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KATA ALU-ALUAN PENGARAH POLITEKNIK NILAI

.

بسم الله الرحمن الرحيم

السلام عليكم ورحمة الله وبركاته *dan Salam Sejahtera*

Limpahan syukur yang tidak terhingga ke hadrat Allah S.W.T kerana dengan izinNya Seminar RISE2014 anjuran Politeknik Nilai, Negeri Sembilan buat julung kalinya ini berjaya diadakan di bawah kelolaan Unit Penyelidikan dan Inovasi.

Pada kesempatan ini, saya ingin mengucapkan setinggi-tinggi ucapan tahniah dan syabas kepada pihak penganjur atas daya usaha menganjurkan seminar RISE2014 yang bertemakan "Kecemerlangan Pendidikan melalui Kelestarian Penyelidikan dan Inovasi " ini. Turut tidak dilupakan, ucapan tahniah dan syabas juga ditujukan buat semua pembentang dan pengkaji yang telah bertungkus-lumus menjalankan kajian dan penyelidikan.

Seperti kita sedia maklum, cabaran dan perubahan lanskap pengajian tinggi amatlah dinamik dan perlu ditangani dengan bijaksana. Sejak beberapa tahun kebelakangan ini, kita melihat timbulnya keprihatinan yang lebih tinggi orang ramai akan kepentingan pengajian tinggi untuk pengukuhan ekonomi, pengembangan sosio-budaya dan pembangunan masa depan masyarakat, yang pada asasnya bermula dari penguasaan ilmu seseorang individu. dalam era perkembangan ilmu yang pesat, penghasilan inovasi serta tahap interaksi pada peringkat global yang tinggi, kita perlu memikirkan bagaimana sistem pengajian tinggi dapat dapat menyumbang kepada pembangunan negara sekaligus memantapkan tahap persaingan global Malaysia. Lebih penting, fungsi baharu institusi pengajian tinggi dalam merakyatkan ilmu memerlukan perubahan paradigma yang akan memberi kesan kepada cara kita berfikir, mengatur strategi dan beroperasi. Justeru itu, adalah diharapkan melalui RISE2014 ini dapat menerapkan budaya penyelidikan melalui pembentangan dan penulisan yang dikongsi bersama.

Saya yakin kajian yang memerlukan ketelitian yang terperinci ini memerlukan komitmen dan tahap disiplin yang tinggi bagi memastikan bagi memastikan dapatan kajian menepati disiplin kajian yang ditetapkan. Atas usaha yang bersungguh-sungguh ini saya sekali mengucapkan tahniah dan syabas kepada semua para pembentang dan peserta yang terlibat. Justeru, besarlah harapan saya agar seminar RISE2014 ini dapat diteruskan dengan mengambil penyertaan pelbagai pihak dan dapat dijadikan platform untuk berkongsi ilmu bagi membangunkan modal insan dan jati diri pelajar-pelajar.

Akhir kata, semoga RISE2014 yang bertemakan "Kecemerlangan Pendidikan melalui Kelestarian Penyelidikan dan Inovasi" ini menjadi titik permulaan bagi melebarkan agenda penyelidikan ke arah memberikan impak yang tinggi dalam arus perkembangan pendidikan masakini khususnya dan untuk masa-masa akan datang.

Sekian. Terima Kasih.

TAJUDDIN BIN ABDUL RASHID
Pengarah
Politeknik Nila

KATA ALU-ALUAN KETUA UNIT PENYELIDIKAN DAN INOVASI

.

السلام عليكم ورحمة الله وبركاته *dan Salam Sejahtera*

Alhamdulillah, syukur ke hadrat Allah S.W.T, selawat dan salam ke atas junjungan besar Nabi Muhammad s.a.w., ahli keluarga dan para sahabat baginda sekalian.

Seminar "RISE 2014" yang dianjurkan ini adalah satu wacana lisan bersifat interaksional dan proses komunikasi bagi penyebaran ilmu dan maklumat daripada hasil penyelidikan. Sebagai kelompok institusi utama sektor pengajian dan latihan teknikal negara, politeknik adalah peneraju pembangunan modal insan dalam sektor ini. Aktiviti penyelidikan dan inovasi adalah satu pilihan tindakan strategik yang tepat kerana dapat mengeksploitasi maklumat yang ada melalui saluran untuk penjanaan ilmu baharu bagi penambahbaikan dalam pelbagai segi operasi pembangunan modal insan teknikal yang berilmu pengetahuan.

Pembangunan Politeknik Nilai Negeri Sembilan (PNS) adalah juga cetusan idea hasil kajian dua kumpulan pakar iaitu dari Education Australia melalui NCVER pada tahun 90an dan kajian kedua oleh pasukan Bank Dunia melalui kumpulan pakar antarabangsa CDC, Germany. Hasil kajian digunakan dalam perancangan strategik pembangunan sistem politeknik (petikan dari laporan "Long Term Master Plan", projek ESSP, Bank Dunia, April 2002). Dengan ini jelas penyelidikan memberi menafaat terutama dalam usaha untuk menentukan dasar dan polisi pelaksanaan sesuatu projek. dalam dunia akademik hari ini, pembudayaan penyelidikan adalah satu keperluan, bukan lagi satu pilihan. Selain memberi impak kepada persekitaran dan institusi dimana kita berada, penyelidikan menambah pengetahuan kendiri atau "personal knowledge" seperti yang kerap didapati dalam penulisan oleh cendekiawan terkenal seperti Ibnu Khaldun dan Polanyi. Pendedahan kepada penyelidikan membawa kepada kecemerlangan akademik yang boleh membantu dalam mencapai visi, misi dan objektif institusi

dalam penganjuran seminar "RISE 2014" yang ulung ini, penyertaan begitu menggalakkan dan adalah menjadi hasrat kami untuk menjadikan aktiviti penyelidikan, inovasi dan penulisan sebagai aktiviti berterusan. Melalui seminar seperti ini, penyelidik berpeluang untuk berkongsi hasil usaha mereka disamping memperoleh maklumbalas yang berguna untuk terus menambahbaik hasil kajian yang lepas. PNS melalui UPI berhasrat untuk berusaha menyediakan platform seperti ini sebagai batu loncatan kepada pembudayaan penyelidikan yang lebih mapan. Selaras dengan hasrat dan hala tuju Transformasi Politeknik untuk membina keupayaan politeknik bagi membangunkan sumber manusia negara untuk memenuhi keperluan Model Baharu Ekonomi (MBE), penekanan kepada keupayaan inovasi dan kreativiti adalah satu keperluan.

Akhir kata, saya mengucapkan terima kasih kepada pihak PNS, pembentang, peserta dan semua pihak yang bekerjasama menjayakan penganjuran seminar "RISE 2014". Adalah diharapkan anda semua memperoleh sesuatu pengalaman yang penuh bermanfaat dan memperoleh ilmu yang berguna bagi penerusan usaha dalam apa jua bidang saudara saudari sekalian.

Selamat Membudayakan Penyelidikan Demi Kecemerlangan Akademik

HAJJAH HALIMAH BT CHE HASSAN
Ketua Unit Penyelidikan dan Inovasi
Politeknik Nilai Negeri Sembilan

TABLE OF CONTENT

Kajian Pengaruh Keadilan Prosedur Terhadap Hubungan Penyertaan Belanjawan Dan Regangan Belanjawan

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Kata Kunci : Penyertaan Belanjawan, Keadilan Prosedur, Regangan Belanjawan, Industri Hotel

Abstrak. Kajian ini dijalankan bagi menguji pengaruh penyertaan belanjawan para pengurus hotel terhadap regangan belanjawan. Bersesuaian dengan teori agensi yang mengatakan individu dijangka bertindak untuk kepentingan diri sendiri, adalah dijangkakan pengurus melakukan regangan belanjawan semasa penyertaan belanjawan bagi mencapai matlamat diri sendiri. Kajian ini turut melihat kesan keadilan prosedur sebagai pembolehubah pemoderat terhadap hubungannya dengan penyertaan belanjawan dan regangan belanjawan. Keadilan prosedur dianggap sebagai pemoderat kerana apabila penilaian prestasi pengurus tidak dilakukan secara adil, dijangka pengurus bertindak mementingkan diri sendiri dengan menambahkan eleman regangan di dalam belanjawan yang disediakan. Kutipan data adalah melalui soalselidik dengan responden kajian terdiri daripada 163 orang pengurus hotel yang berdaftar dengan Persatuan Hotel Malaysia (MAH). Data dianalisis melalui teknik regresi. Penemuan kajian membuktikan penyertaan belanjawan mempunyai hubungan yang positif terhadap regangan belanjawan. Selain itu, analisis regresi berhierarki mendapati keadilan prosedur merupakan faktor pemoderat bagi hubungan di antara penyertaan belanjawan dan regangan belanjawan. Hasil kajian ini memberikan implikasi kepada pihak pengurusan bahawa penyertaan belanjawan merupakan peluang bagi berlakunya regangan belanjawan. Namun keadaan ini mampu dikawal sekiranya keadilan prosedur di tempat kerja dapat ditingkatkan.

Pengenalan

Belanjawan merupakan elemen penting sistem kawalan pengurusan (SKP) dalam organisasi. Ia digunakan secara meluas sebagai alat perancangan dan kawalan (Nik Nazli et al. 2003; Uyar & Bilgin 2011). Hubungan antara perancangan dan kawalan adalah saling berkaitan di antara satu sama lain kerana perancangan menetapkan garis panduan bagi tindakan yang akan diambil dan kawalan pula akan memastikan bahawa tindakan yang diambil selari dengan apa yang dirancangkan (Aizzat et al. 2006). Oleh itu, pihak pengurusan mendapat manfaat daripada kegunaan belanjawan tersebut kerana membolehkan setiap apa yang dilaksanakan adalah mengikut apa yang dirancang serta membolehkan tindakan pengurus dipantau dan dijadikan piawaian untuk membandingkan prestasi kerja. Selain itu, belanjawan turut digunakan sebagai alat penentu prestasi (Steed & Gu 2009). Oleh itu, belanjawan mempunyai kesan langsung kepada gelagat pengurus kerana mereka akan berasa puas hati apabila sasaran dapat dicapai, sebaliknya merasa tertekan dan gelisah apabila tidak dapat mencapai sasaran yang telah ditetapkan. Keadaan ini menyebabkan pengurus berkecenderungan untuk melakukan regangan belanjawan (Douglas & Wier 2000; Shayuti & Maliah 2007) bagi membolehkan mereka mencapai sasaran belanjawan dengan mudah seterusnya memperoleh ganjaran.

Regangan belanjawan adalah merujuk kepada keadaan pengurus-pengurus berkecenderungan untuk mengurangnyata hasil atau menambahnyata kos yang diperlukan semasa penyediaan belanjawan (Pascal & Carla 2013; Yuen 2004) bagi memudahkan mereka mendapat ganjaran apabila sasaran belanjawan berjaya dicapai. Dengan usaha yang sedikit, mereka senang mencapai sasaran belanjawan yang telah ditetapkan, seolah-olah mereka telah menunjukkan prestasi kerja yang baik seterusnya menerima ganjaran pengurusan. Kehadiran regangan belanjawan yang sebegini memberikan kesan yang negatif kepada organisasi kerana ia secara tidak langsung menjejaskan kebolehpercayaan sesuatu maklumat (Dunk & Perera 1997; Pascal & Carla 2013). Selain itu, dengan kehadiran regangan belanjawan yang bersifat negatif ini dikhuatiri akan menjejaskan fungsi SKP yang sepatutnya membantu proses merancang dan mengawal pengurusan kewangan organisasi. Amalan regangan belanjawan ini seterusnya akan menyebabkan kepincangan dalam SKP serta menjadikannya tidak efektif. Oleh itu, aspek gelagat pengurus dalam sistem belanjawan haruslah difahami sepenuhnya untuk menangani kesan negatif yang timbul akibat interaksi manusia dalam sistem belanjawan (Siegel & Marconi 1989).

Kajian mengenai regangan belanjawan bukanlah sesuatu yang baru dalam kajian perakaunan pengurusan kerana telah banyak kajian yang dijalankan (Maiga & Jacobs 2007; Stede 2000; Yuen 2004). Namun begitu, kajian mengenai regangan belanjawan ini masih lagi mendapat perhatian para pengkaji kerana isu yang masih diperdebatkan ialah berkaitan faktor yang mempengaruhi wujudnya regangan belanjawan tersebut selain hasil kajian yang tidak konsisten. Dengan mengenalpasti dan memahami faktor yang menyumbang kepada kewujudan regangan belanjawan, maka kawalan terhadap gelagat pengurus dapat dilakukan dengan berkesan seterusnya melancarkan fungsi-fungsi pengurusan iaitu merancang, mengawal dan menilai prestasi.

Pernyataan Masalah

Didapati 47% syarikat di Malaysia mengalami sekurang-kurangnya satu kes memanipulasikan maklumat kewangan dengan alasan mengejar kemewahan hidup atau tamak dan masalah kewangan peribadi (KPMG 2009). Masalah ini memberikan indikasi kemungkinan pengurus-pengurus melakukan regangan belanjawan dengan tujuan memudahkan mereka mencapai belanjawan yang disediakan, seterusnya mendapat ganjaran pengurusan. Kemungkinan berlakunya regangan belanjawan adalah tinggi jika penilaian prestasi pengurus dibuat berdasarkan pencapaian belanjawan yang disediakan. Situasi ini berlaku dalam industri perhotelan kerana salah satu cara terbaik untuk menilai prestasi pengurus adalah melalui pencapaian sasaran belanjawan (Jones 2008; Uyar & Bilgin 2010) iaitu pengukur prestasi yang berbentuk kewangan. Pengurus akan turut sama terlibat menyediakan belanjawan dan kemudian prestasi mereka dinilai berdasarkan pencapaian belanjawan yang disasarkan tersebut. Permasalahan kajian ini ialah, adakah penyertaan belanjawan dan keadilan prosedur mempengaruhi tindakan melakukan regangan belanjawan di kalangan pengurus-pengurus industri perhotelan?

Objektif Kajian

Objektif kajian ini secara umumnya adalah untuk mendapatkan bukti empirikal tentang hubungan antara penyertaan belanjawan dan keadilan prosedur terhadap regangan belanjawan. Secara khusus kajian ini bertujuan untuk :

a) Menilai kesan penyertaan belanjawan terhadap regangan belanjawan;
b) Menilai pengaruh keadilan prosedur terhadap hubungan antara penyertaan belanjawan dan regangan belanjawan;

Persoalan Kajian

Berpandukan kepada objektif kajian yang dinyatakan, maka persoalan kajian yang ingin dijawab dalam kajian ini adalah :

a) Adakah penyertaan belanjawan mempengaruhi tindakan pengurus untuk melakukan regangan belanjawan ?
b) Adakah keadilan prosedur mempengaruhi hubungan di antara penyertaan belanjawan dan regangan belanjawan?

Tinjauan Kajian Lepas

Kajian mengenai regangan belanjawan bukanlah sesuatu yang baru dalam kajian perakaunan pengurusan kerana telah banyak kajian yang dijalankan (Maiga & Jacobs 2007; Stede 2000; Yuen 2004). Namun begitu, kajian mengenai regangan belanjawan ini masih lagi mendapat perhatian para pengkaji kerana isu yang masih diperdebatkan ialah berkaitan faktor yang mempengaruhi wujudnya regangan belanjawan tersebut selain hasil kajian yang tidak konsisten (Maiga & Jacobs 2007; Yuen 2004).

Penyertaan belanjawan merupakan faktor penentu regangan belanjawan yang sering digunakan. Namun begitu hubungan di antara penyertaan belanjawan dan regangan belanjawan menunjukkan hasil yang tidak konsisten. Terdapat kajian mendapati apabila pekerja diberikan peluang untuk menyertai proses menetapkan belanjawan maka mereka lebih menghargai peluang yang diberikan seterusnya memberikan komitmen untuk mencapai sasaran belanjawan yang mereka sendiri tetapkan. Ini membawa kepada pengurangan tindakan melakukan regangan (Fisher et al. 2000; Dunk & Perera 1997). Namun begitu terdapat juga kajian yang mendapati sebaliknya kerana dengan penyertaan belanjawan ia membuka peluang kepada pengurus menyumbang maklumat yang mengandungi elemen regangan. Ini membawa kepada maksud semakin besar penglibatan pengurus di dalam penyertaan belanjawan, semakin tinggi regangan belanjawan yang akan dilakukan (Shayuti & Maliah 2007; Young 1985).

