

2007/2008

ACADEMIC QUALITY SYMPOSIUM

TOWARDS A BETTER ACADEMIC QUALITY ASSURANCE

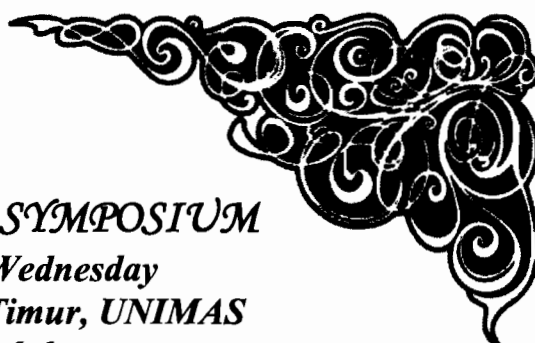
5th December 2007

ORGANISED BY:

**FACULTY OF ENGINEERING
UNIVERSITI MALAYSIA SARAWAK
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ACADEMIC QUALITY SYMPOSIUM

December, 5, 2007 – Wednesday

Dewan Santapan, Kampus Timur, UNIMAS

Symposium Schedule

08:00 – 08:15	REGISTRATION	
08:15 – 08:30	WELCOMING SPEECH FROM THE DEAN OF FACULTY OF ENGINEERING	
08:30 – 10:15	Session I : Enhancing Student Learning Process <i>Chairman : Dr Al-Khalid Hj Osman</i> <i>Reporteur : En. Ron Aldrino Chan</i>	
	Kaedah Mengoptimumkan Potensi Diri Pelajar "Optimizing Students Potential"	Ana Sakura Zainal Abidin
	Enhancing Student Learning Process	Liew Hon Boon
	Studying Experience in Japan : Malaysian Graduate's View	Aidil Azli Alias, Mohd Danial Ibrahim, Noor Hisyam Noor Mohamed, Shafrida Sahrani, Siti Nor Ain Musa
	Silence Students: Asian Culture or Passivity?	Charles Bong Hin Joo, Hollena Nori
	Student Centered Learning – Introducing the OER	Dr Mohd Ibrahim Safawi
	How UNIMAS Life Contributed to Working Life	Jong Fung Swee
	Q & A Session	
10:15 – 10:30	BREAK	

10:30 – 12:00	<u>Session II : Effective Teaching Learning Techniques</u> <i>Chairman : En. Ngu Sze Song</i> <i>Reporteur : Cik Shamsiah Suhaili</i>	
	Teaching Engineering Mathematics – A Case Study	PM Dr. Sinin Hamdan
	Improving Ways of Preparing and Delivering Lectures	M.S. Norazzlina, A.K.A. Razak, J.H. Adam
	Effective Instruction for Large Classroom : Engaging Active Learning Environment	Mohd Raduan Kabit, Norehan Zulkipli, PM Dr. Wan Hashim Wan Ibrahim, Ron Aldrino Chan @ Ron Bukiing
	New Method of Taking Attendance for Bigger Class : Experience from 1 st Year Subject; Multimedia Technology	Jonathan Sidi
	Case Study of Using “Autorating” Peer Evaluation System as a Cooperative Learning Evaluation Tool	PM Dr. Wan Hashim Wan Ibrahim, Mohamad Raduan Kabit
	Peer Assessments for Groupwork in Civil Engineering Courses	Azida Hj Rashidi, Dr. Mohd Ibrahim Safawi, Dr. Ahmad Lebbe Mauroof
Q & A Session		
12:00 – 13:30	LUNCH	
13:30 – 14:55	<u>Session III : Academic Curriculum and Deliverables</u> <i>Chairman : Ir Dr Andrew Ragai Henry Rigit</i> <i>Reporteur : En. Mohd Saufee Muhammad</i>	
	Philosophical Basis for Course Development	PM Dr Spencer Empading Sanggin
	Creating Engaging Learning with Multimedia : Towards Total Multimedia Learning Environment	Jonathan Sidi, Syahrul Nizam Junaini
	Using Software in the Teaching of Engineering Courses : Benefits and Pitfalls	Dr Ehsan Ahmed, Dr Ahmed Lebbe Mohamed Mauroof
	Supporting Instructional Process with PowerPoint : Experience from Multimedia Technology Subject	Syahrul Nizam Junaini, Jonathan Sidi
	Monitoring The Correlation of Programme Outcomes to Civil engineering Course	Dr. Siti Halipah, Idawati Ismail, Onni Suhaiza Selaman
Q & A Session		
14:55 – 15:15	DISCUSSION SESSION	
15:15 – 16:15	CLOSING CEREMONY	
16:15 – 16:30	REFRESHMENT	

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*ACADEMIC QUALITY SYMPOSIUM
ORGANIZING COMMITTEE*

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PROF. MOHD AZIB SALLEH

Co-Advisor

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CHARLES BONG HIN JOO

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DR. MAHBUB HASAN

Reception/Ceremony

LARRY AK SILAS TIRAU

MESSAGE FROM THE DEAN, FACULTY OF ENGINEERING



On behalf of Faculty of Engineering, I would like to express my warmest welcome to all participants of the One Day Academic Symposium 2007 which is organised by our faculty members. I would like to extend my greatest appreciation for their tremendous efforts in organising such an important event for us to share new ideas in teaching and learning.

Concurrent to the aspiration of UNIMAS, the Faculty of Engineering is endeavoured to be one of the leading Engineering Faculties in this country by imparting quality engineering education through quality teaching programmes and research developments. To date, the Faculty of Engineering consists of three engineering departments which are excelling in its own niche areas. Next year, faculty is expected to embark on a new programme under the newly established Department of Chemical Engineering. This new addition of engineering department is aimed to augment the expertise within the faculty which undoubtedly will destine the Faculty of Engineering, UNIMAS, as centre of excellence towards teaching of fundamental engineering programmes and research developments.

In line with the quest, the faculty have taken numerous numbers of far-reaching measures in order to be on track with the ever-changing needs of quality engineering programme. To date, the faculty have vigorously prepared for next year's accreditation exercise for all of its four engineering programmes and have implemented Outcome Based Education (OBE) to all courses offered by the faculty. In addition, the faculty have also congregated a group of dynamics and experienced staffs in order to direct the faculty to the future through our persistent strategic planning exercise.

