

STUDENT ENGAGEMENT AT THE HIGHER LEARNING INSTITUTIONS: The Case of Malaysia and the United Arab Emirates

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Abstract - Universities in Malaysia and the United Arab Emirates (UAE), just like other Higher Education Institutions (HEIs), strive to be at the forefront of academic excellence. Towards this end, HEIs endeavour to provide their students, their primary clientele with the most conducive learning environment in order to maximise their potentials and prepare them to the real world of work. Do the students really make the most of the learning experiences in the university? Are the students really actively “engaged” in the teaching programmes and learning activities provided by the university? What might be the implications of student engagement to curriculum, instruction, policy and decision making, and educational administration? This paper focused on the level of academic challenge provided to students. In this study, “academic challenge” was based on study time and course requirements for reading, writing, and application of higher-order thinking skills rather than on student judgments of the difficulty of the coursework (Carini and Kuh, 2003). Specifically, this investigation attempted to ascertain the types of engagement activities at the HEIs of Malaysia and the UAE. Interesting findings are presented, and recommendations are offered in light of student engagement in the context of higher education.

Keywords : Student engagement; Academic challenge; Educational experience; Active and collaborative learning

Paper Type : Research Paper

Introduction

The National Survey of Student Engagement (NSSE) measures student engagement by asking students questions about their campus experiences, such as their classroom activities, their interactions with faculty, their interactions with other students, their study habits, and their university’s support of their efforts (NSSE, 2001; 2003). The specific objectives of the study were:

1. To ascertain the level of academic challenge provided to students;
2. To identify students’ experiences on active and collaborative learning;
3. To determine the extent of student-faculty interaction;
4. To find out the extent of enriching educational experiences afforded to students;
and
5. To investigate the extent of supportive campus environment provided to the students.

This paper however, focuses on only one of the five constructs of the NSSE survey, which is the level of academic challenge provided to students. In this study, “academic challenge” was based on study time and course requirements for reading, writing, and application of higher-order thinking skills rather than on student judgements of the difficulty of the coursework (Carini and Kuh, 2003).

Findings from the study help to explore and better understand the process of teaching and learning in general. Specifically, the findings of this study serve as a useful assessment instrument for one dimension of the undergraduate educational experience. In other words, "it serves as a tool to improve the undergraduate education by creating pathways to engagement that are clearly marked so that students can easily find their way to become involved in purposeful activities" (NSSE, 2004). It is hoped that findings from the study will also help to promote and enhance the quality of the education program offered by the institutions. The insights gained in the study will help to streamline the curriculum of the program as a whole in meeting standards for accreditations and benchmarking.

Review of The Literature

According to Leithwood and Jantzi (2000), student engagement has both behavioural and affective components. The behavioural component refers to the activities that student participates, both inside and outside the classroom while the affective component is the degree to which students identify with the institution and feel they belong. Alvarez (2002) believed that if students are not engaged in work at hand, there is little learning that is taking place. He stresses that engagement should not be equated with busyness; students who are engaged have a personal stake in the activity. In short, they are taking part in personally meaningful and relevant activities. According to Painter and Valentine (1996, quoted in Quinn, 2002), students are being engaged if they participate in authentic project work, cooperative learning, hands-on learning, demonstrations, active research and the use of higher-order thinking skills. Other indicators of engagement include making class presentation, having conversations with professors outside of class, writing papers that were at least 20 pages long, and wanting to enrol in the same college or university a second time (Gose, 1999).

Student engagement researches have taken the limelight in colleges and universities in the United States. A case in point, which serves as the anchor of the present research, is the national yearly survey on student engagement conducted by Indiana University Bloomington. The measures taken by the university in carrying out empirical investigations on student engagement are rooted from its purpose of finding out whether and how students are actually utilising their institution's resources to provide deep and meaningful learning experiences. Undertaken by the university's Center for Postsecondary Research and Planning since Spring 2000, the National Survey of Student Engagement (NSSE) aimed at providing data to colleges and universities to use for improving undergraduate education, inform state accountability and accreditation efforts, and facilitate national and sector benchmarking efforts among 470 different four-year colleges and universities and among 155,000 students thus far (NSSE, 2001). NSSE examined certain benchmarks deemed to be effective educational practice, such as level of academic challenge (emphasis on the importance of academic effort and setting high expectations for student performance), active and collaborative learning (intensity of involvement in student's education and application of learning in different settings), student-faculty interaction (learning first-hand and solving practical problems by interacting with faculty members inside and outside the classroom), enriching educational experiences (complementary learning opportunities inside and outside classrooms), and supportive campus environment (college/university commitment to students' success and working and social relations cultivated among different groups on campus).

