang	130	2.41	.765
Cooking method for making curry	130	2.41	.851
Cooking method for making “Masak Lemak”	130	2.42	.680
Cooking utensils for making rendang	130	2.35	.930
Cooking utensils for making curry	130	2.47	.941
Cooking utensils for making “Masak lemak.”	130	2.37	.728
Good taste of rendang	130	2.76	.723
Good taste of curry	130	2.76	.699
Good taste of “Masak lemak.”	130	2.92	.630
Consistency of rendang	130	2.90	.428
Consistency of curry	130	2.91	.305
Consistency of masak lemak	130	2.85	.433
Herbs and spices for rendang	130	2.26	.578
Herbs and spices for curry	130	2.43	.682
Herbs and spices for “Masak lemak.”	130	2.16	.558
When rendang is cooked	130	2.43	.569
When to curry is cooked	130	2.47	.559
When “Masak Lemak” is cooked	130	2.36	.622

Notes: 1: Knowing nothing; 2: Know a little; 3: Know some; 4: Know a lot

From the table, one can see that the new students in the culinary arts program clearly reported themselves as knowing a little about ingredients for making rendang, curry, and Masak Lemak. They also tended to know less about the basic preparation, herbs, and spices used and the cooking method for those dishes. These were further supported by their admission of having little knowledge of how to recognize when the rendang, curry, and Masak Lemak are cooked. These notions are based on the overall mean scores for most of the items, except for items related to taste and consistency which were below midpoint (2.5) on the four – point scale. Given this rating, the majority of students were believed to be less knowledgeable about cooking in general before enrolling in the culinary arts program.

Nevertheless, despite having inadequate knowledge of the basic preparation, herbs and spices and cooking methods the majority of students were poised to recognise the consistency and taste of good rendang, curry, and Masak Lemak. Their feeling is probably best explained by the mean scores above 2.7 given to these items. It is important to recognise that the mean scores given by students to these items in absolute terms hold true in fact, because they are argued as taking these foods on a regular basis in their daily life; therefore they have more confidence in their rating.

Comparison of cooking knowledge based on secondary school attended

It was envisaged that there must be a strong relationship between the type of secondary schools attended and the students' cooking knowledge. As such, vocational schools are believed to have more specialized subjects as part of the curriculum compared to the normal and other types of schools. Students from this type of school are assumed to have more culinary understanding than those from normal and the other types of secondary schools. To see whether this notion holds true the One –Way analysis of variance (ANOVA) with Scheffe *post hoc* procedure was used to investigate if there were any statistically significant differences between responses based on secondary school attended. Table 2 presents the results of the analysis and highlights the items for which statistically significant differences were identified.

Table 2: The items where there were statistically significant differences between responses based on secondary school background

Items	Type of Sec. School	n	mean	Std .dev	Sig	Scheffe
Ingredients used for making rendang	Nor	87	2.35	.646	.000	Voc > Nor > Oth
	Voca	26	2.80	.401		
	Others	17	2.11	.485		
Ingredients used for making curry	Nor	87	2.37	.575	.027	Voc > Nor > Oth
	Voca	26	2.69	.470		
	Others	17	2.29	.587		
Ingredients used for making masak lemak	Nor	87	2.37	.533	.001	Voc > Nor > Oth
	Voca	26	2.80	.491		
	Others	17	2.29	.587		
Basic preparation for making rendang	Nor	87	2.19	.587	.003	Voc > Nor > Oth
	Voca	26	2.65	.628		
	Others	17	2.23	.562		
Basic preparation for making curry	Nor	87	2.40	.579	.001	Voc > Nor > Oth
	Voca	26	2.84	.367		
	Others	17	2.29	.587		
Basic preparation for making masak lemak	Nor	87	2.36	.649	.001	Voc > Nor > Oth
	Voca	26	2.84	.367		
	Others	17	2.29	.587		
Cooking method for making rendang	Nor	87	2.14	.619	.000	Voc > Nor > Oth
	Voca	26	3.42	.503		
	Others	17	2.23	.437		
Cooking method for making curry	Nor	87	2.37	.781	.000	Voc > Nor > Oth
	Voca	26	3.07	.688		
	Others	17	1.59	.618		
Cooking method for making masak lemak	Nor	87	2.29	.700	.000	Voc > Nor > Oth
	Voca	26	2.92	.392		
	Others	17	2.29	.587		
Cooking utensils for making rendang	Nor	87	2.13	.929	.000	Voc > Nor > Oth
	Voca	26	3.30	.470		