As such, I hope that this symposium will provide the academicians a place for sharing their invaluable experiences and exchanging of useful information towards a better quality in teaching and learning process.

Thank you.

Dr. Azhaili Baharun
Dean,
Faculty of Engineering,
Universiti Malaysia Sarawak

MESSAGE FROM THE ORGANIZING CHAIRMAN



The organizing of this inaugural Academic Quality Symposium 2007 is part of our efforts to improve the quality of engineering education offered to UNIMAS undergraduates. The Faculty share the vision of becoming an exemplary university of internationally acknowledged stature. A journey of a thousand miles start with the first step.

The objective of this symposium is to get feedback from Faculty members and experts from within UNIMAS on the improvements we can introduce to our delivery system. Two themes of concern are on enhancing student learning process and academic curriculum. All the presentations will be noted by a Reporteur and the General Reporteur will present the outcomes in the plenary session during the closing ceremony. The Faculty is in the midst of establishing and strengthening the existing continual quality improvement (CQI) system on our delivery methods. The spirit of CQI is a fundamental requirement of accreditation by the Engineering Accreditation Council, Malaysia. Our Faculty is applying for the next accreditation in 2008. Hence, this symposium has been timely organized.

The responses from the call for extended abstract has been overwhelmingly encouraging. We are proud to announce that paper submissions come from our alumni and the Student Association Faculty of Engineering or SAFE. CALM has been specially invited to present a paper on education philosophy. Some of the Faculty members, both the senior and new ones, submitted interesting papers based on their experience in the Faculty. The rationale of using the extended abstract format is to serve as a practice for staff to learn writing and submitting to conferences. We hope to motivate and build their confidence to submit to other conferences and journals in future.

Finally, we would like to express our deepest appreciation to Prof Mohd Azib b Salleh, Deputy Vice Chancellor (Academic and Internationalization) and Dr Azhaili b Baharun, our Faculty Dean for their continuous support in organizing this event. Also, to all the organizing Committee members for their trust and hard work in making this symposium a success. We hope everyone will benefit from this Academic Quality Symposium 2007.

Thank you.

Dr Mohd Ibrahim Mohd Zain
Chairman
Academic Quality Symposium 2007



***ENHANCING STUDENT LEARNING
PROCESS***



Enhancing Student Learning Process

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ABSTRACT The enhancement of student learning process can be carried out in various ways. One of the more prevailing improvement required would be the instigation of the constructivism theory in lecturing. Learning should be centered on the student's effort instead of the lecturer. The delivery system too requires improvement and the most possible candidate of improvement would be to integrate andragogical learning amongst students. This will encourage development of skills and mentality capable of handling the working environment. The student-lecturer interaction of the current system is excellent but may prove counter productive when student number increases. The use of electronic media such as forums, online contents and instant messaging will regain some productivity inefficiency due to large student numbers.

1. INTRODUCTION

The improvement of tertiary education has always been improving the syllabus according to the industry requirements and lacks improvements in the sense of student learning process. This literature focuses on presenting possible solutions to enhancing the student learning process. It will include theoretical learning concepts such as constructivism and andragogy. The efficient use of simple every day computer technology will also contribute to this improvement.

2. CONSTRUCTIVISM FOR BETTER STUDENT UNDERSTANDING

Constructivism is an epistemological view of knowledge acquisition emphasizing knowledge construction rather than knowledge transmission and the recording of information conveyed by others. The students are conceived as one that builds and transforms knowledge.

For the purpose of this literature, the dialectical constructivism was given due focus. It views the origin of knowledge construction as being the social interactions among people that involved sharing, comparing and debating among students and mentors, in this case the students and the lecturers. Through this interactive communication, learning and knowledge is given center stage which enables student to both refine their own knowledge and help others to attain knowledge.

While the faculty is mostly applying lecturer centered learning, the constructivism method on the other hand dramatically changes the learning focus towards putting the students' own effort to understand as the main objective. Generally, all constructivist theory revolves around four major characteristics,

which are:

- I. Learners construct their own learning
- II. The dependence of new learning on students' existing understanding.
- III. The critical role of social interaction.
- IV. The necessity of authentic learning tasks for meaningful learning.

For a traditional learning method, the knowledge is all conveyed by the lecturer with the rest of lecture hall being passive receivers. There was no way of knowing if the correct knowledge or any knowledge at all was conveyed to the audience. The constructivist approach on the other hand challenges students to develop their own understanding of the subject or topic given through discussion among peers and guidance from the lecturer. To avoid misconceptions or misinterpretation of the given tasks or subject, the lecturer will act as the moderator and divert the students back on track with the intended knowledge.

Through constructivist method, the general notation towards a monotonous and quiet lecture can be changed towards a dynamically structured cooperative learning environment which everybody looks forward to attend. Through this method, students are better empowered to inquire about uncertainty in their understanding and also given more opportunity to solve problems. This method also causes students to struggle for better understanding of subject matters in which at the end of the day promote true growth that better prepares them for the working environment.

There are some critics towards this constructivism method that refers to it as not effective and presents flaws of not delivering knowledge as it was intended

by the lecturer. One of the issues would be on the method of creating a focused learning environment. This issue can be tackled by designing a task that is specifically suited to the desired outcome. It however should not predetermine the path towards achieving the outcome. Instead the students should be given freedom to achieve the outcome in what ever way they develop.

Some critic says that this method does not require much planning and coordination than the traditional method. The truth, constructivist method requires the lecturer to do more planning on the task so that the outcome is what it was intended. An improper planning would result in wasted efforts and misguided students. But once the desired outcome is achieved, it means that the students have learned the conveyed knowledge.

Another issue is that some may think this method does not involve the lecturer in delivering the knowledge directly and thus reduces the lecturer's role in the learning process. Contrary to this, the lecturer actually has more responsibility. Instead of just telling or informing, the task changes to guiding students towards genuine understanding of subjects. It is up to the lecturer to decide on when intervention is required or how much intervention is needed.