The benchmarks examined by NSSE attempted to prove that there are educational practices that promote students' active and meaningful learning as well as indicate positive image of the college or university. In other words, the benchmarks seem to refute the traditional way of looking at exemplary institutions through their publicised excellence or public perceptions of high standards.

Researches related to student engagement abound in the West, and the reports are all thought-provoking in terms of improving students' experiences in the learning processes. For instance, Zhao and Kuh (2003) did a research on the relationships between participating in learning communities and student engagement in a range of educationally purposeful activities of 80,479 randomly selected first-year and senior students from 365 four-year institutions in the United States. It was shown that learning communities are uniformly and positively linked to engagement as well as student self-reported outcomes and overall satisfaction with college.

In the Asian context, especially in Malaysia, there seems to be a dearth of investigations along this line. One particular study which was conducted by a group of researchers (Norzaini et al., 2003) from Universiti Kebangsaan Malaysia, studied on the extent to which the undergraduate students engage in good educational practices. The survey was administered in a form of random sampling of the final year students whereby the results of the scores are compared across faculty. The focus of the study is to provide information in improving students' educational experiences.

Methodology

This study employs a survey method. It is a descriptive-exploratory study whereby questionnaires were self-administered to the respondents. Universiti Utara Malaysia (UUM) students were selected from three English language classes, which include English for Higher Education, Public Speaking and Report Writing. These courses, which are required university courses, provide samples of students from different

semesters. The questionnaires were given to the coordinator of each course who then distributed them randomly to other instructors teaching the same course.

In the case of the Ajman University of Science and Technology (AUST), United Arab Emirates (UAE), students were given questionnaires in three different classes. They were those taking the General Psychology, Research Methodology, and Educational Technology classes. These courses were selected because they are compulsory subjects for all students to be taken from the list of the University Required Courses. Similar to the UUM situation, the questionnaires were given to instructors teaching the courses, who then distributed them to their students in the respective classes.

Using the stratified random sampling technique, a total of 1,022 was selected from the UUM 5,101 student population of the three courses. However, only a total of 872 (85%) questionnaires were then collected. A total of 358 were selected from the 1,750 AUST student population of the three courses selected but only a total of 259 (72%) questionnaires were then collected. The limitation of the study was dependent on the number of students who attended the class on the day the questionnaires were distributed.

Items for the questionnaire were adapted from the annual National Survey of Student Engagement (NSSE). The questionnaire consists of 87 items, which were categorised using the five benchmarks. Prior to using the questionnaire, a pilot study was conducted to determine the reliability and validity of the instrument for the local context for both groups. For the UUM questionnaire, the overall Cronbach Alpha was 0.93 and 0.69 for the “levels of academic challenge” construct. For the AUST questionnaire, the overall Cronbach Alpha was 0.84 and 0.73 for the “levels of academic challenge” construct.

Results And Discussion

The Respondents' Profile

In terms of UUM demography, most of the respondents were female (80.5%), while the remaining were male students (19.5%). Malays constituted the majority of respondents with almost 64.4%, followed by Chinese (27.7%), Indians (4.6%) and others (3.3%). About 20% of the respondents were from the Faculty of Business Administration (FPP). This is followed by the Faculty of Information Technology or FTM (15.0%), Faculty of International Affairs or FPA (10.7%), Faculty of Economics or FE (10.4%), Faculty of Accountancy or FPK (8.8%), Faculty of Human and Social Development or FPSM (8.7%), Faculty of Cognitive Sciences and Education or FSKP (6.8%), Faculty of Finance and Banking or FWB (6.4%), Faculty of Public Management and Law or FPAU (4.7%), Faculty of Communication and Modern Languages or FKBM (3.4%), Faculty of Tourism, Hospitality and Environmental Management or FPHA (2.3%), Faculty of Management of Technology or FPT (1.7%), and finally Faculty of Quantitative Sciences or FSK (1.0%).