Menurut Pascal dan Carla (2013), persepsi keadilan di kalangan anggota organisasi dapat mengurangkan gelagat untuk melakukan regangan belanjawan dan manipulasi data. Tindakan tidak beretika seperti regangan belanjawan dan manipulasi data terjadi disebabkan oleh ketidakadilan sistem belanjawan yang dibentuk dan dilaksanakan di dalam sesebuah organisasi. Bagi mengurangkan tindakan tidak beretika ini, persepsi keadilan dalam sistem belanjawan perlu ditingkatkan bagi mengurangkan regangan belanjawan dan manipulasi data. Pascal dan Carla (2013) menyatakan terdapat tiga dimensi keadilan organisasi yang wujud dalam sistem belanjawan iaitu keadilan pengagihan, keadilan prosedur dan keadilan interaksi. Dimensi-dimensi ini ditakrifkan sebagai :

a) Keadilan pengagihan - merujuk kepada keadilan semasa proses perlaksanaan belanjawan. Keadilan pengagihan bermaksud pihak atasan perlu menentukan kaedah pengagihan sumber organisasi walaupun terhad secara saksama kepada pengurus bawahan mereka (Colquitt 2001). Sumber merujuk kepada pembahagian tugas atau peranan, gaji, kenaikan pangkat dan ganjaran. Pengurus akan melihat bagaimanakah perlaksanaan pengagihan sumber dalam organisasi serta membandingkannya dengan sumber yang diperoleh oleh pengurus yang lain. Hasil daripada perbandingan ini akan mempengaruhi individu untuk meningkatkan atau mengurangkan usaha atau mengubah persepsi mereka terhadap hasil yang bakal diperoleh. Oleh itu organisasi perlu bersedia memberikan ganjaran yang berhak diterima oleh pengurus apabila didapati layak untuk menerimanya.

b) Keadilan prosedur - merupakan satu bentuk keadilan dalam perlaksanaan sesuatu prosedur contohnya prosedur pelaksanaan belanjawan dan prosedur penilaian prestasi di mana keadilan dilihat apabila organisasi membuka peluang kepada pengurus untuk turut serta dalam membuat sesuatu keputusan berkaitannya (Konovsky 2000). Apabila pengurus dilibatkan dalam penyelesaian sesuatu masalah, diberikan ruang dan peluang untuk menyuarakan pendapat serta mengemukakan alternatif ke atas tindakan yang diambil, maka mereka akan beranggapan bahawa terdapat keadilan prosedur yang diamalkan di dalam organisasi.

c) Keadilan interaksi - wujud apabila pengurus menerima layanan dan penjelasan mengenai perlaksanaan sesuatu prosedur (Colquitt 2001). Semasa perlaksanaan proses belanjawan, pengurus akan berinteraksi dengan ketua, berunding sasaran belanjawan yang ingin dicapai serta menilai prestasi belanjawan yang telah dilaksanakan. Layanan dianggap adil jika ketua melaksanakan keputusan dengan memaklumkan kepada mereka serta memberikan penjelasan yang cukup berkenaan dengan keseluruhan sistem belanjawan tersebut. Sebaliknya, kegagalan ketua untuk melaksanakan keadilan interaksi menimbulkan rasa terasing, konflik, merendahkan motivasi pengurus, ketegangan dan kebimbangan di tempat kerja.

Di Malaysia, kajian berkaitan regangan belanjawan dimulakan oleh Nik Nazli et al. (2003). Kajian mereka melihat dari aspek teknikal amalan belanjawan di Malaysia secara menyeluruh dan membandingkannya dengan United Kingdom dan New Zealand. Hasil kajian mendapati tiada perbezaan amalan belanjawan di Malaysia berbanding dua negara tersebut. Walau bagaimanapun regangan belanjawan di Malaysia adalah tinggi (58%) berbanding United Kingdom (23%) dan New Zealand (27%).

Kajian seterusnya di Malaysia telah dilakukan oleh Shayuti dan Maliah (2007). Ini bagi mendapatkan bukti empirikal apakah faktor penentu yang menyebabkan amalan regangan belanjawan yang tinggi di Malaysia. Responden kajian terdiri daripada pengurus-pengurus syarikat Korea yang bertapak di Malaysia. Kajian ini melihat faktor penekanan belanjawan, penyertaan belanjawan, sistem pengesanan regangan dalam organisasi, budaya individualisme serta faktor agama sebagai penentu kepada kecenderungan melakukan regangan belanjawan di Malaysia. Hasil kajian menunjukkan hanya penyertaan belanjawan dan penekanan belanjawan yang mempengaruhi regangan belanjawan sebaliknya faktor lain tidak memberi kesan. Data statistik ini turut disokong oleh maklumat daripada temu ramah dan maklumat penyata kewangan syarikat, di mana sebarang varian yang berlaku tidak dipertanggungjawabkan kepada pengurus tersebut jika mereka mempunyai justifikasi mengenainya. Hasil temu ramah juga menunjukkan pengurus akan diberikan ganjaran jika mencapai sasaran yang ditetapkan. Dengan kata lain, mereka akan melakukan regangan belanjawan dengan membuat sasaran belanjawan yang mudah dicapai supaya memperoleh ganjaran. Secara tidak langsung hasil temu ramah dan maklumat penyata kewangan turut menyokong bahawa faktor penyertaan belanjawan dan penekanan belanjawan mempunyai hubungan yang positif terhadap regangan belanjawan.

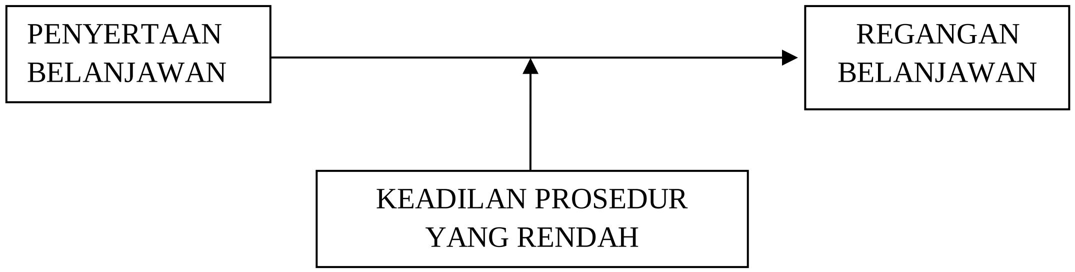
Model Kajian

Secara keseluruhannya kajian ini menggunakan teori agensi sebagai asas pembentukan model kajian. Teori agensi menjelaskan hubungan antara dua pihak iaitu pihak agen dan pihak prinsipal di mana agen tersebut akan melaksanakan tugas bagi pihak prinsipal (Jensen & Meckling 1976).

Berdasarkan teori agensi, penyertaan pengurus di dalam penyertaan belanjawan akan memberikan peluang kepada mereka melakukan regangan belanjawan. Tindakan ini dilakukan bagi mencapai matlamat diri sendiri seperti mendapatkan ganjaran iaitu hasil daripada tercapainya sasaran belanjawan tersebut. Pengurus yang mempunyai persepsi keadilan prosedur yang tinggi akan menunjukkan gelagat yang positif seperti meningkatkan komitmen terhadap organisasi, kepuasan bekerja dan meningkatkan prestasi. Sebaliknya jika persepsi pengurus terhadap keadilan prosedur adalah rendah, pengurus akan memperlihatkan gelagat yang negatif seperti melakukan regangan belanjawan. Oleh itu, regangan belanjawan semakin bertambah apabila disertai dengan keadilan prosedur yang rendah.

Berdasarkan teori yang dinyatakan, maka terbentuk model dalam kajian ini seperti yang ditunjukkan dalam Gambarajah 1.

GAMBARAJAH 1 – MODEL KAJIAN



Pembentukan Hipotesis Kajian

a) **Penyertaan Belanjawan dan Regangan Belanjawan**

Kajian ini menjangkakan regangan belanjawan mempunyai hubungan yang positif dengan penyertaan belanjawan. Bersesuaian teori agensi, setiap agen dijangka bertindak mementingkan diri sendiri serta cuba memaksimakan kekayaan dan bersikap inovatif untuk mencapainya. Pengurus sebagai agen akan cuba mencapai matlamat mereka dengan pelbagai cara di antaranya akan memasukkan elemen regangan di dalam belanjawan yang mereka sediakan apabila terlibat di dalam dalam proses penyertaan belanjawan bagi menunjukkan prestasi yang baik. Selari dengan hujah ini, Lukka (1988), Shayuti dan Maliah (2007) mendapati jika penglibatan pengurus semasa penetapan belanjawan adalah tinggi, maka peluang regangan belanjawan semakin tinggi untuk dilakukan kerana pengurus akan berusaha untuk mendapatkan ganjaran iaitu dengan melakukan regangan belanjawan tersebut. Mereka mendapati pengurus yang menyertai penyertaan belanjawan akan memanipulasikan keadaan tersebut dengan menetapkan sasaran belanjawan yang mudah dicapai. Pemahaman ini membawa kepada pembentukan hipotesis berikut :

H1 : Penyertaan belanjawan berhubungan secara positif dengan regangan belanjawan.

b) **Penyertaan Belanjawan, Keadilan Prosedur Yang Rendah dan Regangan Belanjawan**

Pengurus akan berpandangan wujud keadilan prosedur jika mereka meyakini seluruh proses menilai prestasi pengurus dilaksanakan dengan adil, mereka diberikan peluang untuk mengkomunikasikan maklum balas berkaitan prestasi kerja dan penentuan ganjaran. Jika terdapat unsur-unsur keadilan semasa proses penilaian prestasi ini, maka pengurus akan lebih bermotivasi untuk melakukan kerja dengan baik serta menunjukkan komitmen yang tinggi terhadap kerja (Sholihin & Pike 2009).
Kajian Staley dan Magner (2007) mendapati bahawa persepsi keadilan prosedur akan meningkatkan kepercayaan kepada ketua. Rasa kepercayaan ini meningkatkan komitmen pengurus terhadap sasaran belanjawan di mana pengurus menghargai peluang yang diberikan kepada untuk turut sama terlibat di dalam penyertaan belanjawan ini.
Selaras dengan teori agensi, kajian ini menjangkakan pengurus akan melakukan regangan belanjawan jika persepsi keadilan prosedur pengurus terhadap ketua adalah rendah. Oleh itu, hipotesis kedua dibentuk seperti berikut :

H2 : Keadilan prosedur yang rendah mempunyai pengaruh yang positif terhadap hubungan di antara penyertaan belanjawan dan regangan belanjawan.

Definisi Pembolehubah

Terdapat tiga pembolehubah yang dikaji dalam kajian ini iaitu, penyertaan belanjawan (pembolehubah bebas), regangan belanjawan (pembolehubah bersandar) dan keadilan prosedur (pembolehubah pemoderat).

a) Penyertaan Belanjawan
   Penyertaan belanjawan adalah sejauh mana penyertaan pengurus dalam penyusunan belanjawan pada pusat tanggungjawab yang diuruskan oleh mereka (Milani 1975).

b) Regangan Belanjawan
   Regangan belanjawan adalah tindakan sengaja mengurangnyata hasil dan kemampuan produktif dan ataupun menambahnyatakan belanja atau sumber dalam proses penetapan belanjawan. Tindakan ini menyebabkan sasaran belanjawan mudah untuk dicapai (Dunk & Nouri 1998).

c) Keadilan Prosedur
   Keadilan prosedur adalah persepsi pengurus terhadap keadilan pihak atasan berkaitan dengan proses penilaian prestasi, keadilan dari segi peluang yang diberikan kepada pengurus untuk memberi maklumbalas terhadap penilaian prestasi yang telah dibuat serta persepsi keadilan terhadap penentuan ganjaran (McFarlin & Sweeney 1992).

Metodologi Kajian

Bagi kajian ini, unit pemerhatian kajian ialah pengurus-pengurus bahagian di hotel-hotel kerana mereka terlibat di dalam proses penyediaan belanjawan serta bertanggungjawab terhadap belanjawan di bahagian masing-masing (Subramaniam et al. 2002). Maklumat didapati melalui pengedaran soal selidik secara pos. Data dikutip melalui kaji selidik kerana kajian ini melibatkan maklumat yang berkaitan dengan pendapat individu dan juga aspek gelagat manusia.

Kerangka persampelan diambil daripada senarai direktori hotel-hotel yang berdaftar dengan Persatuan Hotel Malaysia. Pemilihan hotel-hotel adalah berdasarkan kategori hotel yang dikelaskan sebagai tiga bintang ke atas di dalam direktori tersebut. Ini adalah kerana hotel yang dikategorikan tiga bintang ke atas merupakan hotel yang besar di mana Sharma (2002) menyatakan faktor saiz mempengaruhi ciri-ciri sistem belanjawan yang dibentuk di hotel. Hotel yang bersaiz besar menggunakan belanjawan sebagai panduan operasi dan mempunyai sistem kawalan dalaman yang formal.

Didapati terdapat 522 buah hotel yang berdaftar dengan MAH, namun begitu cuma 353 sahaja yang memenuhi kriteria 3 bintang ke atas. Selain itu, hotel yang dipilih perlulah mempunyai pekerja melebihi 100 orang kerana pada kebiasaannya bagi hotel yang mempunyai pekerja kurang 100 orang, para pengurus mungkin tidak mempunyai kejelasan tanggungjawab pada bahagiannya (Dunk 1993). Berdasarkan tinjauan awal iaitu hasil temu duga ringkas ke atas beberapa pengurus bahagian di hotel-hotel, didapati kebanyakan hotel melibatkan 5 orang pengurus semasa penyediaan belanjawan. Oleh itu, jumlah populasi pengurus bagi hotel yang termasuk di dalam rangka persampelan adalah 1,765 orang (andaian 5 pengurus bagi setiap hotel daripada 353 buah hotel yang memenuhi kriteria kerangka persampelan). Berdasarkan jadual penentuan saiz sampel dari populasi (Sekaran 2006), sampel yang dicadangkan bagi populasi kajian ini adalah seramai 317 orang pengurus. Dengan ini, sejumlah 350 soal selidik telah dikirim kepada pengurus-pengurus hotel yang terlibat di dalam penyediaan belanjawan di hotel-hotel yang dijadikan sampel.

Kaedah pemilihan hotel adalah secara rawak dengan menyenaraikan 353 buah hotel yang terpilih (tiga bintang ke atas) ke dalam Microsoft Excel. Setiap hotel kelima dalam senarai dipilih sebagai sampel. Dengan ini 70 buah hotel telah dipilih di mana setiap sebuah hotel akan menerima 5 borang soal selidik. Secara keseluruhannya, menjadikan jumlah soal selidik yang dihantar kepada responden ialah 350 (70 hotel x andaian 5 orang pengurus yang terlibat).

Pengukuran Pembolehubah

Pembolehubah dalam kajian ini diukur dengan menggunakan instrumen yang sedia ada dan telah digunakan secara meluas oleh para penyelidik-penyelidik lepas.

a) Penyertaan Belanjawan

Penyertaan belanjawan diukur menggunakan instrumen 6 item, skala Likert 5 yang dicadangkan oleh Milani (1975). Skala 1 mewakili tahap penyertaan yang rendah manakala skala 5 mewakili tahap penyertaan yang tinggi.

b) Regangan Belanjawan

Kajian ini menggunakan instrumen yang dibina oleh Stede (2000). Terdapat 5 soalan di bahagian ini di mana empat soalan menggunakan pengukuran skala Likert 5. Soalan yang diukur menggunakan skala Likert 5 adalah berkaitan soalan yang meminta persetujuan responden dengan kenyataan yang diberikan iaitu kepentingan penekanan mencapai sasaran belanjawan. Nilai 1 merujuk kepada “sangat tidak bersetuju” manakala nilai 5 merujuk kepada “amat bersetuju”.

c) Keadilan Prosedur

Bagi menguji keadilan prosedur, responden diminta menyatakan persepsi mereka terhadap tahap keadilan prosedur yang digunakan untuk menilai prestasi dan penentuan ganjaran. Kajian ini menggunakan instrumen yang dicadangkan oleh McFarlin dan Sweeney (1992). Instrumen ini diukur menggunakan skala Likert 5 dan mempunyai 4 item soalan. Skala 1 mewakili “amat tidak adil” iaitu persepsi ketidakadilan di dalam penilaian prosedur, manakala 5 mewakili “amat adil” iaitu persepsi keadilan di dalam penilaian prosedur.

Teknik Analisis Statistik

Program SPSS 18 digunakan untuk menganalisis data. Terdapat tiga peringkat analisis yang telah dijalankan. Peringkat pertama adalah analisis deskriptif bagi mendapatkan maklumat tentang latar belakang responden kajian. Peringkat kedua adalah ujian kebolehpercayaan data bagi menguji kekonsistenan jawapan bagi setiap jawapan dalam soal selidik. Ujian ini dilakukan dengan melihat nilai cronbach alpha. Peringkat ketiga adalah pengujian hipotesis yang terdiri daripada ujian regresi ringkas bagi menguji hipotesis 1 (H1) dan ujian regresi berhierarki bagi menguji hipotesis 2 (H2).

Dapatan dan Perbincangan

Sejumlah 350 soal selidik telah dihantar secara rawak kepada 70 buah hotel yang dikategorikan sebagai tiga bintang ke atas yang tersenarai di dalam laman sesawang Persatuan Hotel Malaysia (MAH). Daripada jumlah tersebut, sebanyak 171 soal selidik (49%) telah dipulangkan kembali kepada penyelidik. Walaupun begitu, didapati hanya 163 buah hotel sahaja (47%) yang mempunyai pekerja melebihi 100 orang dan sesuai dijadikan responden kajian.

Profil Responden

Pengkaji menganalisis profil responden bagi mengetahui latar belakang responden. Lampiran 1 menunjukkan ringkasan profil responden kajian. Kesimpulan yang dapat dibuat adalah responden terdiri daripada 50.3% pengurus pertengahan, 34.4% pengurus bawahan, 8.6% penyelia dan 6.7% mewakili pengurus atasan. Ini menunjukkan pengurus bawahan dan pertengahan secara majoritinya lebih banyak terlibat di dalam aktiviti penetapan belanjawan. 56.4% responden kajian ini adalah lelaki manakala 43.6% adalah pekerja wanita. Keadaan ini menunjukkan pengurus yang terlibat di dalam penyediaan belanjawan tidak didominasi oleh mana-mana jantina kerana peratusannya tidak jauh berbeza.