Constructivist learning is also perceived as lacking of structured learning. With proper planning, students are always guided in achieving the predetermined outcome. The difficulty level will be determined by the lecturer based on the particular batch of students' performance on previous learning. It must be noted that discussion alone is not an indication of learning but a discussion with the lecturer's observation and guidance will indeed promote better understanding.

Lecture notes are then only to be used as supplement to the discussion and reference books as validation to the students' understanding.

3. FACULTY'S DELIVERY SYSTEM

The current delivery system practiced by the Engineering Faculty is mainly focused on the Pedagogical teaching approach. In this approach, students are dependent upon the lecturers for all the learning required from each course or subjects. The lecturer assumes full responsibility for the scope of knowledge taught and the appropriate method which students should obtain this knowledge. At the end of the course, the lecturers are mainly evaluators on the learning achievements of the students.

Students on the other end are expected to attend the courses or lectures with little experience that could be tapped as a resource for learning during the course. In this sense, the lecturer's experience is the predominant factor of teaching throughout the course. It is also a norm that students are always told what must be learned on order to advance to the next level of mastery.

The learning orientation is largely based on the process of acquiring theoretical knowledge of each course and the content units are sequenced in such a

way that it follows the logic of that particular course which is mostly from reference books. The only motivation that drive the students' learning external factors. These external factors consist of external pressures, competition for grades and the consequences of failure.

Instead of relying heavily on Pedagogy approach, the faculty's delivery system should incorporate more of Andragogical approach. Although the Pedagogy approach is somewhat effective in the first two years of the engineering bachelor's degree program, it becomes a problem when students are in the third year right before they go for industrial training. The reliance on lecturers is brought to the working environment where there is no clear guidance given on what to learn or how to learn. Thus large possibility exists that the learning during training is shallow in terms of the quality of the knowledge and experience obtained.

Towards the final year study at the faculty, students should be greatly implanted with Andragogical type of learning so to prepare them for after graduation scenario. Students should be allowed to be self directed, responsible for their own learning and conducts self evaluations. At this stage, the faculty should ensure that the students are capable of assessing the gaps between where they are and where they need to be. The learning urge should come from the student's need of knowledge to perform better in certain aspect of their field of study.

The learning orientation should be shifted towards knowledge gain through the need to perform a task or solve a certain problem. All the learning provided must cater for relevance to the afore-mentioned tasks. The learning should be organized around work situations instead of subject matters from reference books. It is however be mentioned that, for Andragogical method to be effective, students should already be sowed with internal motivators such as recognition from lecturers. Self esteem and self realization too shall be prominent which proves to be a powerful tool in the working environment ahead.

4. STUDENT-LECTURER INTERACTION

The currently implemented student-lecturer interaction in the faculty is of satisfactory level and serves the faculty's community well. This face-to-face interaction among lecturer and student creates an open environment where students can easily approach lecturer for academic related inquiries. But with the recent increase in student intake, this interaction approach is reaching its limits. Lecturers no longer can entertain every student as the numbers are simply too big.

Measures should be taken to tackle this problem immediately before it becomes a barrier to lecturer's productivity and student's academic welfare. A digital approach shall be focused for the purpose of this literature. The digital approach here means a more

comprehensive implementation of digital contents usage. Approaches that should be given due considerations are the use of dedicated forums for each lecturer, better usage of digital content uploading and instant messaging.

A dedicated forum for each lecturer would enable the students to make academic inquiries of the lecturer's subjects without requiring immediate answer. From the lecturer's stand point, precise answers can be provided for the questions posted as there is ample time to validate their answer. Through forums, all the inquiries can be answered without having twenty or maybe more students in their offices. It also serves as reference for other students with similar enquiries, thus reducing redundant questions.

Although there is some implementation of online digital contents, the implementation is still at its infancy for our faculty. Each lecturer should be given their own online space to upload supplementary contents of the courses that they teach and make it compulsory that the contents are uploaded and updated regularly. The university's upgraded IT infrastructure should be capable of accommodating this with ease and students will not have to pester lecturers for notes.

The implementation of instant messaging will ease the communication between lecturers and students when they are outside the lecture hall. Instant messaging will allow simple questions such as assignment due dates, schedule change etc be answered quickly and productively. Although the university does not allow instant messaging, but it has come along way and most of the industry has accepted it as a communication tool among peers. An adaptation could be done on the instant messaging software to accommodate the university's requirement. Restriction such as internal use only may prove to be a sufficient security measurement.

5. CONCLUSIONS

The student learning process can be enhanced through various improvements in the learning process itself, the faculty delivery system and the student-lecturer interaction. Constructivism theory of learning should be instigated into the learning process as it promotes construction of knowledge instead of replication. The pedagogy type of delivery should be mated with andragogical type of delivery towards the last two years of the program. A better use of IT devices would make student-lecturer interaction easier and more productive even when the student numbers increases greatly.

6. REFERENCES

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Studying Experience in Japan : Malaysian Graduate's View

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ABSTRACT With the implementation of 'Look East Policy' proposed by Tun Mahathir Mohamad, Malaysian government has been sending Malaysian students to further their study there in order to emulate the ways of the developed countries in Japan. The 'Look East Policy' was a framework for learning from successful Japanese, and adapting some of the applicable values into Malaysian needs. The entire long journey for the Japanese to achieve today's success start from the education system. To maintain the quality of education system of higher institute, JABEE had been established. With the establishment JABEE, an outside organization can fairly evaluate whether programs in engineering education conducted by institutions of higher education such as universities reach the levels expected by society and accredit those programs that reach such levels. Nowadays, all the higher institutions of education in Japan are in the process of implementing the educational system proposed by JABEE. This paper will share the moments experienced by Malaysian students studying under the Japan's education system

1. INTRODUCTION

Japan is well-known as a developed country where everything must be in order, following every rule and well disciplined. It is believed that the secret of the Japanese success and its remarkable development lies in its labour ethics, morale, and management capability. In order to maintain the success, Japanese politician and academician think that education system plays the most important role, where the value of moralities can be taught. In order to maintain the success, a nongovernmental organization, the Japan Accreditation Board for Engineering Education (JABEE) had been established on November 19, 1999. This organization examines and accredits programs in engineering education in close cooperation with engineering associations and societies. This body plays the same role as Engineering Accreditation Council (LAN) in Malaysia.