More than half (56.7%) of the respondents in this study were in their third semester. This is followed by students in their fifth semester (31.2%), seventh semester (4.8%), fourth semester (4.1%), second semester (1.3%), sixth semester (1.1%), and finally the first semester (0.8%). The entrance qualification for most of the respondents was Malaysian Higher Education Certificate or STPM (66.4%), followed by matriculation (23.6%), diploma holders (9.0%), advanced diploma (0.5%), and other qualifications (0.6%). Respondents seemed to gain relatively high range of CGPA with more than half (51.7%) having between 3.01-3.51 and then followed by 2.52-3.00 (31.7%), 3.52 – 4.00 (8.9%), and 2.00-2.51 (7.0%). Only 4 students (0.6%) have CGPA below 1.99. About half (48.6%) of the respondents' father completed their education at the secondary level. This is followed by those at the primary education level (39.1%), diploma holders (6.9%), bachelor's (2.7%), master's (1.9%), and doctoral degree (0.7%). Similar findings to the father's level of education, the level of education of the respondents' mothers is also at the secondary level (47.8%). This is followed by 46.1% at the primary education level, diploma holders (3.6%), bachelor's (1.8%), master's (0.5%), and finally, doctoral degree (0.2%).

With regards to AUST students' profile, similar pattern emerged in the gender analysis. Male only constituted 26.9% of the population while majority were female students (73.1%). About half of them were Dentistry students (45.8%), then followed by those taking Educational Technology (20.7%), and Teaching of English as a Second Language or TEFL (17.6%). The remaining were students from the Engineering, Architecture, Pharmacy, Computer Science, Accounting, Business and Management, Communication and Finance. Of the 259 respondents, 92.5% were of Arab origin while the remaining

6.3% and 1.3% were Persians and Indians, respectively. The student population also showed that 32.6% were in the 8th semester, 20.9% in the 6th semester, 18.3% in the 4th semester, 16.5% in the 2nd semester and the remaining were in the 1st, 3rd, 5th and 7th semesters. Both the fathers' and mothers' education background is similar, with a number of fathers who did not finish high school (27.2%), and 25.9% having a Bachelors' degree. More than one-third (38.5%) of the mothers did not finish high school, while 21.3% had a Bachelors' degree. Unlike the UUM students' parental background however, the parents having a Master's and Doctoral degrees were higher than that of the UUM analysis. Data showed that 13.2% of the fathers of the AUST respondents have a Master's degree and 11.1% have a Doctoral degree while 7.4% of the mother's level of education at Master's and 3.3% at Doctoral degree. Respondents who have CGPA between 3.01-3.51 were 22.2%, between 2.52-3.00 (27.6%), between 2.00-2.51 (23.2%) and between 3.52 – 4.00 (18.7%). Only 3.0% of the AUST students have CGPA below 1.99.

Table 1. Levels of Academic Challenge

		UUM	AUST
Worked harder than you thought you could to meet an instructor's standards or expectation.	Never	14 (1.6%)	13 (5.1%)
	Sometimes	221 (25.4%)	114 (44.7%)
	Often	525 (60.4%)	80 (31.4%)
	Very Often	109 (12.5%)	48 (18.8%)
	M=2.84	M=2.64	
Memorising facts, ideas, or method from your courses and readings so you can repeat them in pretty much the same form.	Very Little	9 (1.0%)	14 (5.5%)
	Some	246 (28.4%)	64 (25.1%)
	Quite a bit	496 (56.9%)	100 (39.2%)
	Very Much	119 (13.7%)	77 (30.2%)
	M=2.83	M=2.94	
Analysing the basic elements of an idea, experience, or theory, such as examining a particular case of situation in depth and considering its components.	Very Little	20 (2.3%)	19 (7.5%)
	Some	288 (33.1%)	75 (29.4%)
	Quite a bit	454 (52.2%)	93 (36.5%)
	Very Much	108 (12.4%)	68 (26.7%)
	M=2.74	M=2.82	
Synthesising and organising ideas, information, or experiences into new, more complex interpretations and relationships.	Very Little	18 (2.1%)	27 (10.6%)
	Some	293 (33.7%)	77 (30.3%)
	Quite a bit	477 (54.9%)	95 (37.4%)
	Very Much	81 (9.3%)	55 (21.7%)
	M=2.71	M=2.70	
Making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions.	Very Little	25 (2.9%)	25 (9.8%)
	Some	293 (33.7%)	82 (32.0%)
	Quite a bit	472 (54.3%)	83 (32.4%)
	Very Much	79 (9.1%)	66 (25.8%)
	M=2.70	M=2.74	
Applying theories or concepts to practical problems or in new situations.	Very Little	20 (2.3%)	25 (9.8%)
	Some	264 (30.4%)	86 (33.6%)
	Quite a bit	470 (54.1%)	76 (29.7%)
	Very Much	113 (13.0%)	67 (26.2%)
	M=2.78	M=2.82	
The extent to which your examinations during the current school year have challenged you to do your best work.	1Very Little		
	2	4 (0.5%)	4 (1.6%)
	3	7 (0.9%)	12 (4.9%)
	4	28 (3.4%)	16 (6.5%)