	Others	17	2.00	.353		
Cooking utensils for making curry	Nor	87	2.27	.972	.000	Voc > Nor > Oth
	Voca	26	3.30	.549		
	Others	17	2.23	.437		
Cooking utensils for making masak lemak	Nor	87	2.25	.702	.000	Voc > Nor > Oth
	Voca	26	2.96	.662		
	Others	17	2.11	.485		
Good taste of rendang	Nor	87	2.66	.741	.065	
	Voca	26	3.03	.720		
	Others	17	2.82	.528		
Good taste of curry	Nor	87	2.73	.559	.638	
	Voca	26	2.88	1.07		
	Others	17	2.76	.664		
Good taste of masak lemak	Nor	87	2.91	.632	.669	
	Voca	26	3.00	.692		
	Others	17	2.82	.528		
Consistency of rendang	Nor	87	2.86	.435	.345	
	Voca	26	2.96	.527		
	Others	17	3.00	.428		
Consistency of curry	Nor	87	2.88	.320	.228	
	Voca	26	3.00	.282		
	Others	17	2.94	.242		
Consistency of masak lemak	Nor	87	2.88	.415	.470	
	Voca	26	2.76	.514		
	Others	17	2.82	.392		
Herbs and spices for rendang	Nor	87	2.17	.532	.006	Voc > Nor > Oth
	Voca	26	2.57	.643		
	Others	17	2.23	.562		
Herbs and spices for curry	Nor	87	2.39	.688	.031	Voc > Nor > Oth
	Voca	26	2.69	.679		
	Others	17	2.29	.587		
Herbs and spices for curry	Nor	87	2.05	.466	.001	Voc > Nor > Oth
	Voca	26	2.50	.707		
	Others	17	2.23	.562		
When rendang is cooked	Nor	87	2.33	.520	.001	Voc > Nor > Oth
	Voca	26	2.80	.633		
	Others	17	2.35	.492		
When curry is cooked	Nor	87	2.39	.513	.001	Voc > Nor > Oth
	Voca	26	2.84	.543		
	Others	17	2.35	.606		
When masak lemak is cooked	Nor	87	2.29	.630	.000	Voc > Nor > Oth
	Voca	26	2.80	.491		
	Others	17	2.00	.353		

Note: 1. Any significant differences are indicated by being bolded

Seventeen statistically significant differences were found between groups. The corresponding Scheffé *post hoc* procedure revealed that differences were detected between respondents from vocational, normal and other types of secondary schools. Vocational school students reported themselves as having a much better knowledge

than did those from the normal schools and other types of secondary school students, of the ingredients used for making rendang (2.80, $p = .000$ compared to 2.35 and 2.11), curry (2.69, $p = .027$ compared to 2.37 and 2.29) and Masak Lemak (2.80, $p = .001$ compared to 2.37 and 2.29). There was a similar pattern in the basic preparation for making rendang (2.65, $p = .003$ compared to 2.19 and 2.23), curry (2.84, $p = .001$ compared to 2.40 and 2.29) and Masak Lemak (2.84, $p = .001$ compared to 2.36 and 2.29). Students from vocational schools were also somewhat more knowledgeable than the normal and other types of secondary school students with regard to the method of making rendang (3.42 $p = .000$ compared to 2.14 and 2.23), curry (3.07, $p = .000$ compared to 2.37 and 1.59) and Masak Lemak (2.92, $p = .000$ compared to 2.29 and 2.29). In fact, they expressed themselves as knowing a lot more about the equipment used for making rendang (3.30, $p = .000$ compared to 2.13 and 2.00) Curry (3.30, $p = .000$ compared to 2.27 and 2.23) and Masak Lemak (2.96, $p = .000$ compared to 2.25 and 2.11) than those students from normal and other types of secondary schools. Together, these findings indicate that there is a clear pattern showing the students from vocational school as having markedly different responses. In other words, this type of school is more specialized than the other secondary schools and focuses on the culinary related study as part of its curriculum and students who enrol in vocational schools may have already become inspired by being exposed to the cooking aspects in their program.