Until November 2007, majorities of the public universities in Japan have been accredited by JABEE. And recently, Japan had been successfully recognized as one of the member of Washington Accord. This success can be achieved in such a short period because of the ethics, morale and the management capability of the students themselves. The first barrier that a foreigner student has to face in Japan is the language, and the second one is the fact that Japan is based on group similarities and homogenous qualities, where it's hard for any foreigner to get equalities in the Japanese community. This paper will explain a brief picture of the university's life in Japan experienced by Malaysian graduates. The first section gives a concise picture of the morale and ethics of Japanese students in university. Second section explains the experiments and practice-

based learning implemented in Japan, and the last section explains the difference between Final Year Project conducted by final year students in Japan and in other countries.

2. JAPANESE STUDENT

2.1 Cliques; circle of trust

One of the factors that can be extremely seen among the Japanese students in most higher education level in Japan is cliques. The cliques form a small exclusive group of friends or associates which resembles a circle of trust among close friends.

They do academic and social activities together, discuss about anything even share secretive information among themselves. It is hard to get into the circle if you are an outsider, especially foreign students. If you come to the class together with another foreigner, the difficulty to join the cliques would be double and more time consuming to cope with the high pace class.

2.2 Study Environments

In most of the universities in Japan, the administration of the institution supports the ISO14001 which holds a motto "Environmentally Friendly". To support this motto, they keep the environment of the university by hiring citizens as cleaners.

Japan is well known as a community which highly respects to their senior citizens because of the strong senior-junior relationship. This keeps the students maintain the university environment clean and well kept.

2.3 Time Management

In terms of time management, most Japanese students are punctual and high disciplined. Time is valuable for them as it can be seen that whenever they make any

appointment or group discussion meetings, they will start and end right on time, regardless of full attendance or not.

In addition to that, deadline for assignments usually are very strict and no compromise. Assignments submitted even one minute late from the deadline will be rejected or get warning from the lecturer.

2.4 After-class Social Activities

Part time works are common for student's life in Japan. Usually they will do their part time work after the class or in the weekends, such as newspaper deliveries, translations, waitress and others. The part time works are actually for the students' pocket money. Usually they spent it for their '*nomikai*'.

'*Nomikai*' is a Japanese culture which gives the chance for the students to gather with their colleagues and seniors after class. The importance of this '*nomikai*' is to maintain the bond inside their unique society.

3. LABORATORY ACTIVITIES AND WORKSHOP

Experiments and practice-based learning is introduced to students in Year 2. This is exceptionally rational because the students need to be exposed to basic educational in the year 1 and concentrate on the subjects. In year 2, students have a certain level of understanding to their respective major, therefore introducing laboratorial works or experiments during year 2 will give more understanding for the students to apply the basic knowledge into hands-on practice. Students are to make a report on every experiment and submit the reports 1 or 2 weeks after.

For workshop practice, students are exposed to machine handling and workshop environment in year 2 and year 3. As a normal procedure, students are instructed to wear safety jacket, boots and wear safety equipment during the workshop practice. The technicians are also dedicated to help and assist students at any time when needed. This is crucial to give right handling instructions and to make sure students do not use machines improperly or waste the materials in the workshop.

As students need to concentrate on studies together with lab works and assignments, it is helpful to balance the workload on assignments and lab works. Therefore, the lecturers does not burden students with too many assignments, but instead distribute assignments and lab works equally for students to understand better on their studies and at the same time, be able to focus on lab or workshop works.

4. FINAL YEAR PROJECT

Final year project (FYP) is one of the important courses to the final year student. In the FYP course, students have an opportunity to apply the theoretical knowledge learned from the classroom to the practical activities such as design and fabricate a robot, conduct an experiment based on the selected material, analyze the heat effect and etc. FYP make the student more creative in order to find the references and solutions

based on the selective topics given by the lecturer.

Majorities of the universities around the world are practicing the FYP to the final year student including Japan and Malaysia. However, there are some differences in the implementation. The FYP become main course in the academic curriculum in Japan since research is one of the important activities in the country. Besides that, for the final year student the whole final year is provided to focus on the FYP only without any other courses. Lot of money also given by the Japanese government and the Japanese industries to support research activity in the university. One good thing about FYP in Japan is the university very supportive in funding the FYP student in any areas as long as the student is interested in research. The Japanese will do a research again and again until getting the best result. Try and error is key factor of the research successful in Japan.

4. CONCLUSIONS

Studying in Japan requires an open mind and flexible attitude to previously conceived notions about what learning a foreign language is and how it should be done. Contrary with other country, for instance Malaysia, where student-centered learning being implemented, Japan is a country where lecturer-centered learning is still being implemented widely. Majorities of the lecturers still come to the class and continuously give lecture for an hour and half without considering whether the outcomes of the lecture being achieved or not. Throughout the lecture, half of the class will get sleepy and sleep. However, the strange thing is, even though the delivery method can be considered as outdated and not effective, at the end of the day, the students can understand very well the course. Why? The answer for this goes back to the ethics and morale of the students themselves. How bored the lecture is, they respect their lecturer by not making noise during the lecture, and they will make sure either they copied the lecture notes from their friends or get it from their seniors. They make an effort to study on their own first before they look for the lecturer asking for assistance.

In order to learn and to adapt with the Japanese community and Japanese education system, it is necessary for students to ask questions and to not be afraid of making mistakes. This is all a part of the learning process, and in order to further the experience and knowledge in the engineering fields, it is important for the student to participate actively.

Silence Students: Asian Culture or Passivity?

Charles Bong Hin Joo¹, Hollena Nori²

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ABSTRACT Silent response given by students when being posed questions or asking for their opinion on a subject matter is a situation faced by most lecturers when conducting classes, especially with Asian students. Studies carried on the behaviour of Asian students have shown that these groups have different learning styles and method compared to western students. Unlike the western culture, these Asian students are less active in participation during the learning activities in class. This paper will discuss the background of this issue, factors contributing to this issue and finally proposing some of the methods that could be use by lecturers in encouraging students to speak up in class.