		UUM	AUST
	5	207 (25.2%)	62 (25.1%)
	6	311 (37.8%)	66 (26.7%)
	7 Very Much	182 (22.1%)	50 (20.2%)
		84 (10.2%)	37 (15.0%)
		M=5.06	M=4.91
Number of assigned textbooks, books, or book-length packs of course readings.	None	15 (1.7%)	23 (9.1%)
	Between 1 and 4	503 (58.0%)	76 (30.0%)
	Between 5 and 10	252 (29.1%)	86 (34.0%)
	Between 11 and 20	76 (8.8%)	31 (12.3%)
	More than 20	21 (2.4%)	35 (13.8%)
		M=2.52	M=2.96
Number of books read on your own (not assigned) for personal enjoyment or academic enrichment.	None	44 (5.1%)	31 (12.3%)
	Between 1 and 4	445 (51.4%)	110 (43.5%)
	Between 5 and 10	231 (26.7%)	69 (27.3%)
	Between 11 and 20	96 (11.1%)	25 (9.9%)
	More than 20	50 (5.8%)	18 (7.1%)
		M=2.61	M=2.56
Number of written papers or reports of 20 pages or more.	None	33 (3.8%)	50 (19.8%)
	Between 1 and 4	372 (42.9%)	65 (25.8%)
	Between 5 and 10	318 (36.7%)	47 (18.7%)
	Between 11 and 20	95 (11.0%)	47 (18.7%)
	More than 20	49 (5.7%)	43 (17.1%)
		M=2.72	M=2.87
Number of written papers or reports between 5 and 19 pages.	None	30 (3.5%)	28 (11.2%)
	Between 1 and 4	426 (49.4%)	81 (32.4%)
	Between 5 and 10	289 (33.5%)	62 (24.8%)
	Between 11 and 20	87 (10.1%)	46 (18.4%)
	More than 20	30 (3.5%)	33 (13.2%)
		M=2.61	M=2.90
Number of written papers or reports of fewer than 5 pages.	None	206 (23.7%)	37 (14.7%)
	Between 1 and 4	458 (52.8%)	94 (37.5%)
	Between 5 and 10	132 (15.2%)	42 (16.7%)
	Between 11 and 20	47 (5.4%)	33 (13.1%)
	More than 20	25 (2.9%)	45 (17.9%)
		M=2.11	M=2.82
Numbers of problem sets that take you more than an hour to complete.	None	16 (1.8%)	30 (11.8%)
	Between 1 and 2	277 (32.0%)	92 (36.1%)
	Between 3 and 4	349 (40.3%)	35 (13.7%)
	Between 5 and 6	112 (12.9%)	6 (2.4%)
	More than 6	112 (12.9%)	M=2.59
		M=3.03	
Number of problem sets that take you less than an hour to complete.	None	291 (33.7%)	30 (11.8%)
	Between 1 and 2	343 (39.7%)	101 (39.6%)
	Between 3 and 4	159 (18.4%)	56 (22.0%)
	Between 5 and 6	50 (5.8%)	38 (14.9%)
	More than 6	20 (2.3%)	29 (11.4%)