With that level of knowledge it is not surprising to see vocational secondary school students reporting themselves as more familiar than students from normal and other types of secondary schools with the herbs and spices used for making rendang (2.57, $p = .006$ compared to 2.17 and 2.23), curry (2.69, $p = .031$ compared to 2.39 and 2.29), Masak Lemak (2.50, $p = .001$ compared to 2.05 and 2.23). They were also somewhat more particular in recognizing them than were normal and other types of secondary school students, when making rendang (2.80, $p = .001$ compared to 2.33 and 2.35), curry (2.84 compared to 2.39 and 2.35) and Masak Lemak (2.80, $p = .000$ compared to 2.29 and 2.00). These suggest that vocational school students are more confident or have more knowledge about making those items compared to those from normal and boarding schools.

Again, despite having different degrees of knowledge of the basic preparation, herbs, and spices and cooking methods, each group of students consistently expressed themselves of having the ability to identify the consistency and taste of good rendang, curry and Masak Lemak. This perhaps best explains the absence of statistically significant differences in those two items. With this result, the same argument could be used as with those given in the overall responses' analysis.

Open-ended Response

As previously mentioned, a short quiz requesting respondents to list the main ingredients in making rendang, curry and Masak Lemak was included in the instrument. The intention was to validate the quantitative result. The answers received were split based on secondary school attended. The expected answers for those three Malay dishes are as in Table 3.

Table 3: Open ended response

Dishes	Main Ingredients
Rendang	Meat (chicken/beef), chili paste, shallot, garlic, ginger, galangal, lemon grass, turmeric, turmeric leaf, coconut milk (santan) and fried coconut paste (kerisik), tamarind, etc.
Curry	Meat (beef/chicken), curry powder, shallot, garlic, ginger, oil, coconut oil, tamarind, etc.
Masak Lemak	Fish, shallot, turmeric, chilli, lemon grass, coconut milk, tamarind, etc.

With regard to the ingredients for rendang, the overall findings revealed that out of 26 students from a vocational school background 25 correctly (96.1 percent) listed the main ingredients of rendang compared to only 22.9 percent (20 out of 87 students) from the normal and only 11.7 percent (2 out of 17 students) of those from other types of secondary schools. On the ingredients required for making curry, one hundred percent (100 percent, n = 26) of students from vocational schools self-assuredly recognized the ingredients compared to those from normal (26.4 percent. n = 23) and other types of secondary schools (23.5 percent, n = 4). They also demonstrate a good knowledge by correctly identifying the main items for making Masak Lemak (100 percent, n = 26) compared to those from normal (29.9 percent, n = 26) and other types of secondary schools (23.5 percent, n = 4). This result fits with the high mean ratings given by students from vocational schools to Section C in the quantitative questions compared to those from normal and other types of secondary schools. This result also points out that students who had vocational school experience have more knowledge of food, and are clear where they are heading career wise before enrolling in the program.

CONCLUSIONS AND RECOMMENDATIONS

The findings of this study revealed that students from vocational schools were more knowledgeable on basic cooking than those students from normal and other types of secondary schools before enrolling in the culinary program. On the other hand, the result also signifies that a substantial number of students especially from normal schools chose to take culinary arts with little knowledge of the general aspect of cooking. This is evident as they reported themselves as having less knowledge about basic cooking, particularly related to basic preparation, cooking methods and herbs and spices used, even in the dishes that they were familiar with such as rendang, curry, and Masak Lemak.

With such distinct differences, two conclusions can be drawn. First, a profound lack of basic cooking knowledge among the students from normal and boarding schools will mean it will take a much longer time for them to acquire knowledge and develop culinary skill in their program. Culinary educators may also have to take more time and effort to shape their knowledge and develop the basic skills of culinary preparation. Based on these study findings, culinary arts programs have attracted more students from normal secondary schools than those from other types of secondary schools. Therefore, in order to provide them with at least some familiarity with basic cooking before they enrol in a culinary program, it is suggested that the subject of Ekonomi Rumah Tangga (ERT) which is presently taught in normal secondary schools should be taught as an

individual subject rather than combining it with other vocational subjects. Bearing this point in mind, the selection of students taking this subject must also be based on their interest. Also, the preconceived idea of ERT as a gender stereotyped subject or mainly for girl students should be changed, and it should be promoted to male students as well. Nevertheless, this cannot be done or changed overnight, as it relates to the changing of government policy specifically relating to the Ministry of Education. With this constraint, the Faculty of Hotel and Tourism, University Teknologi MARA (UITM) as one of the training providers for young culinarians in this country should expose the culinary arts students much longer in the industry through industrial attachment. In turn, the current practice of sending the diploma culinary arts student for one semester for industry attachment must again be revised and extended to two semesters.