1. INTRODUCTION

Most lecturers encounter the experience of frustration due to lack of response and long silence from students when questions are being posed to them. As a result, the lecturers themselves have to answer their own questions in order to fix the situation. Another scenario is when the lecturers open the floor for question and answer session but no questions were being asked from the students. Some lecturer relates students' silence in class with passivity and lack of cooperation. Is this necessary true? Is it a culture for Asian students to remain silence in class? What other factors that contributes to this issue. What can the lecturers do to encourage students to speak up and ask questions? All of these will be discussed in this paper.

2. BACKGROUND OF THE ISSUE

In a study done among Chinese students, it was found that these students do not tend to ask as many questions as their western counterpart [1]. According to the Chinese culture, questioning during the learning activities may be viewed as representing a challenge and disrespect to the teacher [2]. This opinion is explained by the Chinese Confucion Heritage Culture, where the teacher is regarded as the most respected master who has all the wisdom and it is impolite to interrupt and asked questions. This aspect is called power distance where the teacher is given great respect and authority in the classroom. However, this culture has created a gap and boundary between the teacher and students, and this has caused the teachers become inaccessible to the students.

Having said that, how about other Asian students that are not of Chinese heritage? From Hofstede's model of cultural differences among societies [3], he categorized Asian students as collectivist, which by definition means that these cultures tend to emphasize the needs of society as a whole, identifying individuals through their

membership in a group rather than their position, rank, or personal qualities [4]. When, learning activities are conducted in the classroom, students in collectivistic societies will seldom respond to the lecturers' questions if the questions are directed to the entire class. They will only speak if called personally, however there are hardly any volunteers when answering questions in the class. Furthermore, these students prefer to work in small rather than large groups.

Another contributing factor to this issue is the incompetence of speaking the language of instruction. Asian students may be quiet in class because they are not confident in speaking English language fluently. As a consequence, they may lack self-confidence in expressing themselves and also afraid to 'lose face' by exposing their weaknesses. Other justifications associated with silence are because they are shy, does not understand the subject matter, the fear of being attacked back by the lecturer and afraid of being portrayed by other classmates as asking irrelevant and ridiculous questions.

It is not fair to look into this issue from the student's perspectives only. Sometimes, it is the lecturers teaching style that contribute to silence in class. If the lecturer only focus on the subject matter thoroughly and teach without losing time with not much student interaction, students will tend to perceive that the lecturer are not open to opinion and discussion. Consequently, this will lead to a passive classroom environment where students' creativity and enthusiasm in learning are not manifested.

This classroom environment where exam-oriented is over emphasized will create a situation where students have fear of making mistakes which leads to the feeling of low self esteem, therefore they will only dare to express their ideas if they have something brilliant and positive to contribute. As a result, this will produce students that are only concern about the end product or result, where they are expected to learn how to do and not learn how to learn. This is a total opposite concept

from the western educational theory which favors constructivist approach, where student construct their own knowledge merely facilitated by the teacher [5].

3. RECOMMENDATIONS FOR THE ISSUE

With the factors mentioned earlier that contributed to students' silence, lecturers who face this issue need to identify what are the contributing factors for their class as well as creating a conducive learning environment.

One essential characteristic of effective teaching is to be sensitive to the individual needs of students. Lecturers who alter instruction to accommodate individual differences transmit the message that they want to reach all of their students at the same time. Students are much more likely to participate actively in learning activities when they know that their lecturer has considered their needs.

Lecturers should become more approachable by learning students' names. Calling students by name signifies a positive relationship between lecturers and students. Students who recognize that their lecturers think of them as individuals with individual needs will feel more comfortable in class and be more responsive in discussions.

Lecturers should also promote the concept of student-centred learning where discussions are encouraged. This is to let the students know that at university level, discussions are important in building knowledge and it is acceptable to make mistakes for the sake of learning, thus adopting the constructivist approach.

During lesson, lecturers can pose various questions and challenges and provide opportunities for students to learn and work together in small groups so they can learn from each other, adopting the cooperative learning approach. When students are put in small groups, they will feel less threatened especially if they lack self-confidence.

Lecturers need to create a safe environment for student participation by insuring that they never ridicule a student's questions and opinion. One way to encourage participation is to reinforce appropriate students behaviour both verbally and non-verbally. This can be done by encourage them to really speak up without worrying the consequences of their statement.

It is crucial for the lecturers to emphasize the importance of communications in the class for the purpose of learning by asking questions and giving response.

4. CONCLUSION

Silence students does not necessary mean that they are passive. A lot of factors can be traced that leads into this issue, either from cultural background, language problem or the environment that the lecturer creates in class. To encourage students to speak up, the focus should not only highlight specifically on teaching method into practice but also to enhance students' learning. This can be done by using methods that draw on the cultural dynamics of Asian students and also to

emphasize on student-centred learning instead of teacher-centred.

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Student Centered Learning – Introducing the OER

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ABSTRACT This paper introduces the idea of Open Education Resources to the faculty members. OER are an internet empowered worldwide community effort to create an education commons. A brief introduction of OER is outlined with some examples of how it can be applied. There are several advantages that can be derived by adopting OER into our delivery system. This will theoretically put the learning process centered on the students and make them responsible of their own academic performance. It is concluded that the use of OER will elevate the status of our faculty into the global arena.

1. INTRODUCTION

The issue of students' academic performance has been the major concern of the Deputy Dean's office. There are many reasons that can explain the students' performance. The easiest and simplest reason is that the students do not work hard enough to pass their exams. It is important that we realized students' performance is not the product of their own doings only. There are many other factors that could contribute to students' failure. Figure 1 attempt to categorize a few possibilities.