		UUM	AUST
		M=2.03	M=2.76
In a typical week, how many homework problems take you more than 15 minutes each to complete?	None	127 (14.6%)	26(10.2%)
	Between 1 and 3	328 (37.8%)	88 (34.5%)
	Between 4 and 6	296 (34.1%)	80 (31.4%)
	Between 7 and 10	68 (7.8%)	28 (11.0%)
	More than 10	48 (5.5%)	32 (12.5%)
		M=2.51	M=2.80
Preparing for class (studying, reading, writing, doing homework or lab work, analysing data, rehearsing, and other academic activities).	None	10 (1.2%)	22 (8.7%)
	Between 1 and 5	378 (43.5%)	72 (28.3%)
	Between 6 and 10	174 (20.0%)	46 (18.1%)
	Between 11 and 15	109 (12.6%)	29 (11.4%)
	Between 16 and 20	100 (11.5%)	39 (15.4%)
	Between 21 and 25	52 (6.0%)	20 (7.9%)
	Between 26 and 30	21 (2.4%)	16 (6.3%)
	More than 30	24 (2.8%)	10 (3.9%)
	M=3.31	M=3.65	
Working for pay on campus.	None	737 (84.8%)	152 (60.1%)
	Between 1 and 5	61 (7.0%)	40 (15.8%)
	Between 6 and 10	26 (3.0%)	26 (10.3%)
	Between 11 and 15	18 (2.1%)	17 (6.7%)
	Between 16 and 20	14 (1.6%)	7 (2.8%)
	Between 21 and 25	9 (1.0%)	6 (2.4%)
	Between 26 and 30	1 (0.1%)	2 (0.8%)
	More than 30	3 (0.3%)	3 (1.2%)
	M=1.34	M=1.92	
Working for pay off campus.	None	761 (88.0%)	158 (62.5%)
	Between 1 and 5	47 (5.4%)	34 (13.4%)
	Between 6 and 10	29 (3.4%)	25 (9.9%)
	Between 11 and 15	13 (1.5%)	11 (4.3%)
	Between 16 and 20	6 (0.7%)	11 (4.3%)
	Between 21 and 25	8 (0.9%)	6 (2.4%)
	Between 26 and 30	1 (0.1%)	0
	More than 30	0 (0.0%)	8 (3.2%)
	M=1.25	M=1.98	
Participating in co-curricular activities (organisations, campus publications, student government, social fraternity or sorority, intercollegiate or intramural sports, etc).	None	163 (18.8%)	97 (39.1%)
	Between 1 and 5	450 (51.8%)	67 (27.0%)
	Between 6 and 10	126 (14.5%)	32 (12.9%)
	Between 11 and 15	57 (6.6%)	16 (6.5%)
	Between 16 and 20	33 (3.8%)	22 (8.9%)
	Between 21 and 25	19 (2.2%)	6 (2.4%)
	Between 26 and 30	7 (0.8%)	4 (1.6%)
	More than 30	13 (1.5%)	4 (1.6%)
	M=2.42	M=2.41	
Relaxing and socialising (watching TV, exercising, etc).	None		
	Between 1 and 5	56 (6.4%)	12 (4.7%)
	Between 6 and 10	523 (60.2%)	85 (33.6%)
	Between 11 and 15	139 (16.0%)	48 (19.0%)
	Between 16 and 20	61 (7.0%)	46 (18.2%)

		UUM	AUST
	Between 26 and 30	30 (3.5%)	27 (10.7%)
	More than 30	5 (0.6%)	14 (5.5%)
		8 (0.9%)	12 (4.7%)
		M=2.62	9 (3.6%)
			M=3.50
Providing care for dependents living with you (parents, children, spouse, etc).	None	391 (45.2%)	33 (13.3%)
	Between 1 and 5	241 (27.9%)	67 (27.0%)
	Between 6 and 10	107 (12.4%)	51 (20.6%)
	Between 11 and 15	36 (4.2%)	27 (10.9%)
	Between 16 and 20	42 (4.9%)	28 (11.3%)
	Between 21 and 25	21 (2.4%)	17 (6.9%)
	Between 26 and 30	6 (0.7%)	8 (3.2%)
	More than 30	21 (2.4%)	17 (6.9%)
			M=2.18
Commuting to class (driving, walking, etc).	Between 1 and 5	383 (44.0%)	123 (48.6%)
	Between 6 and 10	154 (17.7%)	57 (22.5%)
	Between 11 and 15	98 (11.3%)	34 (13.4%)
	Between 16 and 20	73 (8.4%)	19 (7.5%)
	Between 21 and 25	48 (5.5%)	9 (3.6%)
	Between 26 and 30	28 (3.2%)	6 (2.4%)
	More than 30	86 (9.9%)	5 (2.0%)
			M=3.61

Respondents' Responses to their Engagement at the Universities

Respondents were asked the question to what extent they worked harder than they thought they could to meet an instructor's standards or expectations. As reported in Table 1, responses of the majority seemed to differ between the two institutions. 60.4% of the UUM students gave a very positive answer "often" while 44.7% of the AUST students responded "sometimes". Across the two institutions however, students ranked similar responses for "never" as the least, i.e. 1.6% for UUM and 5% for AUST.

Many (56.9% of the UUM students and 39.2% of the AUST students) seemed to agree that the coursework emphasised memorising skill. The overall mean score of the institutions was 2.83 and 2.94, respectively. AUST students (30.2%) seemed to respond higher than UUM (13.7%) in terms of the scale "very much". Pertaining to the analysing skill emphasised in the coursework, more than half of the UUM students (52.2%) responded "quite a bit" while only 36.5% of the AUST students thought so.