Analisis Kebolehpercayaan Data

Kebolehpercayaan data dinilai dari segi konsistensinya. Soal selidik boleh dipercayai jika jawapan responden terhadap soal selidik adalah konsisten dan boleh dilihat dengan merujuk kepada nilai cronbach alpha. Adalah didapati nilai cronbach alpha penyertaan belanjawan sebanyak 0.80, keadilan prosedur sebanyak 0.91 dan regangan belanjawan sebanyak 0.85.Dengan ini menunjukkan bahawa semua pembolehubah boleh dipercayai dan konsisten kerana nilai cronbach alpha melebihi 0.6. Sekiranya nilai alpha yang ditunjukkan melebihi 0.6, maka skala yang digunakan untuk mengukur pembolehubah tersebut mempunyai tahap kebolehpercayaan yang tinggi (Hair et al. 2010). Jadual 1 menunjukkan nilai cronbach alpha bagi semua pemboleh ubah.

Jadual 1 Ujian Kebolehpercayaan Data

Pembolehubah	**Bilangan Item**	**Cronbach alpha**
Penyertaan belanjawan	6	0.80
Keadilan prosedur	4	0.91
Regangan belanjawan	5	0.85

Analisis Hubungan Penyertaan Belanjawan dan Regangan Belanjawan

Analisis ini dilakukan dengan menggunakan analisis regresi ringkas di mana pemboleh ubah bebas adalah penyertaan belanjawan dan pemboleh ubah bersandar adalah regangan belanjawan. Hipotesis pertama kajian menyatakan penyertaan belanjawan berpengaruh secara positif terhadap regangan belanjawan. Jadual 2 menunjukkan nilai R^2 adalah 0.131 yang membawa kepada pemahaman penyertaan belanjawan dapat menjelaskan regangan belanjawan sebanyak 13.1%. Selain itu, didapati nilai kebarangkalian (*p*) adalah signifikan ke atas regangan belanjawan pada tahap $p< 0.01$. Nilai β (0.363) yang merujuk kepada kesan penyertaan belanjawan ke atas regangan belanjawan adalah positif dan selari dengan arah jangkaan hipotesis. Oleh itu, hipotesis 1 diterima. Hasil lengkap kajian ditunjukkan di dalam Lampiran 2.

Jadual 2 Hasil Ujian Hipotesis 1

Pemboleh ubah	**koefisien (β)**	**Nilai-t**	**Nilai *p*(sig.)**
Penyertaan belanjawan	0.363	4.937	0.000

R^2 = 0.131, R^2 terlaras = 0.126, n = 163, $F_{1,163}$= 24.371 (p=0.000)

Analisis Pengaruh Keadilan Prosedur Terhadap Hubungan Penyertaan Belanjawan dan Regangan Belanjawan

Hipotesis kedua menjangkakan bahawa keadilan prosedur yang rendah mempunyai pengaruh yang positif terhadap hubungan di antara penyertaan belanjawan dan regangan belanjawan. Jadual 3 menunjukkan ringkasan hasil pengujian hipotesis. Penilaian terhadap model mendapati R^2 meningkat dalam setiap langkah. Didapati juga model secara keseluruhan adalah signifikan [$F_{3,163}$ = 10.708, p < 0.0005]. Untuk keputusan yang lebih meyakinkan bahawa keadilan prosedur yang rendah merupakan faktor pemoderat bagi hubungan di antara penyertaan belanjawan dan regangan belanjawan, penilaian terhadap nilai interaksi turut dilihat. Didapati nilai koefisien interaksi antara penyertaan belanjawan dan keadilan prosedur yang rendah turut signifikan pada tahap 0.05 (β=0.049, p=0.035). Pengaruh ini adalah positif seperti dijangka, oleh itu hipotesis 2 diterima. Hasil lengkap pengujian hipotesis 2 ditunjukkan di Lampiran 3.

Jadual 3 Hasil Ujian Hipotesis 2

	Model 1	**Model 2** **Koefisien (β)**	**Model 3**
PU Bebas : Penyertaan Belanjawan (PB)	.363**	.345**	.244**
PU Pemoderat : Keadilan Prosedur (KP)		.115	.365**
PU Interaksi : PB *x* KP			.298*
R^2	.131	.144	.168
Perubahan R^2	.131	.013	.024
Perubahan F	24.371	13.493	10.708

Signifikan perubahan F	0.000	0.000	0.000

** : signifikan pada 0.01
* : signifikan pada 0.05

Kesimpulan Kajian

a) Hubungan Langsung Penyertaan Belanjawan dan Regangan Belanjawan

Analisis regresi ringkas yang dilakukan terhadap pengujian hipotesis 1 mendapati bahawa penyertaan belanjawan mempengaruhi secara positif regangan belanjawan. Ini menunjukkan bahawa penglibatan pengurus semasa penyediaan belanjawan memberikan kesan yang signifikan terhadap regangan belanjawan. Penemuan ini menyokong kajian yang dilakukan oleh Shayuti dan Maliah (2007) di mana mereka mendapati faktor penyertaan belanjawan merupakan salah satu faktor penentu regangan belanjawan di Malaysia.

Pengujian hipotesis 1 membuktikan penyertaan belanjawan mempengaruhi tindakan melakukan regangan belanjawan sebanyak 13.1 peratus. Walaupun ia hanya mampu menjelaskan hanya 13.1 peratus dan pengaruhnya adalah lemah tetapi ia masih bersesuaian dengan teori agensi iaitu pengurus sebagai agen akan bertindak mementingkan diri sendiri. Tindakan melakukan regangan membolehkan mereka mendapat ganjaran pengurusan dengan mudah.

b) Pengaruh Keadilan Prosedur Yang Rendah Terhadap Hubungan Penyertaan Belanjawan dan Regangan Belanjawan

Jangkaan hubungan ini disokong apabila hasil kajian mendapati terdapat peningkatan dalam hubungan penyertaan belanjawan dan regangan belanjawan apabila disertai keadilan prosedur yang rendah. Ia dikukuhkan lagi dengan nilai interaksi positif yang signifikan di antara penyertaan belanjawan dan keadilan prosedur yang rendah dengan regangan belanjawan. Penemuan kajian turut menyokong keadilan prosedur adalah pemoderat ke atas hubungan antara penyertaan belanjawan dan regangan belanjawan. Ia dapat memperjelaskan hujah kepada hubungan lemah yang wujud di antara penyertaan belanjawan dan regangan belanjawan (13%) tetapi apabila disertai dengan keadilan prosedur yang rendah, faktor regangan belanjawan turut meningkat (14.4%). Oleh itu, peranan keadilan prosedur sebagai pemoderat di dalam kajian ini disokong. Ini bermaksud keadilan prosedur yang rendah menggalakkan lagi berlakunya regangan belanjawan. Kajian ini selari dengan pendapat Dunk (1993) bahawa faktor penyertaan belanjawan sahaja tidak menjadi penyebab berlakunya regangan belanjawan sebaliknya terdapat faktor lain yang mendorong tindakan tersebut dilakukan.

Selain itu, hasil kajian ini mendapati persepsi keadilan prosedur yang rendah mempunyai pengaruh terhadap tindakan melakukan regangan belanjawan pengurus-pengurus hotel. Ini dibuktikan dengan nilai positif yang signifikan (0.168) bagi hubungan korelasi di antara keadilan prosedur yang rendah dan regangan belanjawan. Dapatan kajian ini selari dengan dapatan kajian Maiga dan Jacobs (2007) bahawa faktor keadilan mempengaruhi tindakan seseorang pengurus perhotelan melakukan regangan belanjawan. Kajian mereka mendapati keadilan akan meningkatkan komitmen pengurus terhadap belanjawan yang disediakan, oleh itu secara tidak langsung akan mengurangkan regangan belanjawan. Dapat disimpulkan bahawa persepsi keadilan prosedur dalam sesebuah organisasi mempunyai pengaruh terhadap gelagat pengurus. Pada tahap keadilan yang tinggi, pengurus cenderung melakukan gelagat yang positif manakala pada tahap keadilan yang rendah, pengurus cenderung melakukan gelagat yang negatif.

Implikasi Kajian

Penemuan kajian ini memberikan sumbangan penting terhadap teori dan praktikal. Dari aspek teori, ia dilihat daripada pengukuhan teori yang digunakan dan penemuan bukti empirikal tambahan. Berdasarkan teori agensi yang digunakan, penemuan kajian menyokong penemuan lepas yang berjaya membuktikan penyertaan pengurus semasa penyediaan belanjawan akan meningkatkan regangan belanjawan disebabkan pengurus mempunyai matlamat meningkatkan kekayaan diri sendiri. Pengurus sebagai agen akan berusaha meningkatkan kekayaan sendiri dengan pelbagai cara termasuklah melakukan regangan belanjawan. Penglibatan semasa proses penyediakan belanjawan membolehkan pengurus hotel memasukkan elemen regangan dengan memberikan maklumat yang kurang tepat. Usaha ini dilakukan kerana penilaian prestasi pengurus-pengurus hotel adalah berdasarkan pencapaian sasaran belanjawan. Oleh itu, pengurus hotel sebagai agen akan memanipulasikan maklumat yang ada padanya semasa penyediaan belanjawan tersebut kerana dengan melakukan regangan belanjawan ianya menunjukkan seolah-olah mempunyai prestasi yang baik yang akhirnya membolehkan mereka mendapat ganjaran. Penemuan ini adalah selari dengan Young (1985) dan Shayuti dan Maliah (2007) seterusnya berjaya menyokong teori tersebut.

Selain itu, hasil kajian juga turut mengketengahkan kepentingan persekitaran kerja mampu mempengaruhi tingkahlaku pengurus. Hasil kajian mendapati keadilan prosedur yang rendah akan meningkatkan lagi regangan belanjawan yang akan dilakukan. Ini turut bersesuaian dengan teori agensi bahawa pengurus hotel sebagai agen akan bertindak mementingkan diri sendiri berbanding mengutamakan kepentingan organisasi. Penilaian prosedur yang rendah merujuk kepada persepsi prosedur penilaian prestasi yang kurang adil di kalangan pengurus-pengurus hotel berkenaan. Disebabkan penilaian prestasi merupakan sesuatu yang penting dan menjadi titik tolak motivasi dalaman untuk melaksanakan kerja, maka pengurus hotel lebih cenderung bertindak memaksimakan kekayaan diri sendiri. Dengan ini, diharapkan pihak pengurusan di hotel-hotel dapat meningkatkan lagi persepsi keadilan prosedur terhadap amalan pengurusan mereka iaitu dengan cara memberikan peluang kepada pekerja untuk membincangkan penilaian prestasi, penentuan ganjaran dan kenaikan pengkat. Selain itu, proses penilaian prestasi perlu diperbaiki bagi mencerminkan keadilan prosedur itu sendiri. Oleh itu, organisasi perlu memahami cara yang sebaiknya bagaimana untuk meningkatkan persepsi keadilan prosedur supaya tindakan melakukan regangan dapat dikurangkan.

Batasan Kajian

Terdapat dua batasan yang telah dikenal pasti iaitu yang pertama berkaitan sampel hotel yang dipilih. Oleh sebab kajian ini hanya melibatkan sampel kajian yang terdiri daripada pengurus-pengurus sektor perhotelan, maka hasil kajian ini tidak dapat digeneralisasikan kepada industri yang lain seperti perkilangan, kewangan dan lain-lain. Ini adalah kerana berteraskan perkhidmatan.

Batasan yang kedua adalah kajian ini dijalankan terhadap pengurus-pengurus hotel di Malaysia. Hasil kajian Nik Nazli et al. (2003) menunjukkan tahap regangan belanjawan adalah tinggi di Malaysia berbanding New Zealand dan United Kingdom. Jarak kuasa yang tinggi yang merupakan salah satu dimensi pengukuran budaya negara dikenal pasti sebagai faktor yang menjelaskan tahap regangan belanjawan yang tinggi di Malaysia. Oleh itu, hasil kajian ini tidak boleh digeneralisasikan kepada negara yang berbeza budaya.

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KEBERKESANAN ASAS LUKISAN KE ATAS PRESTASI MELUKIS DALAM KALANGAN PELAJAR PROGRAM DIPLOMA SENI BINA DI POLITEKNIK PORT DICKSON

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ABSTRAK: Kajian ini bertujuan mengenal pasti keberkesanan asas lukisan ke atas prestasi melukis dalam kalangan pelajar-pelajar Program Diploma Seni Bina Disember 2013 di Politeknik Port Dickson Negeri Sembilan. Data dikumpulkan melalui soal selidik Profil (Demografi) pelajar dan penilaian hasil maujud yang dijalankan melalui kaedah eksperimen peringkat ujian pra dan ujian pasca ke atas 60 orang pelajar. Dua instrumen diberikan :

a) Senarai semak profil pelajar
b) Hasil maujud pelajar

Kajian menunjukkan bahawa prestasi pelajar (Lampiran : Kursus Asas Lukisan) yang telah dibentuk mempunyai pendekatan B.F. Skinner iaitu pengajaran terancang dan S. N. Postlewait (1969) iaitu konsep unit-unit kecil dalam satu modul. Bukti fizikal (hasil maujud) dikumpul dan dianalisa dengan menggunakan ujian T untuk membuat perbandingan hasil maujud semasa ujian pasca. Maklumat kemudian diproses dengan menggunakan pakej statistik untuk sains sosial (SPSS). Penemuan kajian telah menunjukkan peningkatan min markah n peringkat pra ujian dari 53.766 ke 60.966 semasa ujian pasca dijalankan dengan nilai sebanyak 5.701 adalah aras signifikan pada $p < .05$ jelas menunjukkan peningkatan prestasi telah berlaku.

Kata Kunci : Asas Lukisan, keberkesanan, dan hasil maujud.

PENGENALAN

Bidang pendidikan senibina bukanlah setakat memberi pengajaran dan pembelajaran untuk menghasilkan karya seni, malah mencakupi segala aspek kehidupan seharian manusia. Sejarah telah membuktikan bahawa secara disedari atau tidak manusia pada amnya telah terdidik dalam seni. Sehingga ke hari ini, seni bukan setakat menjadi mata pelajaran di peringkat sekolah, malah di institusi pengajian tinggi. Secara teori dan amali disiplin seni telah digunakan.Chapman dalam Shukor & Solihin (2000) mendapati bahawa tiga perkara perlu ditekankan, iaitu ekspresi dan tindak balas kendiri di dalam seni, karya warisan yang artistik dan peranan seni di dalam masyarakat atau persekitaran. Fakta lain yang penting mengenai disiplin dalam seni ialah memerlukan kemahiran yang cukup dan perlu difahami serta dipelajari.Pengaruh seni lukis barat dan nilai budayanya bermula apabila pengajaran pendidikan seni secara formal diajar di sekolah-sekolah di Malaysia yang diperkenalkan oleh penjajah Inggeris. Penang Free School di Pulau Pinang yang dibuka pada tahun 1816 telah menjadikan seni sebagai satu mata pelajaran yang diajar di situ. Dalam kurikulumnya, lukisan telah diperkenalkan kepada murid melalui pengajaran formal di bilik-bilik darjah.

Shukor & Solihin (2000) menegaskan bahawa globalisasi di dalam seni sememang tidak asing lagi sejak kewujudan sejarah seni klasik dan moden. Akan tetapi dengan kemunculan era baru dalam seni seperti seni moden dan pasca moden, menyebabkan kurikulum seni sentiasa bergolak dan tercabar di dalam arus pendidikan. Namun begitu nilai, budaya, rupa dan jiwa sesuatu hasil seni dan senimannya perlu terpelihara. Dengan itu keperluan kurikulum yang mantap dengan struktur disiplin yang kukuh amat penting demi mencapai hasil serta membuahkan kejayaan yang cemerlang di abad ini. Sebagai sebuah institusi (Politeknik) yang melatih bakal arkitek, adalah menjadi tanggungjawab pihak institusi mewujudkan pengajaran dan pembelajaran yang berkesan supaya ianya dapat membentuk kredibiliti diri pelajar sebagai arkitek yang berilmu dan berkemahiran.

LATAR BELAKANG MASALAH

Berdasarkan keputusan penilaian yang telah dibuat ke atas pelajar hampir 70 % pelajar Diploma Seni Bina Disember 2013, menunjukkan lemah dalam 3 aspek iaitu pengetahuan, kemahiran dan aplikasi lukisan dan juga ketidak lancaran dalam berkomunikasi dengan menggunakan laras senibina. Ini berkemungkinan di sebabkan tiada kelas 'Lukisan Asas' yang khas dijalankan secara formal semasa mereka di peringkat sekolah menengah. Persoalannya, apakah dengan hanya satu sesi temuduga dan menghasilkan dua lukisan dalam tempoh masa lima puluh minit sudah cukup untuk membuktikan bahawa pelajar-pelajar ini berkeupayaan dan berkebolehan melukis dengan baik? Melalui kajian ini juga akan menguatkan lagi pendapat berdasarkan kajian literatur yang mengatakan bahawa Lukisan Asas memerlukan kelas formal supaya pelajar dapat mempelajari lukisan dengan lebih berkesan. Kajian literatur akan dapat memberikan sedikit gambaran akan kepentingan dan keperluan lukisan sebagai satu bidang khusus, mahupun sebagai asas dalam proses menghasilkan karya seni. Justeru, lukisan bukanlah satu bidang sampingan seperti mana tanggapan dan amalan di sesetengah institusi pengajian tinggi.