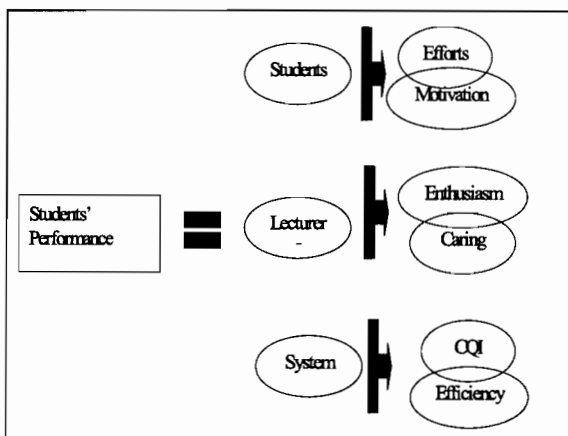


Fig.1 Factors affecting students' performance

There is one simple rule in the above equation and that is, a student will learn when he wants to and choose to learn what he wants. The objective of this paper is to obey that rule by introducing the Open Educational Resources (OER) philosophy. The knowledge of OER was obtained from the recently concluded Global Higher Education Forum 2007, organized by the Ministry of Higher Education on 6 & 7 November 2007 [1].

2. INTRODUCING OER

In 2002, UNESCO coined the term, Open Educational Resources (OER). OER refers to the "open provision of

education resources enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes". If content and software can be obtained openly and freely, then educators and learners worldwide will benefit. Educators can review, adapt and translate content for their own teaching and institutional setting. Learners can access materials for independent study [2]. The term was first adopted at UNESCO's 2002 Forum on the Impact of Open Courseware for Higher Education in Developing Countries funded by the William and Flora Hewlett Foundation. OER educational resources include *learning content, tools (softwares) and implementation resources*. The website that hosted the reflection and discussion of OER and Free and Open Source Software (FOSS) belongs to the International Institute for Education Planning (IIEP).

This is an interesting concept that challenges the traditional theory of a teacher and student relationship in a classroom set up. OER promotes sharing of resources that are openly and freely available on the web for use, re-use, adaptation, translation, and localization.

Take for example, in the study of civil engineering materials. Course notes from the University Of California Berkeley, Massachusetts Institute of Technology and Arizona State University can be easily downloaded and used for teaching purposes. Their web addresses are <http://www.ce.berkeley.edu/courses>, http://ocw.mit.edu/OcwWeb/civil_and_env/~lectureNotes and <http://www4.eas.asu.edu/concrete> respectively. Of course, there will be a need to modify the course notes to suit our own syllabus in UNIMAS. On the part of the learners, if we duly informed them that these study materials can also be obtained from such websites and relevant to their courses, then the onus will be on them to study at their own time and pace. Chances will be high that they could understand better and more using various notes from other universities than that of our own. Recommendation and acknowledgment of these websites by course lecturers is necessary in this process.

Another example is in the teaching of mathematics. Virginia Tech has abundant topics especially for

mathematics teachers and students. Browsing their web at <http://www.math.vt.edu/people/~sitesforTs.html>, revealed interesting topics related to the subject. There are not less than 70 links to explore including one section especially for kids.

The above two examples are sufficient to prove that teaching-learning process has changed from the ordinary classrooms to laptops and desktops. The use of OER has a community of 500 members from 90 countries [3]. Educators are allowed to download, re-use, and modify the course contents without any copyright infringement. The materials are categorized under Creative Commons (CC) License Deed. This means, you are free to copy, distribute, display, and perform the work and to make derivative works. These are allowed under the conditions that you must give the original author credit, the works is not used for commercial purposes and if you alter, transform, or build upon this work, you distribute the resulting work only under a license identical to this one. The OER and CC log are given in Figure 2.



Fig.2 OER and Creative Commons logos

3. ADVANTAGES

There are many advantages that can be derived by embracing the OER philosophy.

They are;-

1. Faculty members can benchmark the depth of teaching with that of other countries
2. Students are allowed to browse extra materials for their revision or references other than that of course lecturer only
3. The gap between the different teaching and learning styles can be reduced
4. The learning process will be done at the students' own pace and time
5. The use of such technology concurs well with the present computer savvy generations.
6. The faculty members will join the rank of global educators by engaging themselves in OER

It is vital that we keep an open mind and make ourselves ready to embrace new strategies. Being too conservative and keeping ourselves within our own domain will be akin to the Malay proverb of "*katak dibawah tempurung*", which infer a frog living under a coconut shell and not knowing what happens outside.

4. CONCLUSION

As a conclusion, it is hoped that faculty members try out the OER in their teaching. Instead of distributing bundles of paper notes, it might do good to distribute websites that the lecturer consider applicable for the course. Students are thus given more resources and can study at their own pace and according to their own learning styles. Also, faculty members can register themselves in OER forums and keep abreast of development on this aspect, at the same time, contributing towards its accessibility. At the Faculty level, it will be interesting to study the impact of using OER on our students' performance. This will reduce the blame on students' failure due to non-enthusiastic lecturers.

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How UNIMAS Life Contributed To Working Life?

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ABSTRACT Gaining entrance to public university in Malaysia is an honour. Due to the limited number of students that each university can accept, especially in fields such as engineering and medicine, only the elite students are able to gain entry. University is the place for acquire and learning knowledge and skills at the same time campus life provide platform and opportunity to start the real social life in society. The facilities and subject provided in university, attitude and behaviour of learning styles and method will build the character of graduate and how it can contribute to real working life.

1. INTRODUCTION

Thank you for the great honour of giving the opportunity as Engineering Alumni to share the experience on my title: How UNIMAS Life Contributed To Working Life? Universiti Malaysia Sarawak was established in 24 December 1992. The Faculty of Engineering was formed in 1993 and the pioneer batch of I am enrolled as second batch student of Program Mechanical Engineering and Manufacturing System, Faculty of Engineering, UNIMAS in May 1997. After completed the course in October 1999, I have served as Mechanical Engineer for two employers, they are KTA (Sarawak) Sdn Bhd (December 1999 -Mac 2001) and JKR Sarawak (April 2001 – currently). The facilities and subject provided in university, attitude and behaviour of learning styles and method will build the character of graduate and contribute to real working life. How much of learning process in UNIMAS is used during working life? What aspect of your student life has most impact on working life? How does study in UNIMAS help to motivate in long life learning? All of these will be discussed in this paper.