The overall mean score of the synthesising skill emphasised in the coursework was the same for UUM (M=2.71) and AUST (M=2.70). However, almost 55% of the UUM students responded "quite a bit" while only 37.4% of the AUST responded so. More AUST students (21.7%) responded "very much" than the UUM students (9.3%) on the same item.

In terms of whether the coursework incorporated the skill of making judgement about the value of information, arguments or methods, it was found that similar pattern of responses emerged between the two institutions. From the highest to the lowest, the responses were: "quite a bit", "some", "very much" and "very little". The AUST students however, seemed to have almost the same response to "quite a bit" (32.4%) and "some" (32%).

More than half of the UUM respondents agreed "quite a bit" (54.1%) that the coursework required them to apply theories or concepts to practical problems or in new situations. The AUST students agreed to "some" (33.6%) on the same item. More AUST students (26.2%) responded "very much" than the UUM students (13.0%) on the same item.

When asked whether the examinations during the current school year have challenged the students to do their best work, more than one-third of the UUM students (37.8%) and more than one-fourth of AUST students (26.7%) selected the scale of 5 from the range of 1 (very little) to 7 (very much). The scale 4 and 6 received almost the same score for both institutions, i.e. 25.2% (UUM) and 25.1% (AUST) for scale 4 and 21.1% (UUM) and 20.2% (AUST) for scale 6.

Respondents in both institutions also pointed out that they seemed to read between 1 and 4 books (58.0% for UUM and 30.0% for AUST) during the current school year. However, more AUST students (13.8%) seemed to read the assigned course readings for “more than 20” than the UUM students (2.4%).

In terms of whether the students did their readings on their own for personal enjoyment or academic enrichment, results showed that many students read between 1 and 4 (51.4% for UUM and 43.5% for AUST). Reading books between 5 and 10 received almost similar scores between the two groups i.e. between 26 and 27% respectively.

With regard to whether the students have done 20 pages or more of written papers or reports during the current school year, a majority of them agreed to the scale “between 1 and 4”. The scale “between 5 and 10” received the second highest score and “between 11 and 20” third for both groups. However, the AUST students had the same score for the second and third ranking, i.e. 18.1%. In addition, more AUST students responded to the scale “none” and “more than 20” than the UUM students.

Responding to the question of whether the students have done between 5 and 19 pages or more of written papers or reports during the current school year, the UUM students seemed to show similar scores for “none” and “more than 20” at 3.5%. This score is rather low compared to the percentage of the AUST students for both the scales. The findings also indicated that the majority of students for both universities have written papers or reports between 1 and 4.

The number of written papers or reports of fewer than 5 pages was also assessed. Of the two groups of respondents, only 2.9% of the UUM students reported writing more than 20, while the scale was the second highest rank for the AUST students (17.9%). Results also showed that the AUST students’ scores were somewhat more spread out between the 5 scales from “none” to “more than 20”. On the other hand, more than half of the UUM students (52.8%) responded to the score between 1 and 4 written papers or reports and more than one-third responded for the AUST students (37.5%) for the same scale.

In terms of whether the homework problem sets that the students take more than an hour to be completed in a typical week of the current school year, the UUM students had the same score for “between 5 and 6” and “more than 6” at 12.9%, while the AUST students had the same score for “between 1 and 2” and “between 3 and 4” at 36.1%. It should also be pointed out that the overall mean score is higher for UUM (M=3.03) than AUST (M=2.59).

As for the number of problem sets that they take less than an hour to complete, both UUM and AUST had almost the same score for the scale between 1 and 2 at 39.7% and 39.6%, respectively. The data also disclosed that the mean score is higher for AUST (M=2.76) than UUM (M=2.03). The data obtained for the UUM respondents showed a wide difference of score from a relatively high percentage (33.7%) for “none” and a relatively low score of “more than 6” (2.3%). The pattern is in contrast for the AUST students. The score is rather similar for the scales “none” (11.8%) and “more than 6” (11.4%).

Respondents of both groups seemed to select the scale of between 1 and 3 and between 4 and 6 as the two top scores for the number of homework problems that take them more than 15 minutes each to complete. Data from the AUST indicated that there were almost as many students who select the scale of “none” and the scale between 7 and 10. In contrast, the UUM data showed that there were more students who had “none” than “between 7 and 10” and “more than 10”.