TUJUAN KAJIAN

Tujuan kajian ini adalah untuk menentukan sama ada terdapat peningkatan prestasi melukis di kalangan responden kajian selepas asas lukisan diberi. Kajian ini juga dijalankan untuk memperkenalkan satu kaedah asas lukisan (Howard J. Smagula, 1993), dalam usaha untuk meningkatkan prestasi melukis di kalangan pelajar-pelajar Program Diploma Seni Bina di Politeknik Port Dickson. Melalui kursus ini beberapa unit konsep lukisan dan teknik asas melukis diperkenalkan. Dari penyelidikan ini diharap dapat memberi panduan kepada pihak lain untuk mencuba kaedah pengajaran dan pembelajaran yang lebih berkesan dalam memperbaiki prestasi asas melukis pelajar-pelajar.

Kajian ini penting bagi mengenal pasti tahap keupayaan dan kebolehan melukis di kalangan pelajar-pelajar serta memberi idea kepada pihak penganjur untuk membentuk satu program pengajaran dan pembelajaran yang lebih berkesan. Dengan kajian ini juga diharap akan membantu pelajar-pelajar Program Diploma Seni Bina (Politeknik Port Dickson) memperbaiki prestasi dan kemahiran asas lukisan yang mereka miliki. Anggapan optimis ini dibuat setelah melihat kelemahan (70%) yang terdapat pada kumpulan pelajar dari ambilan sebelum ini. Diharap kajian ini akan dapat membuka jalan bagi pihak lain untuk mendalami atau memperbaiki lagi Asas Lukisan dalam pengajaran dan pembelajaran.

OBJEKTIF KAJIAN

Kajian ini cuba menentukan sejauh mana keberkesanan asas lukisan dapat meningkatkan prestasi melukis pelajar Program Diploma Seni Bina (Politeknik Port Dickson). Secara khususnya kajian ini diharap akan dapat - Membuat perbandingan prestasi melukis sebelum dan selepas rawatan asas lukisan ke atas kumpulan pelajar Program Seni Bina.

PERSOALAN KAJIAN

Adakah terdapat peningkatan prestasi melukis yang signifikan selepas responden kajian diberi Asas Lukisan.

KAJIAN LITERATUR

Meninjau kembali sejarah seni secara ringkas, kita dapati bahawa manusia, seperti mana yang dinyatakan oleh sejarahwan seni, Gardner (1959) dalam bukunya *'Art Through The Ages'* menegaskan bahawa aktiviti melukis telah dipraktikkan sejak di zaman pra sejarah. Lukisan–lukisan di Gua Lascaux di Peranchis, Altamira di Sepanyol mahu pun di dinding–dinding piramid dalam tamadun kesenian Mesir adalah merupakan proses awal komunikasi secara visual. Kesan – kesan imajan ini adalah proses asas melukis untuk tujuan komunikasi. Menurut Smagula 1993, semenjak ujudnya masyarakat petani di zaman Mesir Purba sekitar 8,000 tahun sebelum masehi lagi, lukisan-lukisan menggunakan simbol-simbol bercirikan hieroglyfik telah digunakan sebagai alat komunikasi dan ia merupakan asas kepada tulisan. Pelukis-pelukis agung seperti Leonardo da Vinci, Michealangelo dan Albert Durer adalah antara yang mempraktikkan lukisan sebagai pendekatan asas seni dalam menghasilkan karya-karya mereka. Ini menunjukkan bahawa pengetahuan, kemahiran dan keupayaan melukis adalah asas kepada kecemerlangan mereka sebagai artis terulung (Raines, 1997).

Dohanos (1974), seorang ahli jawatan kuasa *'The Stamp Advisory Comitte'* mengatakan bahawa aktiviti melukis bersifat *' learning how to see and how to draw, as well as how the pencil can be use as a versatile graphite tools. For drawings is a tool that enables the artist to translate his ideas to form'.* Tanggapan masyarakat sering mengatakan bahawa kemahiran melukis itu adalah satu anugerah kepada insan yang istimewa. Namun, tanggapan itu tidaklah tepat kerana menurut Harrison (1998), melukis adalah seperti kita menulis, di mana kemahiran itu boleh dilatih dan dipelajari. Jika setiap orang itu bermotivasi, semua orang boleh belajar menguasai melukis dengan tepat.

Aggett (1992), menegaskan bahawa keupayaan menguasai pelbagai teknik adalah keperluan asas untuk membentuk kemahiran imaginatif dan kreativiti seseorang pelukis. Bagi beliau tidak ada jalan mudah selain daripada membuat latihan demi latihan untuk mempertingkatkan kemahiran melukis. Kenyataan ini juga disokong oleh Bell (1998) yang menegaskan bahawa dengan menggunakan pelbagai teknik dan bahan, pelukis akan dapat membentuk kemahiran melukis.

Menurut pengalaman Howard J. Smagula (1993) sebagai seorang pensyarah universiti selama lebih dua puluh tahun menegaskan :

> *'... have shown me that nothing is important to the student as actual drawing practice. In order to learn to draw, student must commit their vision to paper over and over again. Learning to draw, learning the basic information's about drawing, from basic exercise involving the study of the visual elements to more advance personal and creative applications'.*

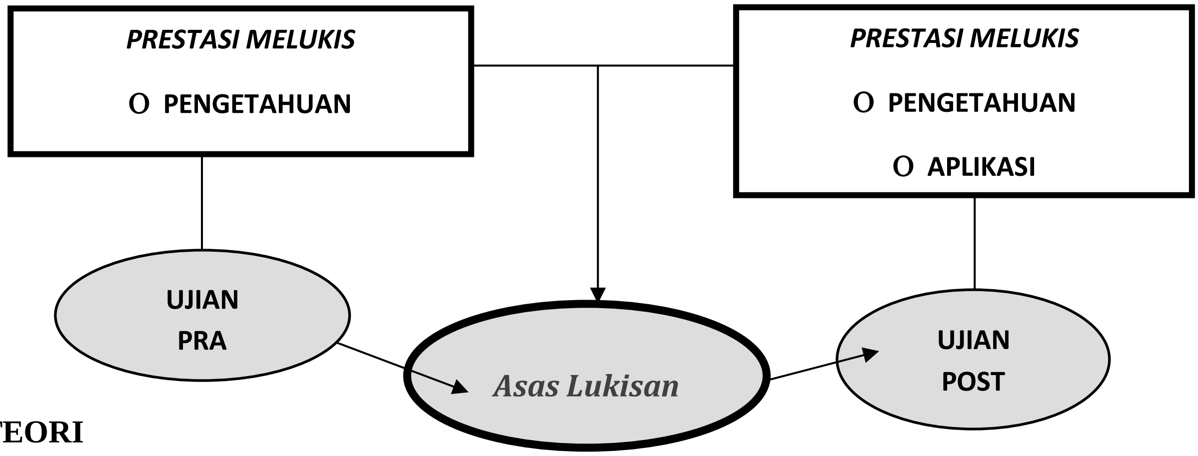
Berdasarkan sorotan literatur di atas, jelaslah bahawa lukisan mempunyai peranan dan fungsi tertentu dalam dunia seni. Pertama, lukisan sebagai bidang pengkhususan yang mempunyai sejarah perkembangannya yang tersendiri. Kedua, sebagai bidang pengkhususan, lukisan mencabar keupayaan seseorang pelajar mahupun pensyarah senibina melihat dan bertindak balas terhadap alam dan kehidupan sekelilingnya, membentuk dan melahirkan ide, meluahkan perasaan dan keindividuannya, serta kebolehan mengeksploitasi dan mengaplikasikan bahan dan teknik. Ketiga, kebanyakkan pendapat, dan pandangan ilmiah manunjukkan bahawa kebolehan melukis bukanlah disebabkan bakat semata tetapi ianya boleh dikuasai dengan latihan teori dan praktikal. Akhir sekali, untuk meningkatkan kefahaman dan kepentingan lukisan yang begitu dinamik, sama ada dalam seni atau pendidikan, ianya hendaklah dimartabatkan dalam kurikulum. Hanya dengan tindakan yang komprehensif sahaja bidang ini akan dilihat penting. Dengan kefahaman demikian maka diharapkan prestasi pelajar-pelajar DSB ini akan menepati objektif Program Seni Bina sebagai :

> *"...to reach the educational objective through art, however a person must make and appreciate art. Thus the major goal of art education is the production of artists and connoisseurs".*
>
> (Lansing, 1971 dalam Ibrahim 2000)

REKA BENTUK KAJIAN

Kajian ini pada asasnya adalah berdasarkan kepada modul rawatan 'Asas Lukisan'. Ianya bertujuan untuk mencuba satu kaedah rawatan 'Asas Lukisan' untuk meningkatkan prestasi melukis dalam kalangan pelajar Program Seni Bina di Politeknik Port Dickson, penyelidikan ini diharap akan dapat memberi panduan kepada pihak lain untuk mencuba kaedah pengajaran dan pembelajaran yang lebih berkesan dalam memperbaiki prestasi. Bagi tujuan mendapatkan data beberapa prosedur digunakan dalam kajian ini. Penyelidik menggunakan kaedah eksperimen. Sampel kajian ialah 60 orang pelajar Disember 2013 yang mempunyai latar belakang yang sama. Ujian-pra dan Ujian Pasca juga dijalankan keatas kumpulan yang sama dengan arahan ujian yang sama. Selepas ujian-pra dijalankan, satu rawatan asas lukisan modul yang terdiri daripada beberapa unit kecil yang telah disusun mengikut aras berdasarkan pendekatan Smagula (1993) telah diberi (rujuk lampiran modul).

KERANGKA TEORI



TEORI

Di dalam kajian ini penyelidik mendapati bahawa teori penyebab (theory of causation : Collingwood,1940 ; Cook & Shadish, 1994) sesuai digunakan dalam kajian yang akan dijalankan. Kajian berbentuk eksperimentasi ini bertujuan untuk melihat keberkesanan rawatan asas lukisan yang digunakan ke atas sekumpulan responden. keberkesanannya ke atas eksperimentasi ini dijalankan dalam satu situasi yang telah ditetapkan iaitu di Politeknik Port Dickson. Perlaksanaan kajian ini adalah melalui empat peringkat iaitu :

I. Mereka bentuk (*design*) kajian
II. Manjalankan kajian
III. Menganalisa bukti-bukti kajian dan
IV. Membina rumusan, cadangan dan implikasinya.

Setiap langkah dalam metodologi adalah berdasarkan perbincangan yang berpandukan kajian literatur, dan diikuti dengan perbincangan yang diaplikasikan berdasarkan prosedur dalam cadangan kajian ini iaitu:

Membentuk protokol kajian:

a. mengenal pasti aras keperluan kemahiran
b. membentuk dan mengulas semula protokol kajian

Menjalankan kajian:

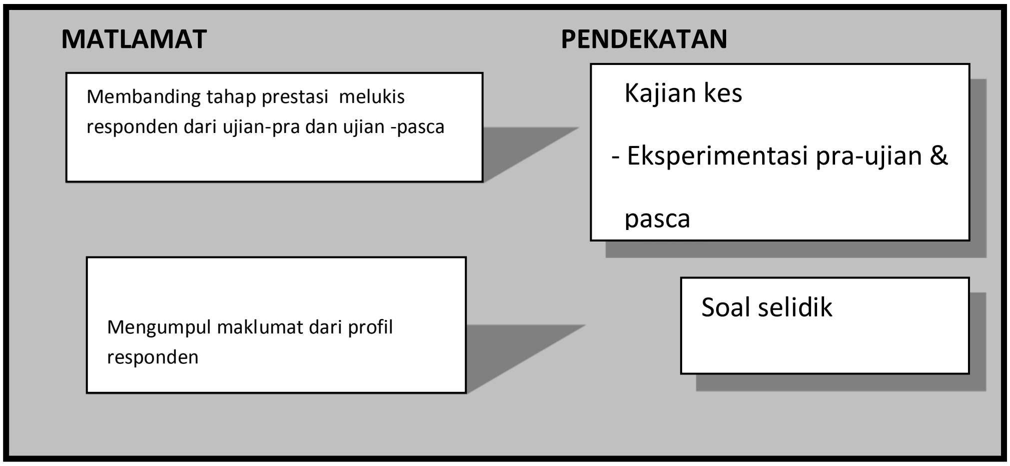
a. menyediakan koleksi data-data berkaitan
b. mengedarkan soal-selidik kepada responden
c. menjalankan ujian-pra
d. memberi rawatan asas lukisan
e. menjalankan ujian-pasca
f. menjalankan penilaian

Menganalisa bukti-bukti kajian kes

a. Likert scale 4 point untuk soal-selidik
b. strategi analisis Ujian T untuk hasil maujud

Membentuk satu rumusan, cadangan dan implikasi berdasarkan bukti yang terkumpul.

KONSEPTUAL MODEL



Rajah 1

INSTRUMEN KAJIAN

Instrumen kajian ini terdiri daripada 2 bahagian :

<u>Bahagian A : Profil responden</u>

Soal-selidik profil responden bertujuan untuk mendapatkan maklum-balas latar belakang responden kajian seperti jantina, umur, kelulusan akademik, kelulusan iktisas, pengalaman. Data juga boleh diperolehi dari sijil penyertaan kursus, rekod laporan prestasi, atau apa saja maklumat yang boleh dijadikan bahan bukti. Data ini bertujuan untuk menyokong bukti-bukti yang dikumpulkan untuk tujuan penyelidikan (Secondary sources).

<u>Bahagian B : Menentukan prestasi melukis responden</u>

Ujian-pra dijalankan berdasarkan pengalaman sedia ada pelajar dan ujian ini dijalankan pada minggu kedua semester satu iaitu selepas minggu orientasi dijalankan. Membentuk rumusan.cadangan dan implikasi. Satu rawatan diberi dengan menggunakan satu bentuk modul dan kemudian satu ujian- pasca diberi kepada responden yang sama. Hasil maujud itu kemudiannya dinilai dengan menggunakan kaedah pemarkahan yang telah ditetapkan.

Definisi Tugasan -

Tugasan ujian-pra :
Menghasilkan lukisan (aktiviti studio melihat objek sebenar). Di sini pelajar diberi peluang untuk melukis berpandukan objek sebenar. Dijalankan untuk mengumpul maklumat dari aspek aplikasi, pengetahuan, kemahiran pelajar dalam menghasilkan lukisan. Ujian-pra ini dijalankan tanpa sebarang input. Lukisan dibuat menggunakan pensel. Pensel supaya pelajar boleh mencuba mengolah kesan garisan yang pelbagai dan lebih berkesan untuk menghasilkan tekstura. Pelajar melukis berdasarkan pengalaman dan kemahiran sedia ada mereka. Semasa

pelajar melukis penyelidik hanya memantaukan tanpa memberi sebarang bimbingan. Di akhir ujian-pra, kesemua lukisan itu dikumpulkan untuk tujuan penilaian.

Tugasan ujian-pasca :

Ujian-pasca dijalankan selepas asas lukisan diberi kepada semua responden kajian. Arahan tugasan yang semasa ujian-pra dan ujian pasca telah diberi kepada responden kajian. Di akhir tugasan, hasil lukisan responden telah dikumpulkan untuk tujuan penilaian.
Kriteria Penilaian berpandukan nilai tara dan skima yang telah dimurni berdasarkan pendekatan Smagula (1993) dan Fieldmen (1984). (Sila rujuk kepada lampiran Penilaian hasil maujud). Keputusan dari kajian ini akan dibuat berdasarkan dapatan analisis dan data yang terkumpul. Keseluruhan analisis yang akan dibuat adalah merujuk kepada matlamat dan objektif kajian.

Kaedah Pemarkahan – *(Penilaian Hasil Maujud) :*

Hasil lukisan dari Ujian Pra dan Ujian Pasca dikumpulkan dan dinilai serentak tanpa mengasingkannya. Lukisan itu di kodkan menggunakan simbol oleh seorang pemantau luar (bukan AJK Penyelidikan) dan kemudian dinilai bersandarkan skema yang telah dimurnikan (Rajah 1). Nilai tara yang dibuat merupakan adaptasi dari skema penilaian Program Seni Bina yang telah dibuat mengikut aras pengetahuan aplikasi dan kemahiran berdasarkan modul Smagula (1993). Hasil dari penilaian itu akan dianalisa menggunakan Ujian T, untuk melihat perbezaan dari Ujian Pra dan Ujian Pasca. Lukisan-lukisan itu dikategorikan kepada nilai tara seperti dibawah :

1. Lukisan yang cemerlang : (80 – 100)
2. Lukisan yang baik : (60 – 79)
3. Lukisan yang sederhana : (40 – 59)
4. Lukisan yang lemah : (0 - 39)

Rubrik skala (penulis) Pengelasan Lukisan :

Tahap skala	Nilai Tara
Cemerlang	1. Pengetahuan asas dan prinsip lukisannya tepat. 2. Pengolahan nilai-nilai garisan, ton, jalinan, bentuk ruang jelas. 3. Mahir dalam penggunaan alat melukis. 4. cemerlang dalam menguasai teknik melukis.
Baik	1. Pengetahuan asas dan prinsip lukisannya jelas. 2. Dapat mengolah nilai-nilai garisan, ton, jalinan, bentuk, ruang dengan baik. 3. Penggunaan alat dan bahan melukis baik. 4. Berupaya menguasai teknik melukis dengan baik.