2. UNIMAS LIFE AND WORKING LIFE

In UNIMAS students are require to take the generic course and minor courses beside core course. These types of course design create golden opportunities to learn and think outside of the box. The core subject learned during university contributed a lot in my working life. For example the subject of Energy for Manufacturing readies me to design renewable energy concept for Bario Green Clinic Project using solar hybrid system. Our Department was set up the Research and Development Unit (RDU) in December 2003. RDU are venturing into Renewable energy project such as solar power or photovoltaic system, hydro power and hybrid system. The other subject such as Design, Design/Material Selection, and Engineering Management able me to perform the mechanical services design for building project. Nowadays firms or departments has embarked on a number of significant initiatives to ensure that it continues to play its role and

deliver the products and services of high quality, increased productivity and speedily as Total Quality Management, 5S, or ISO Quality Management. Those quality concepts had learned in university and able to adapt to working environment. Generic course like Self Management Skills, Public Speaking and Communication Skills able me to present ability and valuable to potential employer during recruitment stages. Stress management, public speaking and communication skills are major skills apply in daily working life. Meeting with internal or external client department or public to explain the design concept and implementation of government policies involving application of the knowledge and skills acquire in generic course.



Figure 1: Applying Generic Skills

Think out of box and creative solutions are essential skills to increase the performance index. Taken complimentary course in Faculty Applied and Creative Arts allow me to open my mind and express the unlimited potential and creativity. The knowledge, effort, idea, creative, potential, skills and technology all are requested to produce a vase from clay. Learning about ceramic has train me on dare to fail and use the creative

solution to solve the problem. Campus life has had the most impact on my working life. Fortunately, the old campus of UNIMAS is small and provides closer relationship to each other either from same faculty or other faculty. The orientation activities are one of the important key to learn to develop a network of friends and acquaintance on campus. Team work such as develop a group of people with whom I can discuss lectures and assignment, collaborate on difficult tutorial problem, share references or borrow or swap notes if member miss a class. Multi races in the campus and stay together with different ethnics able to study their behaviour, backgrounds and culture. Such environment encourage me to study on how to adapting myself in different living behaviour. This allows me to gained precious keys to unlocking some of richest treasuries of communication knowledge.



Figure 2: Adapting To Local Culture

Long life learning are key for continuous improvement and develop on skills and knowledge. However to practice the long life learning need the motivation and encouragement. A scenario of lot of mature age students returning to learning in UNIMAS is help to motivate me continue the learning process. I always taken part to attend the seminar or course provided by employer. Beside that I also invest my money to attend some short courses related to financial, management and self motivation.

3. RECOMMENDATIONS

Although the knowledge and skills acquire during university life are useful and applicable in working life its still have a lot of room to offer better skills coming graduate. The emphasize on Project Management and application on the project software such as Primavera or Microsoft Project are needed. The exchange program with other university within nation or oversea shall be involve majority students. Faculty should have contributed more extra activities such as seminar, site visits, expo etc. to alert student with latest technology and future development. The leadership skills,

management skills and personal financial management skills are essential to graduate. To encourage long life learning university should provide seminar, short course, or platform for alumni to attend or present the latest development on technology, skills or practices.

4. CONCLUSION

Core subject are fundamental for graduate to perform the task assigned. However the generic course and complimentary course are major factor for graduate success in career and society. Active in campus life can polish the generic skill which bring great impact on network develop and working life. Only through continuous development program can sustain the motivation on long life learning.



***EFFECTIVE TEACHING LEARNING
TECHNIQUES***



Teaching Engineering Mathematics -a case study

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ABSTRACT This paper present the finding from the final exam of 89 students (60 mechanical and 29 electronic). From the finding the author posed the critical question: Why compensate between quality and quantity- (meaning less fail but with no quality)? and Do we need to fail them and let them learn by giving more time and effort to gain more knowledge and experience- or is it consider as Taboo? and the most important question raised: can the principle of marking scheme based on real judgment or merely based on sympathy.

1. INTRODUCTION

Whatever you judge as pass is relevant because you know personally the student you are handling in the class. When the passing rate is instructed to be change to please the top management then we are no more than just pleasing people rather than doing the right things right.

2. RESULTS

The respondents are from 89 students, 60 are mechanical students and 29 electronic students. Lack of knowledge in simple geometry such as: $\sin \pi = 0$, $\cos \pi = -1$, $\sin \pi/2 = 1$, $\cos \pi/2 = 0$. instead they have $\sin \pi = 1$, $\cos \pi = 0$, $\sin \pi/2 = 0$, $\cos \pi/2 = 1$ and $d(\cos\theta)/d\theta = -\sin\theta$ but instead $d(\sin\theta)/d\theta = -\cos\theta$. In the spherical coordinate $x = r\sin\phi\cos\theta$, $y = r\sin\phi\sin\theta$ and $z = r\cos\phi$ instead they write $x = r\cos\phi\sin\theta$, $y = r\sin\phi\cos\theta$ and $z = r\cos\phi$. The question is: if they know z why they are confuse for x and y . They are also confuse in applying the formula; given: $d(\arctan\theta)/d\theta = 1/(\theta^2 + 1)$ but in application: $d[2\arctan(y/x)]/dx = 2[1/\{(1/x)^2 + 1\}](-y/x^2)$. What is missing in the answer? Divergence of a vector is scalar. Majority students gave answer as a vector! Using curl for divergence and vice versa i.e. using divergence for curl. Can we give zero mark for very purposely wrong question being solves. Confuse in coordinate system, mixed up of polar, cylindrical and spherical coordinate. Giving 2 answers and not defining which one as the correct answer. Changing the original question is i.e. $F(x,y,z) = 3zi - 4j + yk$ but change to $F(x,y,z) = 3xz i - 4yj + zyk$. Why change the question?

3. CONCLUSIONS

Although 27 students fail i.e. gaining less than 40/80 the rate of student scoring more than 60/80 is significantly high i.e. 19/89 students gain between (60-70)/80 and 10/89 students (70-80)/80. Based on these two ranges the author conclude that the level of difficulty in the exam is quiet low and the rate of failure is basically due to the initial weakness of the students in their background knowledge.