In terms of the number of hours that students spent in a typical 7-day week preparing for class, the UUM data received higher score than the AUST for the scale between 1 and 5. As a whole, the UUM respondents indicated three scales as the lowest: none (1.2%), between 26 and 30 (2.4%) and more than 30 (2.8%). The AUST had between 21 and 25 (7.9%), between 26 and 30 (6.3%), and more than 30 (3.9%) as the lowest three scales. As high as 8.7% of the AUST students do not come to class prepared.

A majority of the UUM and AUST respondents indicated that they neither work for pay on campus or off campus. Only 13 UUM students (1.4%) work between 21 and 30 and more than 30 hours per week and 11 AUST students (4.4%) work for the same number of hours. No UUM students work for more than 30 hours for pay outside the campus and no AUST students work between 26 and 30 hours. However, about 8 AUST students work for more than 30 hours for pay outside the campus. About the same number of AUST students i.e. 11(4.3%) work between 11 and 15 and between 16 and 20 hours for pay outside the campus. Compared to other items, the mean scores for both groups were low (M=1.34 and M=1.92 for work for pay on campus while M=1.25 and M=1.98 for work for pay off campus).

In terms of whether or not the UUM and AUST students participated in the co-curricular activities, results showed that half of UUM respondents (51.8%) spent between 1 and 5 hours per week while more than one-third of the AUST respondents (39.1%) do not take part in such activities. Only 27.0% of the AUST students spent between 1 and 5 hours in the activities. Less than 6.0% of both groups of respondents spent more than 21 hours on the co-curricular activities.

Looking at the distribution of the responses for the time spent for relaxing and socialising, the AUST students spent more hours between 6 and 20 per week (a total of 47.9%) compared to the UUM students (a total of 28.4%). Majority of the UUM students (60.2%) spent between 1 and 5 hours per week to relax and socialise.

A high percentage (45.2%) of the UUM respondents did not spend time on providing care for dependents living with them. More AUST students (27.0%), however, did the same for between 1 and 5 hour per week. Results also showed that the AUST students in general had higher scores in terms of the number of hours spent for all the other scales in the item than the UUM group.

As far as the question on whether the students spent time commuting to class, it was found that the majority of the respondents spent between 1 and 5 hours per week on travelling. More UUM students (9.9%) travel more than 30 hours per week compared to the AUST students (2.0%).

All in all, there were significant differences in the mean scores between the UUM and AUST respondents for 15 out of the 22 items. The items in which AUST students' mean scores were higher include:

1. Memorising facts, ideas, or method from your courses and readings so you can repeat them in pretty much the same form;
2. Number of assigned textbooks, books, or book-length packs of course readings;
3. Number of written papers or reports of 20 pages or more;
4. Number of written papers or reports between 5 and 19 pages;
5. Number of written papers or reports of fewer than 5 pages;
6. Number of problem sets that take you less than an hour to complete;
7. The number of homework problems take you more than 15 minutes each to complete;
8. Preparing for class (studying, reading, writing, doing homework or lab work, analysing data, rehearsing, and other academic activities);
9. Working for pay on campus;
10. Working for pay off campus;
11. Relaxing and socialising (watching TV, exercising, etc); and
12. Providing care for dependents living with you (parents, children, spouse, etc).

Only 3 items showed higher mean scores for the UUM respondents. The items were:

1. Worked harder than you thought you could to meet an instructor's standards or expectation;
2. Numbers of problem sets that take you more than an hour to complete; and
3. Commuting to class (driving, walking, etc).

Conclusion and Recommendations

On the whole, the utilisation of the NSSE instrument was appropriate and helpful in providing explanations between the two HEIs and useful insights about the students' educational experience in general, and their levels of academic challenge specifically. Based on the findings, the following conclusions were drawn.

Generally, the respondents were involved in somewhat high levels of academic challenge in their universities. This was rationalised by the data, which showed that the two universities seemed to promote high levels of student achievement by setting high expectations for student performance. Students at both institutions were willing to work harder than they thought they could to meet instructors' standards and expectations. This finding supports the findings from the NSSE Annual Report (2001, 2003). Overall, students at UUM responded more positively whereby more than 70% answered "often" and "very often" as compared to about 50% for AUST. The curricula for both institutions also seemed to be on track. Students indicated that there was a blend between theory and practice. Responding to the question on whether the curricula applied theories to practical problems or in new situation, more than 65% of UUM students and around 55% of AUST students responded "quite a bit" or "very much". Additionally, the

examinations at both universities have also managed to challenge students to do their best work. On a scale of 1 to 7, the mean was at 5.01 for UUM and 4.91 for AUST. This finding once again points out that both higher institutions are heading in the right direction with regards to students' engagement as noted in Alvarez (2002) and Painter and Valentine (1996).