Sederhana	1. Penggunaan asas dan prinsip lukisannya sederhana. 2. Pengolahan nilai-nilai garisan, ton, jalinan, bentuk, ruang adalah sederhana. 3. Penggunaan alat dan bahan melukis sederhana. 4. Sederhana dalam penguasaan teknik melukis.
Lemah	1. Pengetahuan asas dan prinsip lukisannya lemah. 2. Pengolahan nilai-nilai garisan, ton, jalinan, bentuk, ruang adalah lemah. 3. Penggunaan pensil dengan alat melukis lemah. 4. Lemah dalam menguasai teknik melukis.

Sebelum Ujian Pasca dijalankan satu rawatan telah diberi kepada pelajar-pelajar tersebut. Untuk sesi asas lukisan telah merujuk kepada beberapa unit pengajaran dan pembelajaran (*Lesson Plan)* Kursus ini telah menggunakan cara pendekatan B.F. Skinner iaitu pengajaran terancang dan pendekatan S.N. Postlethwait (1969) iaitu konsep unit kecil (gabungan menjadi satu program pembelajaran).

Kursus Asas Lukisan -

Kursus Asas Lukisan untuk penyelidikan ini terdiri daripada 4 unit kecil yang disusun mengikut aras senang kepada susah *(from simple to complex*). Pendekatan ini dibuat berpandukan teori Howard J. Smagula (1993).

ASAS LUKISAN

UNIT 1: A. Pengenalan asas seni (4 jam)

B. Eksperimentasi garisan dengan pelbagai media (4 jam)

UNIT 2: Garisan *hatching* – pensel, charcoal (4 jam)

UNIT 3: Garisan *contour & cross contour* (4 jam)

UNIT 4: Garisan *criaroscuro – tonal value* (4 jam)

DAPATAN KAJIAN

Dapatan kajian prestasi melukis responden sebelum rawatan diberi dan selepas rawatan berdasarkan kriteria hasil maujud dari segi :

a) Interpretasi Aktiviti
b) Aplikasi Asas-Asas Seni Reka
c) Kemahiran Alat dan Bahan
d) Eksplorasi Teknik
e) Kreativiti

Kajian juga menggunakan perbandingan kekerapan (frekuansi) dan peratusan dari segi skala pada tahap cemerlang, baik, sederhana dan lemah sebelum rawatan dan selepas rawatan asas lukisan diberi.

Perbandingan Prestasi Kerja Untuk Kriteria Interpretasi Aktiviti Ujian Pra dan Ujian Pasca :

Jadual 1
Perbandingan Prestasi Kerja Untuk Kriteria Interpretasi Aktiviti
Ujian Pra dan Ujian Pasca :

Kriteria	Ujian Pra	Ujian Pasca	Ujian t	
			t	P < .05
Interpretasi Aktiviti				
Min	10.9667	12.5000	5.806	.000 sig.
Sisihan Piwaian	2.3140	2.1589		

Jadual 1 menunjukkan terdapat perbezaan signifikan ($t = 5.806$; $p < .05$) antara min skor ujian pra (min = 10.9667) dan min skor ujian pasca (min = 12.5000) untuk kriteria Interpretasi Aktiviti. Ini menunjukkan penggunaan modul telah membawa kepada peningkatan prestasi kerja responden dalam kriteria ini.

Perbandingan Prestasi Kerja Untuk Kriteria Asas-Asas Seni Reka Ujian Pra dan Ujian Pasca :

Jadual 2
Perbandingan Prestasi Kerja Untuk Kriteria Asas-Asas Seni Reka
Ujian Pra dan Ujian Pasca :

Kriteria	Ujian Pra	Ujian Pasca	Ujian t	
			t	P < .05
Asas-Asas Seni Reka				
Min	10.8333	12.5000	6.047	.000 sig.
Sisihan Piwaian	2.3947	2.1901		

Jadual 2 menunjukkan terdapat perbezaan signifikan ($t = 6.047$; $p < .05$) antara min skor ujian pra (min = 10.8333) dan min skor ujian pasca (min = 12.3167) untuk kriteria Asas-Asas Seni Reka. Ini menunjukkan penggunaan modul telah membawa kepada peningkatan prestasi kerja responden dalam kriteria ASR.

Perbandingan Prestasi Kerja Untuk Kriteria Kemahiran Alat Dan Bahan Ujian Pra dan Ujian Pasca :

Jadual 3
Perbandingan Prestasi Kerja Untuk Kriteria Kemahiran Alat dan Bahan Ujian Pra dan Ujian Pasca :

Kriteria	Ujian Pra	Ujian Pasca	Ujian t	
			t	P < .05
Kemahiran Alat dan Bahan Min Sisihan Piwaian	 10.7500 2.3837	 12.2833 2.1636	- 5.259	.000 sig.

Jadual 3 menunjukkan terdapat perbezaan signifikan (t = - 5.259; p < .05) antara min skor ujian pra (min = 10.7500) dan min skor ujian pasca (min = 12.2833) untuk kriteria Kemahiran Alat dan Bahan. Ini menunjukkan penggunaan modul telah membawa kepada peningkatan prestasi kerja responden dalam kriteria ini.

Perbandingan Prestasi Kerja Untuk Kriteria Eksplorasi Teknik Ujian Pra dan Ujian Pasca :

Jadual 4
Perbandingan Prestasi Kerja Untuk Kriteria Eksplorasi Teknik Ujian Pra dan Ujian Pasca :

Kriteria	Ujian Pra	Ujian Pasca	Ujian t	
			t	P < .05
Kreativiti Min Sisihan Piwaian	 10.4833 2.4390	 11.8667 2.3468	4.301	.000 sig.

Jadual 4 menunjukkan terdapat perbezaan signifikan (t = 4.301 ; p < .05) antara min skor ujian pra (min = 10.4833) dan min skor ujian pasca (min = 11.8667) untuk kriteria Eksplorasi Teknik. Ini menunjukkan penggunaan modul telah membawa kepada peningkatan prestasi kerja responden dalam kriteria ini.

Perbandingan Prestasi Kerja Untuk Kriteria Kreativiti Ujian Pra dan Ujian Pasca :

Jadual 5
Perbandingan Prestasi Kerja Untuk Kriteria Kreativiti Ujian Pra dan Ujian Pasca :

Kriteria	Ujian Pra	Ujian Pasca	Ujian t	
			t	P < .05
Kreativiti Min Sisihan Piwaian	 10.8833 2.5184	 11.8667 2.3468	3.105	.000 sig.

Jadual 5 menunjukkan terdapat perbezaan signifikan ($t = 3.105$; $p < .05$) antara min skor ujian pra (min = 10.8833) dan min skor ujian pasca (min = 11.8667) untuk kriteria Kreativiti. Ini menunjukkan penggunaan modul telah membawa kepada peningkatan prestasi kerja responden dalam kriteria ini.

Rumusan:

Sebagai rumusan, data analisis ujian t membandingkan kriteria hasil maujud semasa ujian pra dan ujian pasca menunjukkan bahawa ada peningkatan didalam prestasi melukis pelajar selepas rawatan di beri. Pelajar didapati lebih berupaya menggunakan pengetahuan asas seni reka, mengeksplorasi teknik yang diajar dan berkemahiran menggunakan alat dan bahan serta kreatif semasa membuat lukisan dalam ujian pasca, ini bererti modul asas lukisan yang dijalankan telah memberikan kesan yang bermakna keatas hasil karya pelajar.

Perbandingan Kekerapan (Frekuansi) dan Peratusan Skor Ujian Pra dan Skor Ujian Pasca Mengikut Skala :

Analisis juga dijalankan untuk menentukan frekuansi dan peratusan bagi tahap skala cemerlang, baik, sederhana, dan lemah sebelum rawatan dan selepas rawatan asas lukisan diberi. Adalah di dapati bahawa 3 responden (5.0 %) sebelum rawatan, 2 responden (3.3 %) selepas rawatan di peringkat tahap cemerlang. Mereka ini telah menguasai pengetahuan asas dan prinsip lukisan dengan tepat, berjaya mengolah nilai-nilai dalam asas seni reka, mahir dalam penggunaan alat melukis dan cemerlang dalam menguasai teknik melukis. Ringkasan pengumpulan data adalah seperti di dalam Jadual 6. Data juga menunjukkan bahawa 15 responden (25%) sebelum asas lukisan, 32 responden (53.3%) selepas asas lukisan pada tahap baik. Ini menunjukkan peningkatan memuaskan berbanding tahap yang lain semasa ujian pasca dijalankan. Jelas disini berlaku peningkatan seramai 16 orang responden iaitu (9.6 %) meningkat dari tahap sederhana semasa ujian pra dilakukan. Ringkasan pengumpulan data adalah seperti di dalam Jadual 6.

Terdapat 42 responden (70%) sebelum rawatan, 26 responden (43%) selepas rawatan pada tahap sederhana dan diperingkat lemah tiada responden yang terlibat. Ini menunjukkan golongan sederhana telah berjaya dikurangkan dan meningkat ke tahap yang baik selepas rawatan diberi. Rumusan kajian ini memberi implikasi bahawa institut pengajian tinggi yang lain perlu menekankan asas lukisan pelajar kerana dapatan kajian menunjukkan ada perubahan berlaku apabila mereka diberikan rawatan mengikut kursus yang baik.

Jadual 6

Skor Ujian Pra dan Skor Ujian Pasca
Taburan Frekuansi dan Peratusan (n = 60)

	JUMLAH MARKAH	
	Ujian Pra 100%	**Ujian Pasca 100%**
Skala		

Cemerlang	**3** **5.0%**	**2** **3.3%**
Baik	**15** **25%**	**32** **53.3%**
Sederhana	**42** **70%**	**26** **43%**
Lemah	**0** **0%**	**0** **0%**
Sd	**11.6275**	**10.675**
Min	**11.6275**	**10.675**

Secara keseluruhannya skor jumlah min markah hasil maujud telah meningkat daripada skor min 53.7667 (SD = 11.6275) semasa ujian pra kepada 60.9667 (SD = 10.6275) selepas rawatan asas lukisan diberikan (rujuk jadual 7). Analisis statistik Ujian t mengesahkan bahawa dapatan ini adalah signifikan pada paras $p < 0.05$ ($t = 5.701$). Ini menjawab soalan kajian iaitu adakah terdapat peningkatan prestasi melukis yang signifikan selepas responden kajian diberi rawatan.

Jadual 7
Ujian t untuk Skor
Jumlah Min Markah Hasil Maujud Ujian Pra dan Ujian Pasca (n = 60)

Responden	Min Markah Jumlah Markah Ujian Pra	Min Markah Jumlah Markah Ujian Pasca	Ujian t	
			Nilai t	Aras Signifikan (2-tailed)
(n = 60) pelajar DSB	53.7667	60.9667	5.701	.000 sig.
Sisihan Piawaian (SD)	11.6275	10.6275		

Sisihan piawaian min : 9.7820, t : 5.701, df : 59, aras signifikan : .000

IMPLIKASI DAN RUMUSAN

Bahagian ini akan menerangkan tentang implikasi, rumusan serta cadangan kepada kajian yang telah dibuat. Kajian ini bertujuan untuk melihat keberkesanan kursus asas lukisan keatas prestasi melukis di kalangan responden. Keputusan kajian juga akan menentukan sama ada terdapat signifikasi peningkatan prestasi melukis selepas diberikan kepada responden.

IMPLIKASI KAJIAN

Smagula (1993) menegaskan bahawa pensyarah Seni Bina yang boleh menggunakan kriteria seperti menguasai interpretasi aktiviti, asas- asas seni reka, menggunakan alat-alat bahan seni serta menguasai eksplorasi pelbagai teknik melukis dan kreatif akan meningkatkan prestasi melukis para pelajar. Ia juga menegaskan bahawa manusia mempunyai potensi kreatif dan potensi ini perlu di perkembangkan dengan betul. Smagula (1993), berpendapat walaupun terdapat banyak perubahan dari segi teknologi dalam bidang rekabentuk dan grafik, lukisan yang menggunakan tangan masih menguasai imaginasi dan melukis itu sendiri perlu latihan untuk mewujudkan peningkatan prestasi. Analisa data dalam kajian ini telah menunjukkan bahawa keputusan ujian pra telah menunjukkan peningkatan semasa ujian pasca di jalankan iaitu setelah pelajar diberi latihan dalam bentuk modul unit-unit berdasarkan pendekatan Smagula (1993). Implikasi dari kajian ini adalah menunjukkan bakal-bakal guru seni memerlukan latihan dan pengetahuan yang mencukupi serta ianya dapat meningkatkan prestasi melukis pelajar. Satu sumbangan dari kajian ini mendapati lima kriteria dalam melukis merupakan ciri utama didalam sesuatu karya.

Dapatan kajian ini pada keseluruhannya menunjukkan peningkatan prestasi melukis pelajar semasa ujian pasca dilakukan menggambarkan rawatan Asas Lukisan telah berjaya memberi kemahiran, pengetahuan dan menggunakan kriteria seperti interpretasi aktiviti, asas-asas seni reka, penggunaan alat bahan seni, eksplorasi pelbagai teknik melukis dan kreativiti didalam menghasilkan sesuatu hasil kerja. Dapatan kajian ini diharap dapat memberi maklumat yang berguna untuk diaplikasikan oleh pihak-pihak yang terlibat secara langsung atau tidak langsung dalam sistem pendidikan hari ini. Suatu perancangan dan tindakan boleh diambil oleh pihak-pihak yang berkenaan bagi mengkaji semula kaedah, teknik dan pendekatan pengajaran dalam kursus asas lukisan supaya prestasi pelajar dapat dipertingkatkan dan dengan memberi penekanan kepada kemahiran dalam meningkatkan prestasi melukis pelajar.

CADANGAN KAJIAN

Kajian ini menyelidik keberkesanan Asas Lukisan didalam meningkatkan prestasi melukis pelajar yang menjadi bakal arkitek. Kajian lanjutan di perlukan untuk mencapai objektif-objektif lain, dimana sampel kajian ini dihadkan kepada PoliPd sahaja. Oleh itu dapatan kajian dan keputusan yang diperolehi daripada kajian ini mungkin tidak dapat di generalisasikan kepada semua guru seni di seluruh negara, kajian lanjutan perlu dilakukan keatas semua Politeknik, prosedur persampelan berlapis digunakan untuk memperolehi dapatan yang lebih lengkap dan menyeluruh. Kursus ini adalah merupakan kesinambungan dari peringkat pendidikan sekolah menengah, rendah dan pra sekolah. Maka adalah dicadangkan untuk menjalankan penyelidikan yang lebih menyeluruh ke atas pelajar dari politeknik agar satu dapatan lebih lengkap dapat diperolehi. Dapatan seperti ini dapat dijadikan panduan kepada kurikulum pada masa akan datang terutama kepada penggubal. Kursus Asas Lukisan ini berupaya memperolehi maklumat tentang kriteria-kriteria Asas Lukisan. Kursus yang lain perlu dibentuk kearah melihat peningkatan prestasi melukis dikalangan pelajar. Kajian ini akan dapat memberi gambaran benar sama ada pengajaran bermodul yang baik dapat meningkatkan prestasi pelajar.

Dapatan kajian ini memberi implikasi bahawa teknik dan cara telah berjaya ditingkatkan semasa ujian pasca . Menyedari kejayaan ini, maka kajian lanjutan yang berkaitan dengan seperti ini boleh dijalankan dalam bidang –bidang seni yang lain, agar strategi yang sesuai dapat dirancang dan dilaksanakan untuk memastikan mutu prestasi melukis berkualiti dan dapat dipertingkatkan. Kajian ini diharap akan membuka jalan kepada lain-lain usaha dalam menerokai bagaimana meningkatkan lagi prestasi melukis pelajar. Adalah diharap cadangan di atas dapat dijadikan pedoman awal bagi kajian-kajian yang akan dijalankan dalam konteks tempatan.

KESIMPULAN

Kajian ini telah mengenal pasti keberkesanan modul Asas Lukisan terhadap pelajar di PoliPD dalam prestasi melukis. Dapatan berikut telah di perolehi:

i) Pelajar telah meningkatkan prestasi melukis Asas Lukisan setelah diberi rawatan melalui modul asas lukisan melalui peningkatan keputusan hasil maujud semasa ujian di beri.

ii) Sebanyak lima kriteria yang digunakan untuk menilai hasil maujud yang di buat oleh pelajar, criteria tersebut adalah seperti berikut :

<u>Kriteria Hasil Maujud Asas Lukisan</u>

1. Interpretasi Aktiviti
2. Aplikasi Asas Seni Reka
3. Kemahiran Alat dan Bahan
4. Eksplorasi Teknik
5. Kreativiti

a. Terdapat perbezaan yang signifikan dari ujian pra dengan ujian pasca. Ujian Pasca adalah meningkat berbanding sebelum pelajar diberi sebarang asas tentang lukisan.
b. Dapatan menunjukkan kriteria asas-asas seni reka telah meningkat paling atas berbanding kriteria yang lain, ini bererti selepas pelajar diberi pengetahuan tentang Asas Lukisan dan kemahiran, kefahaman pelajar akan meningkatkan prestasi karya mereka.