The second conclusive remark is that craft oriented courses taken by the secondary students give them a better knowledge, understanding, and skill in advancing their career education program. This is the case, with the vocational school students, as the results of this study provide strong evidence that these students enrol in the culinary arts program with the basic knowledge and skills. Educators may feel it is much easier to educate these students as they have already gained some knowledge and skill in cooking and culinary management. Needless to say, they probably have a clearer career interest or are definite about what they expect from their study and future career, compared to those students from normal and other secondary schools. However, there were only small numbers of them enrolled in this program, as there are not many vocational catering schools in this country at present. Thus, if the related authorities are serious about ensuring that prospective future culinary students possess the knowledge and are better prepared for a culinary career, more vocational schools related to culinary skills should be opened, or the intake increased in the existing vocational schools at least to a reasonable proportion. This is because early career guidance and nurturing interest will equip the secondary school students with the necessary skills for their future career (Ladkin, 2000). This has been practised in some European countries such as Switzerland, France, Germany, Holland and other developed countries. By doing these, it is hoped that the issue of the poor transfer rate among young culinary graduates into a career in the hotel industry in particular, as revealed by Zahari et al. (2005) could be reduced.

LIMITATIONS

Although this research had significant findings, attention should also be given to its limitations, as these also warrant some discussion. First, owing to budget constraints and limited time the samples used were confined to the culinary arts program in the University of Technology Mara, so the overall findings certainly cannot be generalized and represent the whole country. Therefore, if more time and a larger budget were allocated, the replication of such research could be carried out in a broader scope with more culinary arts including private and other institutions throughout Malaysia involved. The second limitation relates to the instrument. There were only a few items used to measure the basic cooking knowledge of new culinary students. More attributes pertaining to these variables could be used in future research.

REFERENCES

- Abernathy, F.H., Dunlop, J.T., Hammoind, J.H. and Well, D.(1999) *A Stitch in Time*, Oxford University Press, New York, NY.
- Baskette, M., and Mainella.(1992). *The Arts of Nutritional Cooking*. New York: Van Nostrand Reinhold.
- Borchgrevink, C.P., Neslso R.H., and Ruf L.J. (1998). It is a chef's life. *Journal of Hospitality and Tourism Educators*, 10 (2), 13-17.
- Cullen, N. (2000). *The World of Culinary Supervision, Training and Management*. Upper Saddle: Prentice Hall.
- Davenport,T.H.and Prusak, L.(1998). *Working Knowledge*. Harvard Business School Press, Boston. MA.
- DeLong, D.W., and Fahey, L.(2000). Diagnosing culture barriers to knowledge management. *Academy of Management Executive*, 14 (4), 113-128.
- Drummond, K., and Brefere, L.(2000). *Nutrition for Foodservice and Culinary Professional*. New York: John Wiley & Son. Inc.
- Durocher, J.(2001).Celebrating 100 years: Revolutionary Forces. *Restaurant Business*, 100, 30-40.
- Hughes, M.H.(2003). *Culinary Professional Training: Measurement of Nutrition Knowledge Among Culinary Students Enrolled in a Southeastern Culinary Arts Institute*. A PhD thesis. Auburn University, Alabama.U.SA.
- Ladkin, A. (2000). Vocational education and food and beverage experience: issue for career development. *International Journal of Contemporary Hospitality Management*,12 (4)226-233.
- Lashley, C., and Barron, P.(2005). The learning style preferences of hospitality and tourism students: observation from an international and cross- cultural study. *International Journal of Hospitality Management*, (in press), 1-8.
- MOE, (2005). *Malaysian Ministry of Education Planning*. Kuala Lumpur, Dewan Bahasa dan Pustaka.
- Ticehurst, G.W. and Veal, A.J.(1999). *Business Research Method: A Managerial Approach*, Longman: Australia.

Zahari, M.S., Tuan Ahmad, T.I., and Shariff, S. (2005). A study of factors moderating student selection of hospitality program and subsequent career intentions. *TEAM Journal of Hospitality & Tourism*, 1 (2), 103-120.