On a less positive note is the fact that students at both institutions were less involved in higher-order learning. Their responses to the question of how much their coursework emphasised the mental activities of memorising, analysing, synthesising, applying, and making judgments, indicated that memorising seemed to receive the highest mean score for both institutions. For UUM, the mean score was 2.83 while for AUST it was even higher at 2.94. Almost 71% of UUM students and 69% of AUST students responded "quite a bit" and "very much" to the item on memorising so that it can be repeated in pretty much the same form. The other items which were higher in the level of thinking skills received lower mean scores. The lowest mean score for UUM was for making judgements (M=2.70) while for AUST was synthesising and organising ideas (M=2.70). This finding is almost similar to the study by Norzaini et al. (2003).

Another disappointing finding is on the time devoted to preparing for class. According to the NSSE report, students should spend more than 25 hours a week preparing for class in order to be successful. The data of this study indicated that students at both institutions spent only minimal hours for this activity. More than 60% of UUM students and 55% of AUST students spent less than 10 hours per week. There were also responses in the "none" category. Almost 9.0% of the AUST students came to class unprepared. Relatively, fewer, only around 1% of the UUM students turned up unprepared for their classes. A similar pattern also emerged from the data on the number of readings of course related materials. Almost 70% of the UUM students and almost 40% of AUST students read four or less books (textbooks, books, book length packs of course readings). However, in terms of books for personal enjoyment and enrichment, the UUM students seemed to read more than the AUST students. In contrast to the NSSE reports, UUM and AUST students in general seem to read less than their counterparts in the United States.

The data on the number of written papers or reports confirmed that students were not particularly involved in activities that require higher order thinking skills. About 43% of UUM students and 25% of AUST students wrote only between 1 to 4 papers or reports of 20 pages or more during the school year that the questionnaires were administered. There were about 20% of AUST students who responded to "none" for the item. Significantly fewer UUM students (3.5%) choose "none". A similar trend was also observed in the item on the number of problem sets to complete in a typical week.

With regards to co-curricular activities, a majority of AUST students (37.6%) did not participate in any activities at all. This is sharply in contrast to the UUM data which showed that more than half (51.6%) of the student population were involved in "between 1 and 5" co-curricular activities in a typical week.

When asked about the number of hours in a week spent on relaxing and socialising, the mean score of the AUST respondents were much higher. The overall mean score was 3.50 while the UUM mean score was only 2.62. This finding indicated that because the AUST students were not involved in any co-curricular activities, they would spend more time to relax and socialise. This could also be related to the fact that more AUST students live off campus, in an environment which may not be as conducive as staying on campus. Clearly, this finding is consistent with the finding from the first round of NSSE data which states that students living off-campus are less engaged.

Respondents were also asked to what extent they spent time in a week on providing care for dependents living with them. Since a majority of the AUST students did not live on campus, they spent more time with their extended family members. This explained the fact that a majority of them spent between 1 and 5 hours a week while about half of the UUM students (45%) who stayed in hostels responded "none".

In light of the findings and discussion of the study, the following recommendations are advanced. Firstly, more effort should be put into getting students to be involved in higher order learning. Activities that require students to brainstorm and solve problems may develop this much needed skills. Additionally the case studies approach will also contribute to the development of higher order thinking skills as students will have to apply, analyse and make judgements. Secondly, as bridging the gap between theory and practice is crucial, both institutions should continue to strengthen their existing curricula to ensure that students are able to apply the theory that they have learned in the classroom to the workplace.

These two recommendations above are also listed as the 21st century skills needed for graduates in higher education institutions. Thirdly, both institutions need to devise methods and techniques to ensure that students come to class prepared. One of the ways is to provide students with uninformed tests and pop quizzes. Another more important measure is to shift from a teacher-centred to a more student-centred approach. Instead of relying on the lecture method, instructors should explore methods such as discussion, problem-based learning, discovery and cooperative learning. These student-centred methods will ensure that students come to class prepared. One issue, however, that may hinder the use of such methods is the large class size. Both institutions will have to look into this matter. Finally, if students are given longer and more challenging papers or reports to write as well as more complex problem sets, they will have little choice but to read wider. This will inadvertently lead to students reading more books as well as using their higher order thinking skills.

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