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Penggunaan Khidmat Kaunseling Dalam Kalangan Pelajar Program Det Kejuruteraan Elektrik Di Politeknik Port Dickson

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Katakunci: kaunseling, akademik, bimbingan

Abstrak: Kertas kajian ini dilakukan bertujuan untuk mengenalpasti sejauh mana pelajar program Diploma Kejuruteraan Elektrik (DET) hadir dan melibatkan diri dalam Unit Kaunseling di Politeknik Port Dickson yang mana berperanan sebagai tempat rujukan yang mana membantu prestasi pelajar dari segi akademik dan sahsiah. Responden kajian ini terdiri daripada 150 orang pelajar Diploma Kejuruteraan Elektrik (DET) dari semester satu hingga semester enam. Kaedah kajian yang dibuat adalah menggunakan borang soal selidik dan temubual secara rawak. Dapatan yang diperolehi menunjukkan prestasi akademik pelajar yang hadir mendapatkan maklumat dari unit kaunseling sangat baik. Mereka yang pernah mendapat khidmat ini berpuas hati dengan kelancaran dan persekitaran semasa sesi bimbingan dan kaunseling dan pelajar mengakui bahawa sesi bimbingan dan kaunseling yang dihadiri telah meningkatkan motivasi diri mereka.

Pengenalan.

Politeknik merupakan salah satu gedung institusi pendidikan Malaysia dalam melahirkan modal insan untuk memenuhi pasaran global menjelang tahun 2020. Rata-rata khidmat kaunseling wujud di setiap organisasi pendidikan yang ada di Malaysia. Kewujudan khidmat kaunseling ini memainkan peranan yang agak besar dalam membentuk perjalanan pelajar khususnya di politeknik dalam melengkapkan tempoh pengajian selama enam semester dengan jayanya. Menurut Fadilah Zaini & Maisarah Ishak (2006) Setiap individu juga tidak dapat lari daripada berhadapan dengan pelbagai kesulitan dan masalah yang membelenggu kehidupan seharian. Masalah keluarga, pelajaran, kewangan dan hubungan interpersonal kerapkali mengganggu seseorang untuk melaksanakan tanggungjawab mereka dengan sebaik mungkin [1]. Oleh yang demikian penyelidik berminat untuk mengetahui punca mengapa hanya 25% sahaja daripada 150 orang pelajar program Diploma Kejuruteraan Elektrik (DET) yang hadir dan mendapatkan khidmat kaunseling samada secara sukarela atau melalui surat arahan yang diberikan. Responden kajian adalah terdiri 150 orang pelajar Jabatan Kejuruteraan Elektrik program Diploma Kejuruteraan Elektrik (DET) Politeknik Port Dickson.

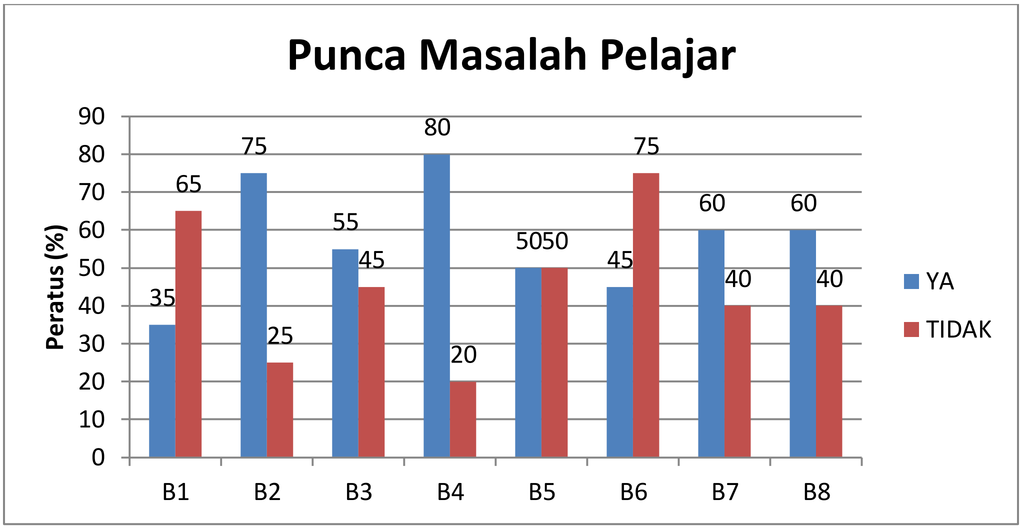
Berdasarkan pemerhatian berkala, pengkaji terpanggil untuk mengetahui alasan mengapa pelajar kurang berjumpa kaunselor bagi menyelesaikan masalah yang mereka hadapi. Pengkaji telah sedia maklum bahawa kebanyakan pelajar mengalami masalah seperti 30% tidak hadir kelas, 20% ada masalah sosial dan 20% masalah sahsiah dan 30% lain lain hal. Dapatan ini diperolehi hasil maklumbalas pensyarah Kejuruteraan Elektrik di Politeknik Port Dickson. Ini bertepatan dengan kenyataan Krumboltz (George & Kristianni, 1990), yang mana menyatakan kaunseling merangkumi aktiviti-aktiviti yang beretika yang dilakukan oleh pihak kaunseling dalam usaha membantu pelanggan menyelesaikan sesuatu masalah dengan melibatkan diri secara efektif supaya menghasilkan penyelesian kepada masalah pelanggan [2].

Metodologi Kajian

Proses pengumpulan data dilakukan melalui kaedah kuantitatif (soal selidik) dan kaedah kualitatif (pemerhatian) selama enam minggu dengan sasaran penglibatan 150 orang pelajar dari semester 1 sehingga semester 6 program Diploma Kejuruteraan Elektrik (DET). Hasil maklumbalas direkod dan dianalisa dalam bentuk graf. Instrumen pemerhatian ini meliputi beberapa senarai semak tentang sikap,dan pandangan pelajar semasa ke unit Kaunseling. Diakhir kajian ini ianya diharapkan dapat meningkatkan kesedaran pelajar tentang kepentingan khidmat kaunseling dalam membantu meningkatkan proses pembelajaran.

Dapatan dan Cadangan Kajian

Analisis data daripada soal selidik yang telah dijalankan mendapati bahawa punca masalah pelajar program Diploma Kejuruteraan Elektrik (DET) Politeknik Port Dickson tidak menggunakan khidmat kaunseling adalah sepertimana Rajah 1(a) dan Rajah 1(b) berikut.



Rajah 1 (a): Punca Masalah Pelajar

PETUNJUK
B1: Saya suka menghadiri Khidmat Kaunseling.
B2: Saya selalu mempunyai masalah.
B3: Saya suka Kaunselor.
B4: Saya takut berjumpa kaunselor.
B5: Saya teruja bila dipanggil oleh pihak kaunseling.
B6: Saya gemar menyertai aktiviti kaunseling.
B7: Saya suka mendengar motivasi khidmat kaunseling.
B8: Saya yakin dan bersemangat setelah ke Khidmat kaunseling.

Rajah 1 (b): Petunjuk punca masalah pelajar.

Berdasarkan rajah 1(b) di atas, terdapat lapan item yang diselidik bagi mengetahui punca masalah dalam kalangan pelajar program Diploma Kejuruteraan Elektrik (DET) yang tidak menggunakan khidmat kaunseling.

Item B1 iaitu suka menghadiri Kihdmat kaunseling menunjukkan 35% sahaja responden suka dan 65% lagi adalah tidak. Bagi item B2, didapati 75% responden mengakui ada masalah yang dihadapi dan 25% sahaja yang tidak. Manakala item 4 iaitu adakah takut berjumpa kaunselor menunjukkan rata- rata responden menyatakan Ya iaitu sebanyak 80% dan selebinya 20% lagi adalah tidak. Item B5 pula menunjukkan peratus teruja atau tidak teruja bila dipanggil oleh pihak kaunseling adalah sama iaitu 50%. Seterusnya Item B6 menunjukkan hanya 45% sahaja responden gemar menyertai aktiviti kaunseling yang dianjurkan dan 75% tidak gemar melibatkan diri. Manakala item B7, 60% responden suka mendengar motivasi khidmat kaunseling dan lebihan 40% lagi tidak. Item terakhir B8 menunjukkan 60% responden yakin dan bersemangat setelah ke khidmat kaunseling dan 40% responden tidak. Kesimpulannya dapatan sebenar dari punca yang dikaji menunjukkan bahawa peratus tertinggi pelajar program Diploma Kejuruteraan Elektrik (DET) Politeknik Port Dickson sebenarnya tidak mengenali secara mesra sisi seorang Kaunselor di politeknik Port Dickson kerana respon mereka menyatakan mereka takut untuk berjumpa kaunselor. Manakala dapatan dari kaedah temubual yang dijalankan secara bersemuka secara rawak dengan 50 orang didapati bahawa 47% pelajar berminat untuk hadir ke unit kaunseling. 60% mengakui ada masalah samada akademik atau sahsiah diri. 63% pelajar menyatakan mereka mengenali kaunselor Politeknik Port Dickson. 75% pelajar mengakui takut untuk berjumpa kaunselor. 90% pelajar setuju menyatakan Kuanseling dapat membantu menyelesaikan masalah mereka dan akhir sekali 85% pelajar setuju khidmat kaunseling memberi keyakinan dan semangat dalam diri mereka.

Berdasarkan analisa yang telah dijalankan, didapati antara punca utama kalangan pelajar program Diploma Kejuruteraan Elektrik (DET) Politeknik Port Dickson adalah disebabkan oleh responden takut untuk berjumpa kaunselor dan tidak gemar menyertai aktiviti kaunseling yang dianjurkan oleh pihak kaunseling. Hasil daripada analisa di atas, kami telah menjalankan beberapa tindakan untuk menggalakkan pelajar mengenali sisi sebenar seorang kaunselor di Politeknik Port Dickson dengan mewujudkan pelbagai aktiviti dan tindakan yang boleh mencambahkan kemesraan silaturahim antara kaunselor dan pelajar supaya lebih mesra dan seterusnya bemanfaat untuk kebaikan pelajar dari segi akademik dan sahsiah diri. Dengan ini kaunselor Politeknik Port Dickson perlu menarik minat pelajar dengan mewujudkan kempen bimbingan setiap semester bagi mendedahkan kebaikan Khidmat kaunseling kepada pelajar serta usaha pihak pensyarah kursus di dalam kelas. Tindakan yang dicadangkan ini selaras dengan kajian Sapora (2003), yang mana menyatakan bahawa pergerakan kelompok dalam proses kaunseling bergantung kepada kemahiran ketua untuk mengendalikan dan melibatkan ahli kelompok [3]. Justeru, Kaunselor Politeknik Port Dickson perlu melibatkan diri dengan aktiviti dengan pelajar dengan mengadakan pelbagai program bagi menarik perhatian pelajar secara lebih terbuka. Kaunselor sebagaimana menurut Paw Eng See, Noriah dan Salleh (2008) seorang kaunselor perlu memiliki perbagai teknik dan kemahiran agar dapat memberikan bimbingan yang terbaik kepada pelanggan mereka [4]. Malah menurut Myrick (2001) menyatakan kaunselor perlu mahir dalam kombinasi kaedah teori dan teknik semasa menjalankan sesi kaunseling [5]. Manakala menurut Cherrington (1994) pula, unsur-unsur utama yang menentukan kejayaan kumpulan adalah melibatkan keupayaan pemimpin untuk merancang, mengurus dan mengawal aktiviti kumpulannya [6].

Bagi permulaan pelaksanaan, tindakan ini telah dilaksanakan dalam tempoh 6 minggu terhadap pelajar didalam kelas pelajar program Dilpoma Kejuruteraan Elektrik (DET). Pensyarah kursus telah mengambil masa selama 10 minit di awal setiap waktu kuliah untuk memberikan motivasi dan nasihat dalam membina keyakinan dalam diri pelajar dengan mengalakkan pelajar ke unit khidmat kaunseling jika ada masalah.. Mereka yang bermasalah akan dipanggil untuk berbincang dan dibimbing oleh kaunselor dengan betul mengikut prosedur unit kaunseling di Politeknik Port Dickson. Dapat dilihat pelajar semakin peka tentang peranan unit kaunseling yang ada dalam membantu pengurusan akademik dan sahsiah diri pelajar itu sendiri. Hasil daripada tindakan penambahbaikan yang telah dilaksanakan oleh pensyarah kursus telah memberi impak yang positif dalam meningkatkan kefahaman responden terhadap khidmat kaunseling yang ada di institusi Politeknik Port Dickson.Tahap kesedaran tentang peranan sebenar kaunselor juga dilihat lebih terbuka apabila mula melibatkan diri dengan program yang dianjurkan oleh unit khidmat kaunseling. Mereka yang pernah mendapat khidmat ini berpuas hati dengan kelancaran dan persekitaran semasa sesi bimbingan dan kaunseling dan pelajar mengakui bahawa sesi bimbingan dan kaunseling yang dihadiri sebanyak telah memotivasikan diri mereka. Mereka juga dilihat semakin berani dan tidak teragak agak untuk hadir ke Unit kaunseling jika ada masalah. Beberapa cadangan untuk kajian seterusnya antaranya adalah seperti Kajian tingkahlaku dan sahsiah pelajar Program DET Politeknik Port Dickson,kajian keberkesanan kerjaya pelajar Program DET Politeknik Port Dickson dan kajian perspektif khidmat kaunseling dalam kalangan pelajar DET Politeknik Port Dickson.

Rumusan

Kesimpulannya, kajian ini amat berguna kepada pihak organisasi dalam usaha membantu mereka mengenalpasti kepentingan pelaksanaan kaunseling di organisasi. Ia juga dapat membantu kaunselor memahami peranan mereka dengan lebih jelas dalam menjalankan tugas mendidik serta membimbing para pelajar yang bermasalah. Persepsi pelajar terhadap peranan kaunselor juga dapat membantu mereka mengenalpasti kelemahan-kelemahan yang wujud sepanjang program kaunseling dijalankan. Oleh yang demikian, ubahlah persepsi anda terhadap perkhidmatan kaunseling dan juga sisi seorang kaunselor di institusi sendiri kerana seseorang yang berjumpa kaunselor tidak semestinya bermasalah manakala kaunselor pula sentiasa bersedia untuk membantu pelanggannya yang memerlukan bantuan bimbingan [7].

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Measuring Student Satisfaction towards Higher Education Institution Services: An Empirical Investigation from Port Dickson Polytechnic

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Keywords: Service quality, student satisfaction, teaching and learning, institution communication

Abstract. This study was conducted to examine the factors that influenced students' satisfaction towards higher education institution. This research aims to evaluate the service quality of a higher educational institute in Malaysia based on three independent variables, teaching and learning, institution life and institution communication. This study used quantitative survey method and data were collected using a set of structured questionnaire. The respondents involved were the students from a Port Dickson Polytechnic, Negeri Sembilan. Data were analyzed using reliability test, correlation and multiple regression analysis. The findings showed that student will be satisfied with the institution if they are satisfied with teaching and learning quality, get a better life from the services offered by institution and receive good institution communication. Among the three variables, this research shows the institution communication influence student satisfaction more than teaching and learning and life outside the courses. An important practical implication of this study recommending that institution need to put high effort to improve institution communication by increasing communication effectiveness, good scheduling of exams, effective problem-solving/complaint handling and ease of contact/access to staffs and management. These are important determinants for student satisfaction to achieve the institution goal for serving the high quality services. The recommendations were also provided for future research.

Introduction

In modern competitive environments services are gaining increasingly more importance in the competitive formula. Educational systems are becoming services for people. Higher education institutions are realising that they could be regarded as a business-like service industry and they are beginning to focus more on meeting or even exceeding the needs of their students. Williams and Cappuccini-Ansfield (2007) believe that the introduction of tuition fees will force universities to act as a "service provider" and be responsive to student requirements. Similarly, Rolfe (2002) maintains that the introduction of tuition fees may change "students' approach to education from that of a recipient of a free service to that of a "consumer". Further, Watson (2003) and Narasimhan (2001) maintain that fee-paying students may expect "value for money" and behave more like consumers. As students are increasingly seen as consumers of higher education services, their satisfaction should be important to institutions that want to recruit new students (Thomas and Galambos, 2004). Appleton-Knapp and Krentler (2006) suggest that students' satisfaction with their educational experience should be a desired outcome in addition to learning.

Winsted (2000) stated that service providers will only be able to deliver service encounters that will satisfy customers if they know what their customers want. If universities know how their students perceive the offered services, they may be able to adapt their services to a certain degree, which should have a positive impact on students' perceived service quality and their levels of satisfaction. Oldfield and Baron, (2000) maintain that "there is an inclination to view service quality in higher education from an organizational perspective". They suggest that institutions should better pay attention to what their students want instead of collecting "data based upon what the institution perceives its students find important". Academic administrators should focus on understanding the needs of their students, who are the specific and primary target audience. Similarly, Douglas and Douglas (2006) suggest that the "student experience and its improvement should be at the forefront of any monitoring of higher education quality". Finney and Finney (2010) stated that universities have to fulfil their students' needs by serving them with high quality education service because it is very important factor to attract and retain students.

In Malaysia, the Malaysian higher education sector has undergone substantial growth as a result of efforts taken by the Ministry of Education to expand the education industries. It is the government's long-term goal to make Malaysia a regional centre of excellence in education. The growth of higher education in Malaysia can be seen in several areas: increase in students' enrolment, increase in number of higher education institution, increase in government spending, additional government policies in promoting education and the country's continuous need for human resources.