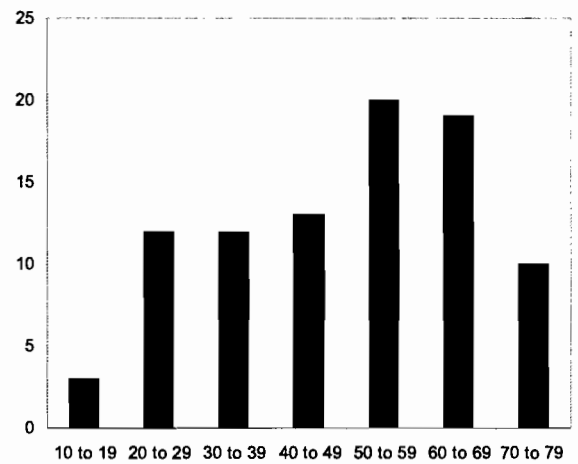


Figure 1 Histogram of result obtained from the final exam (full mark is 80%)

4. APPENDIX

The exam questions;

- 1) (a) Expand the determinant

$$|A| = \begin{vmatrix} 1 & 2 & 3 & 4 \\ 4 & 3 & 2 & 1 \\ 0 & -1 & 2 & 3 \\ 1 & 6 & 4 & -2 \end{vmatrix}$$

- 1) (b) Apply the Gauss reduction to the system to solve X_1, X_2 and X_3

$$X_1 + 3X_2 + X_3 = 2$$

$$2X_1 + 3X_2 - 4X_3 = 7$$

$$-2X_1 - X_2 + 8X_3 = -9$$

$$3X_1 + 7X_2 - X_3 = 8$$

- 2) Find the Eigen values and eigenvectors of

$$A = \begin{pmatrix} 1 & 2 & 1 \\ 6 & -1 & 0 \\ -1 & -2 & -1 \end{pmatrix}$$

(Hint: use the cofactors of the second row to obtain the characteristic equation)

- 3) (a) Evaluate $\iint_S F \cdot dS$ using Divergence

Theorem) where

$$F(x, y, z) = 4xzi - y^2j + yzk$$

and the volume is a cube with surface bounded by $x=0, x=1, y=0, y=1, z=0,$ and $z=1.$

- 3) (b) Find the flux from F through the surface S by using Stoke's Theorem

where $F(x, y, z) = 3zi - 4j + yk$
and S is the part of the plane $x + y + z = 1$ in the first octant with upwardly pointing unit normal.

- 4) (a) Use polar co-ordinates to evaluate

$$\iint_R (y^2 - 2x) dA$$

Where

$$R = \{(x, y) \in \mathbb{R}^2 \mid x^2 + y^2 \leq 9, y > 0\}$$

- 4) (b) Use Green's Theorem to evaluate

$$\oint_C (3xy - x^3 e^x) dx + (\cos y + \sqrt{y}) dy$$

Where C is the triangle with vertices $(-1, 0), (0, 0)$ and $(0, 1)$ taken once, anticlockwise.

- 4) (c) Evaluate $\iint_S (3x^2 + 3y^2 + 3z^2) dS$

where S is the surface of the sphere

$$x^2 + y^2 + z^2 = 4$$

Improving Ways of Preparing and Delivering Lectures

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ABSTRACT This paper presents the problems that occurred based on our teaching experiences in university. It might happen to newcomers as an academician in university's education life. Further, the paper also proposed some suggestions to improve the ways of preparing and delivering lectures.

1. INTRODUCTION

Lecturing is a must for every lecturer in any universities. It is essentially a form of public communication or speech. The ability to lecture well, like speaking well, is an acquired skill.

Lecturing is not the only way to teach, but it can be very effective if it is used with appropriate goals in mind [1]. One of the things we're trying to do in a lecture is touch our audience emotionally, not just logically because that's when they remember, that's when they are fascinated by it, that's when they want to study it more [2]. Many effective teachers try to foster active involvement, participation and interaction of students in classes, and to communicate their openness to and respect for alternative and challenging point of view [3].

The following section will enumerate briefly some problems occur in lecturing and suggestions to improve it.

2. PLIGHT IN LECTURING

Students' perception simply conclude that a poor lecture originate by poor lecturer. The poor lecturers are basically referred to instructor who read scripted note without looking to the audience, teacher who spoke to white board or slide presentation, and lecturer who spoke too soft which could neither be heard nor understood. But, all these examples are too common and even good lecturers make mistakes. Some particular problem areas involve in lecturing are:

a) *Cover too much material*

It is simply impossible to deliver everything during the two hours per class in 14 weeks of the semester. It is true; however, many lecturers deny it because they felt that the course is very complex and specific which require thorough explanation. Thus, the lecturers may fall behind or too fast to be in schedule which leads to difficulty for students to appreciate and understand the course contents.

b) *Fail to prepare adequately*

Being an expert on the subject matter does not assure efficiency in lecturing. Even most of the professors are dedicated their lives to learning, thinking and doing research but they might turn to be miserable lecturers. However, the importance of the knowledge as a foundation for effective lecturing is not to be argued but preparation before lecture is necessary.

c) *Disorganize materials*

The material prepared might be considered as rationally organized by the lecturers but if the students fail to understand, they tend to perceive lecturers as disorganized because (i) they cannot spot the key ideas; (ii) no summaries provided; and (iii) organizational outline is too intricate to track.

d) *Ignoring student response*

The ignorance of the students' reaction during the lecture may cause by the rigidity of the lecturers to cover their lecture notes ("cover the book" syndrome) without welcoming any questions from the students or requests for slowing down the way of delivering their lecture. Normally, students' problems such as confusion or frustration to understand the content are shown by non-verbal communication or facial expression of boredom.

e) *Distracting or Poor Delivery*

Tendency of the lecturers to say words such as "alright" or "ok" or "you know" repeatedly may lead to distract students' attention to learn the content being addressed. The students, who realize this, will start counting the number of times their instructors used the words rather than focusing on the subject matter. Besides, poor delivery qualities include speaking monotonously, talking too rapidly, failing to use reinforcing gestures, and playing with objects (pencils, or ruler) which could be the source of distraction.