One of the Malaysian public higher education institutions is the Malaysian Polytechnic. The Department of Polytechnic Education is committed to provide quality, efficient and customer friendly services to the highest level of objectivity, confidentiality, integrity and professionalism. Their main purpose is to breaking boundaries for the creation of transformative and learning environment for an innovation led economy and to be Malaysia's number one provider of innovative human capital through transformational education and training for the global workforce by 2015 (Abd. Wahab et al., 2010). This transformation requires changes in organizational working culture towards quality of high performance personnel. Through the introduction of transformation on education and training initiatives, polytechnic must sustain to be competitive in global education. Polytechnic has to focus to put high effort in giving their service quality.

Problem Statement

The increased public demand for tertiary education has led to higher education market becoming high competitive. Both, public and private higher education institutions are competing for student enrolment. The demand for the higher education services is increasing because of many factors such as reputation of the institution, future graduates' job prospects, nature of the institutions, lower costs, affiliation of the institutions, entry flexibility and institutions' campus environment (Ming J.S.K., 2010).

Competition has stressed the strategic importance of satisfaction and quality in the battle for winning consumer preferences and maintaining sustainable competitive advantages. Polytechnic must also take an action to compete with other institutions to attract students to choose polytechnic as institution to further their studies. Polytechnics have started to take some action such as advertise this institution through media, discussions with the industry to enhance the employability of students upon graduation, obtain certificates from MQA (Malaysian Qualifications Agency) and ISO (International Organization for Standardization) and improve facilities for students. After a number of actions taken by management and performed by the employees of the polytechnic, it is important to know the level of student satisfaction on the service provided. Service will not be successful if students are not satisfied with the service offered. To identified whether the polytechnic is now serving the quality services, students' satisfaction have to be measured. The problem statement of this study is, whether the student is satisfy with the service rendered by the Port Dickson Polytechnic?

1.2 Research Question

This research is expected to answer several questions that related to the service quality towards students' satisfaction.

i) Is there a positive relationship between teaching & learning and student satisfaction?

ii) Is there a positive relationship between institution life and student satisfaction?

iii) Is there a positive relationship between institution communication and student satisfaction?

Significant of Research

This study is relevant for the management of polytechnics to know the level of student satisfaction towards the quality of services offered in the polytechnics and further, give the opportunity to improve and enhance the quality of services.

LITERATURE REVIEW

More and more universities have gradually adopted a marketing approach as they compete to attract and retain top quality students. As higher education meets all the classical features of services (Zeithaml and Bitner, 2002), the concepts of service quality and customer satisfaction are directly applicable, moving the universities closer to their market needs. Since new generation students have more influence and greater awareness as consumers, becoming more interactive and selective as regards their future, it becomes even more difficult to attract them (Sigala and Baum, 2003). Therefore, the constant changes in student demands are shifting from a traditional system like the educational one into a totally consumer-led market, where tools such as e-learning have to be used (Sigala and Sakellaridis, 2004).

Based on findings in the service quality literature, O'Neill and Palmer (2004) define service quality in higher education as "the difference between what a student expects to receive and his/her perceptions of actual delivery". To define the concept of satisfaction, so many attempts have been made by different researchers in different time periods and all the researchers acknowledged that the final state of psychological process is satisfaction. Giese and Cote (2000) proposed a definition of satisfaction as "summary and affective response of intensity that is variable and cantered on particular aspect of acquisition and/or consumption that occurs exactly in the moment when the individual evaluates the objects." The satisfaction concept has also been extended recently to the context of higher education. In terms of education consumption, satisfaction has been defined by Elliot and Shin (2002) as "the favourability of a student's subjective evaluation of the various outcomes and experiences associated with education and being shaped continually by experiences with campus life." Similarly, student satisfaction can be described as a short-term attitude derived from their experience with and evaluation of the education service provided (Elliott and Healy, 2001). Research findings reveal that satisfied students may attract new students by engaging in positive word-of-mouth communication to inform acquaintances and friends, and they may return to the university to take other courses (Helgesen and Nesset, 2007). Student satisfaction has also a positive impact on fundraising and student motivation (Elliott and Shin, 2002)

The higher the service quality the more satisfied the customers. Thus, satisfaction is based on customer expectations and perception of service quality (Sigala, 2004). Quality of service, and particularly the perceived one, is produced at the same time as the service supply and consumption. It is exactly in this crucial moment that customer satisfaction has to be produced and possibly tested. Therefore, a strict link between customer satisfaction and quality of service exists (Petruzellis et al., 2006). Customers are satisfied when the service fits their expectations, or very satisfied when the service is beyond their expectations, or completely satisfied when they receive more than they expect. On the contrary, customers are dissatisfied when the service is below expectations.

O'Driscoll (2012) identified that three factors of academic, welfare and communication were the most important predictors of student satisfaction in first year and interestingly, facilities was not a significant predictor of satisfaction suggesting that while the provision of basic infrastructural facilities such as ICT, classrooms and library access are important services that students would naturally expect to be provided, they seem to attribute greater significance to the less tangible aspects that contribute to their college experience. Furthermore, research suggests that students who have a sense of belonging and benefit from social engagement are more likely to be satisfied with their educational experience (Einarson et al., 2005). Douglas, Douglas and Barnes (2006) conducted a survey in a UK university to measure students' satisfaction and found that many of the physical aspects of the University services are not important with regards to student satisfaction. This finding supports previous findings by Banwet and Datta (2003) and Hill et al. (2003) all of whom found that the most important aspects of a university's service offerings were associated the core service, i.e. the lecture, including the attainment of knowledge, class notes and materials and classroom delivery. The quality of the teaching and learning experience that is of importance. These aspects of the facilities can be, and indeed are, used to attract students during Open Days. However, once students have enrolled, it is the quality of the teaching and learning that will cause satisfaction or dissatisfaction and they are prepared to tolerate as long as the teaching they receive is at an acceptable level. (Gruber et al., 2010) stated that students' satisfaction with their university is based on a relatively stable person-environment relationship. Thus, the satisfaction of students seems to reflect quite well perceived quality differences of offered services and of the wider environment.

Senthilkumar and Arulraj (2011) suggested also in less tangible aspects, the sense of personal and institutional responsibility for the education, welfare of students and of the community at large and for a commitment to high professionals standards in scholarship and research. Gibson (2010) explored the research literature of the last 15 years examining the reasons for students' satisfaction and dissatisfaction with their higher educational experience. Results showed that variables academic staff/teaching and classes/curriculum were found significant in all the cited studies in the paper. Besides the availability of IT and advising, services also played an important role in students' academic satisfaction and also, for non-academic factors, degree of student centeredness and social integration were found important, especially in large institutions. In Pakistan, Butt and Rehman (2010) conducted a study examining student satisfaction in higher education and collected data from 350 students from different universities. According to results, teachers' expertise is the most influential factor on the students' satisfaction, whereas courses offered and learning environment are the next important factors, while the classroom facilities is the least important factor among all the variables. Khan et al. (2011) in order to measure students perspective from service quality in higher education institutions, found a significant relationship between dimensions of service quality i.e. reliability, assurance responsiveness and empathy with satisfaction, while tangible had an insignificant relation with students satisfaction. It was also observed that higher the level of students' satisfaction, the greater was their willingness to put greater efforts toward their studies. Malik et al. (2012) research also identified that the most important aspects were related to academic facilities and teaching, while the least important were related to physical facilities.

RESEARCH METHOD

Research Design: This empirical study (descriptive) will examine student satisfaction in relation to three dimensions of service quality: teaching and learning, institution life and institution communication. Descriptive research is a type of conclusive research that has major objective of describing something, usually market characteristics or functions.

Sampling: Data will be collected from primary sources. The sample was formed of 200 students, which were taken from the Commerce and Engineering Departments at Port Dickson Polytechnic. This study will use non probability sampling techniques, judgmental and quota. The sample was chosen based on the judgment of the researcher and the respondents will be choose base on the quota: 50 respondents from Commerce Department and another 150 respondents from Engineering Department. In Port Dickson Polytechnic, Engineering Department has divided to 3 departments. Civil Engineering Department, Electrical Engineering Department and Mechanical Engineering Department. 150 respondents from Engineering Department will be choose equally from the three departments, 50 respondents from each department.

Measurement: The measurement for this reseach was adapted from previous research. The journals are 'Examining student satisfaction with higher education services, Using a new measurement' journal by Gruber, Fub, Voss and Glaser-Zikuda (2010), from 'What matters most, An exploratory multivariate study of satisfaction among first year hotel/hospitality management students' journal by O'Driscoll (2012), "SQM-HEI – Determination of Service QualityMeasurement of Higher Education in India" by N. Senthilkumar, and A. Arulraj (2011) and from "Measuring student satisfaction at a UK university" by Jacqueline Douglas, Alex Douglas and Barry Barnes (2006). The questionnaires will be distributed to the respondents and they have to answers all the questions based on the number from 0 (strongly disagree) – 10 (strongly agree). This interval scale is use to measure the degree of agreement towards the statement.

Research Procedure: This research will be conducted using survey research methods. In particular, a questionnaire was developed for data gathering and some statistical methods were used for data analysis. A panel of experts was formed to assist in questionnaire development and to validate the research results. The research participants who invited to participate in this academic research study concerning factors related to service quality and student satisfaction towards the Port Dickson Polytechnic. Participation for this research is voluntary.

FINDINGS

Profile of Respondents: Respondents were selected to meet all the conditions set by the researcher. This is important because the respondents were selected to represent the group who got an experience with service provided by Port Dickson Polytechnic. The frequency distribution of the respondents' program in this study were two programs which is Commerce and Engineering. Commerce students represented 50 respondents and engineering students represented 150 respondents. Number of male respondents is 111, represent 55.5% of the total gender, higher than female respondents only 89 students, represent 44.5% of the total gender. It was found three year level of respondents study which is first, second or third year. Only 2% of respondent is first year student. Second year students represented 26 respondents or 13% and third year students represented 170 respondents or 85% in whole of year level in this study. The majority of respondents were from third year students. They have been choosed by researcher because of their long experience with service provided by Port Dickson Polytechnic. The frequency distribution of the respondents' also shows where the respondents live. It was found four of living place of respondents which is 33 respondents from hostel, represented 16.5%, the highest number of 159 respondents live at rented house represented 79.5%, 7 respondents live at family house, represented 3.5% and only 1 respondent live at other place, represent 0.5% of the total place of living.

Reliability Tests: Below is the reliability statistics for the mentioned variables. Noted that the rule of thumb about Cronbach-alpha coefficient size is 0.6 to ‹ 0.7 is moderate and ≥ 0.9 is excellent.

Table 4.2: Table of Scale Reliability

Variables	Item	Cronbach's Alpha
Teaching and Learning	6	0.876
Institution Life Outside the Courses	7	0.886
Institution Communication	4	0.885

Student Satisfaction	4	0.915

Based on table 4.2, after conducting reliability tests in question Teaching and Learning, researcher found that the reliability or Cronbach's Alpha is as high as 0.876. This suggests that the statement in questionnaires is very reliable and able to test the thoughts and perception of the respondents towards Teaching and Learning. After conducting reliability tests in statement Institution Life Outside the Courses, researcher found the reliability or Cronbach's Alpha is as high as 0.886. This suggests that the statement in questionnaires is very reliable and able to test the thoughts and perception of the respondent towards Institution Life Outside the Courses. After conducting reliability tests in question Institution Communication, found the reliability or Cronbach's Alpha is as high as 0.885. This suggests that the statement in questionnaires is very reliable and able to test the thoughts and perception of the respondent towards Institution Communication. Based on the table, after conducting reliability tests in question Student Satisfaction, researcher found the reliability or Cronbach's Alpha is as high as 0.915. This suggests that the statement in questionnaires is very reliable and able to test the thoughts and perception of the respondent towards Student Satisfaction.

Correlation: Table 4.3 shows the results of data analysis based on correlation between the constructs of the study.

Table 4.3: Summary of Correlation Analysis

Relationship	**R**	**Sig.**
Teaching & Learning and Student Satisfaction	**0.707	0.00
Life outside the courses and Student Satisfaction	**0.699	0.00
Institutions Communications and Student Satisfaction	**0.784	0.00
Teaching & Learning and Life outside the courses	**0.666	0.00

** Correlation is significant at the 0.01 level

Based on the table 4.3, we can see that there have several variables which is between Teaching and Learning and Student Satisfaction, Life outside the courses and Student Satisfaction, Institutions Communications and Student Satisfaction. The "sig.” (2-tailed) for all of the variables is .000. This value is less than .01, and then the correlation is considered to be significant which mean that the researcher can be 99% confident that the relationship between these five variables is no due to chance.

The values of the Pearson Correlation range from -1 to +1 with negative numbers representing a negative correlation which mean that as one variable increases, the other variable will decrease. And positive number represents a positive correlation which means that as one variable increases, the other will also increase. The closer the value is to -1 to +1, the stronger the association is between the variables. Follow the table above, two variables between Teaching and Learning and Student Satisfaction, researcher hypothesized a positive relationship since the Pearson Correlation value $r = 0.707$, $p < 0.01$ and the value between 0.5 and 0.9 mean are strongly related. This value showed that increasing in Teaching and Learning quality, student will be more satisfied with the service. Between Life outside the courses and Student Satisfaction, researcher hypothesized a positive relationship since the Pearson Correlation values is $r = 0.699$, $p < 0.01$ showed that more happy student with life in institution, more satisfied student with the institution service. For Institutions Communications and Student Satisfaction, researcher hypothesized a positive relationship since the Pearson Correlation values is $r = 0.784$, $p < 0.01$ and the value are highly strong related. This value showed that increasing in Institutions Communications will increase student satisfaction with the institution service.

Multiple Regression: Regression analysis is used to predict a response variable based on one or more explanatory variables. It can be used to determine which kinds of variables that we have information on can be used to forecast or predict variables that we don't have information on.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822[a]	.675	.670	.78999

a. Predictors: (Constant), Comm, Teaching, Life

The R value as shown in the table above was found to be 0.822, which indicates that all the independent variables account for 67.5% of the variation in the mediator variable, satisfaction.

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	1.392	.362		3.846	.000
	Teaching	.261	.065	.245	4.035	.000
	Life	.182	.060	.192	3.059	.003
	Comm	.411	.059	.469	7.025	.000

a. Dependent Variable: Satis

Table above shows the value of the Standardized Coefficient Beta which contributes to measure each variable of the model. A large value indicates that a unit change in the predictor variable has a large effect on the criterion variable. The finding shows that the largest coefficient beta is 0.469, which is for Institution Communication. This means this variable makes a significant or unique contribution to explaining the satisfaction on service quality at the institution. The coefficient beta for Teaching and Learning is 0.245 and Life outside the courses is 0.192. The multiple regressions model shown in the form of equation is as follows:

Student Satisfaction = 1.392 + 0.245 (Teaching and Learning) + 0.192 (Institution Life)
+ 0.469 (Institution Communication)

The p-value in the below table indicates whether this variable is making a statistically significant unique contribution into the equation. If the p-value is less than 0.05, then the independent variable has significant or positive relationship with the dependent variable. If it is greater than 0.05, then the relationship with the dependent variable is not statistically significant. The p-value of Teaching and Learning and Institution Communication is 0.00 which indicates that these two dimensions positively influence the satisfaction on service quality at the institution. For Life outside the courses, the p-value is 0.03, also has positive relationship with the satisfaction and this dimension also significantly influence student satisfaction on service quality at the institution.

CONCLUSION

Implication and Recommendation: This study finds the relationship between teaching and learning, life outside the courses and institution communication towards Student Satisfaction in institution to be significant. The results illustrated that all three variables, teaching and learning, life outside the courses and institution communication have statistically significant impact on Student Satisfaction. The finding shows the Institution Communication influence Student Satisfaction more than Teaching and Learning and life outside the courses. An important practical implication of this study recommending that institution need to put high effort to improve Institution Communication by increasing communication effectiveness, good scheduling of exams, effective problem-solving/complaint handling and ease of contact/access to staffs and management. These are important determinants for Student Satisfaction to achieve the institution goal for serving the high quality services.

This study also identified that Teaching and Learning have significant impact towards Student Satisfaction. It suggested that for Teaching and Learning activities, institution should focus on increasing the good quality of teaching. Institution has to support and enhance lecturers to give support to students, stimulated students interest and be fair and transparent when giving scores to students. The courses offered by institution also must relevance to future needs, same goes to additional courses offered, must be relevant too. All these will be very helpful in helping Port Dickson Polytechnic to achieve the high quality services and perform better in future.

Beside institution communication and Teaching and Learning, Life Outside the Courses also give significant impact to Student Satisfaction. In this study, researcher only asked the students about their social life in the institution after class. The questions are not involving their life outside the institution. This is to make sure the study is only captured about the service quality that has been given by the institution. The objectives is to identified whether institution serving students with safety and comfortable environment inside the campus, offer student activities outside the class, retain good atmosphere among students, provide comfortable place to live inside or outside the campus, provide good catering facilities/ service overall and give high support to students welfare. Institution Life Outside the Courses is significant because students are really care about their social life in the institution. When institution can provide services that support a better life for student in the institution, student will be more satisfied.

Limitation and Direction for Future Research: Like others previous research, this research also has to face a limitation. The limitation of this study is associated with the area where data were being collected, which was only in the region of Port Dickson Polytechnic, Negeri Sembilan. Therefore, a natural extension of this study would be to test its predictions within all polytechnics in Malaysia that covers a broader area. Despite that, the result of this study may give some benefits to all polytechnic institution in Malaysia to achieve high service quality that will lead to the student’s satisfaction and successful of institution.

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PENGGUNAAN *ELECTRICAL WIRING TRAINER (EWT)* UNTUK DIAPLIKASI KEPADA KURSUS *ELECTRICAL WIRING* (ET102)

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ABSTRAK

Kajian ini dijalankan bagi mengenal pasti keberkesanan *EWT* yang dibangunkan untuk diguna pakai bagi kursus *ET102*. EWT merupakan pakej yang terdiri daripada lapan (8) modul beserta dengan satu video interaktif yang dihasilkan khusus untuk memudahkan pemahaman serta melancarkan proses Pembelajaran dan Pengajaran (P&P). Kajian secara deskriptif berbentuk tinjauan ini melibatkan sampel kajian yang terdiri daripada 37 orang pelajar semester satu daripada program Diploma Kejuruteraan Elektrik (DET). Instrumen kajian yang digunakan dalam kajian ini ialah soal selidik. Data-data mentah dianalisis untuk mendapatkan bilangan pelajar bagi menilai ciri-ciri *EWT* adakah bersifat mesra pengguna dalam aspek motivasi, rekabentuk antaramuka, kefahaman aplikasi dan keselesaan pengguna. Dapatan kajian ini menunjukkan pelajar bersetuju bahawa penggunaan *EWT* ini membantu mereka memahami kursus *ET102* dengan lebih baik dan secara langsung ia boleh dijadikan asas kepada pensyarah kursus *ET102* untuk membantu proses P&P supaya ianya berjalan dengan lancar serta memberi impak positif kepada pelajar.

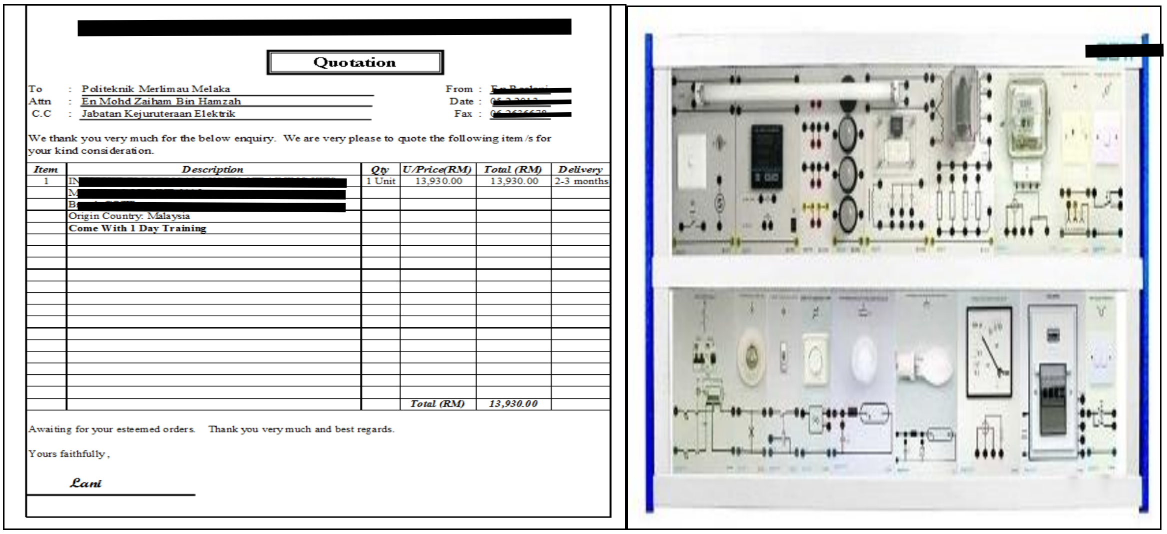
PENGENALAN

Latihan dan pendidikan untuk para jurutera dan juruteknik memerlukan satu persediaan yang lengkap di mana pihak industri biasanya lebih cenderung untuk memilih mereka yang mempunyai ilmu kejuruteraan dan berkemahiran dalam bidang berkaitan. Oleh itu program pendidikan yang bercorak *practical-biased* atau cenderung praktikal telah diperkenalkan di Malaysia. Ianya sejajar dengan penumpuan sistem pendidikan negara kepada pembangunan sumber tenaga manusia dalam bidang teknik dan vokasional. Ramai tokoh psikologi pendidikan seperti Lewin, Piaget dan Vygotsky secara tidak langsung menyokong program pendidikan yang bercorak *practical-biased* berdasarkan teori-teori proses pembelajaran yang telah diutarakan oleh mereka. Menurut Lewis proses pembelajaran merupakan proses di mana pengetahuan itu dibentuk melalui transformasi pengalamam. Pembelajaran akan berlaku apabila pelajar tersebut berinteraksi dengan persekitarannya (Kolb, 1984).

Geoffry Moss (1987) menyatakan bahawa sesebuah organisasi itu perlu bijak dalam merancang dan merangka program latihan mereka. Leonard Nadler (1994), pula menyatakan apabila hendak melaksanakan sesuatu program latihan, pelaksana wajarlah mampu mempelbagaikan kaedah latihan tersebut sehinggalah latihan itu menjurus ke arah bidang kerja sebenar. Beliau menyarankan supaya supaya setiap latihan yang mereka lalui adalah perlakuan kerja sebenar. Oleh itu, untuk menghasilkan jurutera atau juruteknik yang baik, pelaksana program kejuruteraan mestilah menyediakan asas yang kukuh dan kaedah perlaksanaan yang efektif dalam kerja-kerjas makmal yang *practical-biased*. Tanpa pendedahan kepada kerja makmal, bengkel dan kerja di lapangan, usaha untuk mengeluarkan jurutera atau juruteknik berkualiti akan menjadi pincang dan meragukan badan professional (Wahid Razzaly, 2001)

Kursus *ET102*, merupakan kursus teras yang wajib diambil oleh semua pelajar semester satu Jabatan Kejuruteraan Elektrik. Bagi pelajar-pelajar yang mempunyai pengalaman atau pernah mempelajarinya ketika berada di sekolah Vokasional dan Teknik, kursus ini merupakan kursus yang mudah bagi namum bagi mereka yang terdiri daripada aliran bukan teknikal contohnya aliran sastera dan sains kursus ini bukanlah sesuatu yang mereka sukai kerana mereka tidak terdedah dengan intipati kursus ini dari awal lagi. Mereka akan menghadapi masalah pada peringkat awal dan secara tidak langsung menjadikan kursus ini sebagai satu kursus yang membebankan mereka. Bagi mencari penyelesaian untuk permasalahan ini, pembelian *EWT* merupakan satu penyelesaian yang terbaik, dimana pelajar akan lebih mudah membayangkan dan memahami sambungan pendawaian elektrik domestik satu fasa secara lebih cepat tanpa mengira latar belakang pendidikan mereka. Justeru itu, pelajar dapat melakukan pendawaian sebenar di atas papan pendawaian mereka dengan lebih cepat, tepat dan betul berdasarkan kepada video interaktif yang dibangunkan untuk memberi mereka panduan untuk membuat penyambungan.

Walaubagaimanapun apabila proses *survey* harga dilakukan kepada *EWT* jenama **XXX**. Harga yang ditawarkan terlalu tinggi. Rajah 1 merupakan sebut harga dari syarikat berkenaan :



[redacted]

Quotation

To : Politeknik Merlimau Melaka
Attn : En Mohd Zaiham Bin Hamzah
C.C : Jabatan Kejuruteraan Elektrik

From : [redacted]
Date : [redacted]
Fax : [redacted]

We thank you very much for the below enquiry. We are very please to quote the following item /s for your kind consideration.

Item	*Description*	*Qty*	*U/Price(RM)*	*Total (RM)*	*Delivery*
1	IN[redacted]	1 Unit	13,930.00	13,930.00	2-3 months
	M[redacted]				
	B[redacted]				
	Origin Country: Malaysia				
	Come With 1 Day Training				
			Total (RM)	*13,930.00*	

Awaiting for your esteemed orders. Thank you very much and best regards.

Yours faithfully,

Lani

Rajah 1 : *Electrical Wiring Trainer* Dari Jenama XXX

Memandang harga yang ditawarkan cukup tinggi, *EWT* ini dibangunkan sendiri di Politeknik. Jadual 1 menunjukkan senarai aksesori dan peralatan yang digunakan untuk pembangunan *EWT di Politeknik.*

Bil	Senarai Aksesori/Peralatan	Harga Seunit	Kuantiti Digunakan	Jumlah
Modul Pendawaian Satu Fasa				
1	Meter KWJ	50	1	50.00
2	Neutral Link	15	1	15.00
3	Main Fuse	18	1	18.00
4	Red Terminal	0.5	54	27.00
5	Black Terminal	0.5	28	14.00
6	Green Terminal	0.5	14	7.00
7	Main Switch	12	1	12.00
8	ELCB	8	1	8.00
9	MCB 10A	6	3	18.00
10	MCB 20A	6	3	18.00
11	Lamp Holder	1	8	8.00
12	Base Lamp Holder	0.7	8	5.60
13	One Way Switch	5	1	5.00
14	Dimmer Switch	5	1	5.00
15	Two Way Switch	8	4	32.00
16	Switch Holder	1	9	9.00
17	Switch Pertengahan	12	1	12.00
18	Socket Outlet	14	4	56.00
19	Trainner Rack	250	1	250.00
20	Kabel Merah	50	1	50.00
21	Kabel Hitam	50	1	50.00
22	Kabel Hijau	50	1	50.00
23	Lain Lain	100	-	100.00
Jumlah				**819.60**
Modul Solar				
1	Solar Panel	100	5	500.00
2	Inverter	100	1	100.00
3	Meter	12	6	72.00
4	Bateri	100	1	100.00
5	Lain -lain	100	-	100.00
Jumlah				**872.00**

Jadual 1 : Senarai Aksesori Dan Peralatan

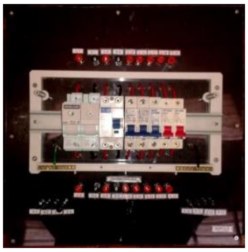
METODOLOGI KAJIAN

Pembangunan Produk

Rekabentuk Elektrikal

Modul-modul dibangunkan mengikut silibus kursus *ET102* disamping satu modul tambahan iaitu sistem kuasa solar. **Rajah 2** menunujukan sebanyak lapan modul dibangunkan untuk melengkapkan *EWT* iaitu *:*

Modul	Perincian Modul	Gambar
1	*Kilo Watt/Jam Assembly*	

		
2	*Distribution Board Assembly*	
3	*One Way Switch Assembly*	
4	*Two Way Switch Assembly*	
5	*Intermediate Switch Assembly*	
6	*Socket Oulet Assembly*	

		
7	*Solar System Assembly*	
8	*Panel Solar Assembly*	

Rajah 2 Modul - Modul Yang Dibangunkan Untuk Melengkapkan *EW*

Rekabentuk Video Interaktif

Setelah lapan modul telah berjaya dibangunkan dan diujilari bagi memastikan ianya berfungsi dengan baik suatu video interaktif telah dibangunkan bagi memudahkan pelajar memahami bagaimana keadah penggunaannya dengan betul dan tepat**. Rajah 3** merupakan video interaktif yang telah dibangunkan.

Video	**Perician Mengenai Video Interaktif**
	Muka depan video interaktif yang

<table>
<tr>
<td>


</td>
<td>dibangunkan</td>
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<tr>
<td>


</td>
<td>Menu utama yang dibahagikan kepada beberapa sub topik :
1. Profil
2. Pengenalan
3. Blok
4. Video
5. Pencapaian</td>
</tr>
<tr>
<td>


</td>
<td>Sub topik untuk pengenalan kepada EWT yang dibangunkan</td>
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</td>
<td>Sub topik untuk blok bagi modul-modul yang dibangunkan</td>
</tr>
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<td></td>
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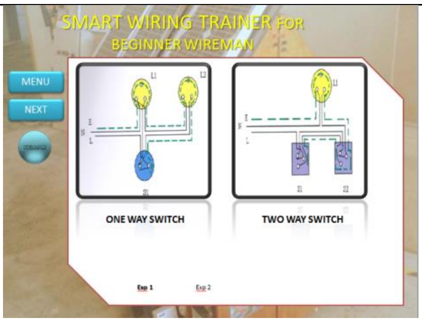
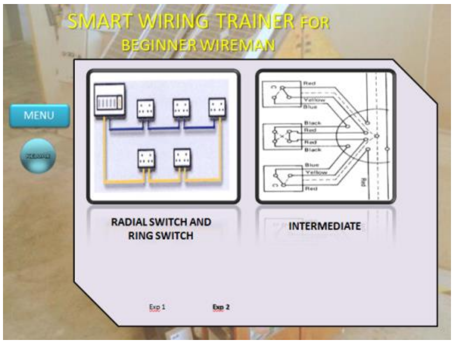
</table>

	Sub topik untuk blok bagi suis satu hala dan suis dua hala
	Sub topik untuk blok bagi soket keluaran jenis sambungan gelang dan jejari dan suis pertengahan
	Menu bagi kesemua video demo untuk setiap amali
	Video amali 1 untuk suis satu hala mengawal satu lampu

	
	Video amali 2 untuk suis dua hala mengawal satu lampu
	Video amali 3 untuk suis perantara (pertengahan) mengawal satu lampu

	Video amali 4 untuk soket keluar sambungan jejari dan gelang.
	Video amali 5 untuk sistem solar lengkap

Rajah 3 Merupakan Video Interaktif Yang Telah Dibangunkan.

Instrumen kajian

Penilaian Rekabentuk Produk

Seramai 37 orang pelajar yang mengambil kursus *ET102* diambil sebagai sampel kajian. Mereka ini terdiri daripada pelajar DET 1C. Keseluruhan populasi diambil bertujuan membesarkan saiz sampel kajian yang dijalankan. Instrumen kajian yang digunakan adalah berbentuk soal selidik. Kajian ini merangkumi dua bahagian.

Bahagian A

Bahagian A mengandungi demografi responden.

Bahagian B

Bahagian B adalah mengenai keberkesanan pembangunan rekabentuk *EWT*. Bahagian ini mengandungi 17 item yang dibahagikan kepada 4 sub topik iaitu motivasi, rekabentuk antaramuka, kefahaman aplikasi dan keselesaan pengguna. Kedudukan skala adalah seperti berikut :

Amat Tidak Setuju	=	1
Tidak Setuju	=	2
Kurang Setuju	=	3
Setuju	=	4
Amat Setuju	=	5

Data-data dan matlamat yang diperolehi daripada soal selidik diproses dan dianalisis dengan bilangan pelajar bersetuju dengan item yang ditanya.

ANALISIS DAN KEPUTUSAN

Dapatan Rekabentuk Produk

Rajah 4: *EWT* yang telah dibangunkan

Demografi

Jadual 2 menunjukkan bilangan dan peratus responden mengikut jantina yang telah menjawab borang soal selidik yang diedarkan.

Jantina	**Bilangan Responden**	**Peratus (%)**
Lelaki	31	83.78
Perempuan	6	16.22
Jumlah	37	100.0

Jadual 2 : Bilangan dan peratus responden mengikut jantina

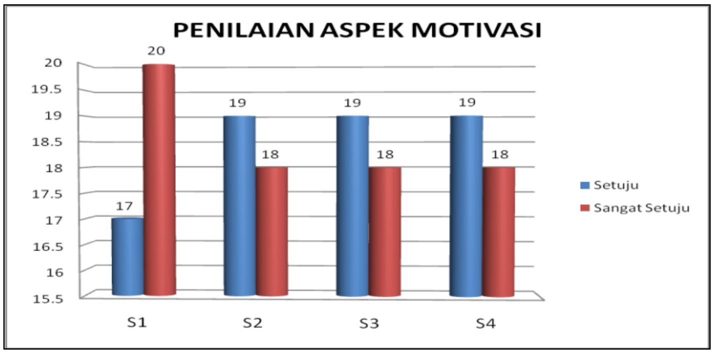
Keberkesanan EWT

Jadual 3 merupakan soalan kajian mengenai penilaian aspek motivasi berdasarkan kepada soalan soal selidik yang diedarkan.

No. Item	Pernyataan
1	Saya seronok menggunakan *EWT* ini
2	*EWT* ini memberi semangat kepada saya untuk mendalami bidang elektrikal
3	Proses P&P menggunakan *EWT* ini menarik minat saya
4	*EWT* ini memberi peluang kepada saya untuk mencuba sendiri bagaimana pendawaian dilakukan

Jadual 3 : Soalan Penilaian aspek motivasi

Daripada **Rajah 5**, didapati bahawa 20 orang pelajar **sangat setuju** item seronok menggunakan *EWT* ini dan 17 orang pelajar lagi **setuju** item seronok menggunakan *EWT* ini. Bagi item *EWT* ini memberi semangat kepada saya untuk mendalami bidang elektrik seramai 18 orang pelajar **sangat setuju** dan 19 orang pelajar **setuju**. Proses pembelajaran dan pengajaran menggunakan *EWT* ini menarik minat saya jumlah pelajar adalah sama dengan item kedua yang ditanya sebelum ini iaitu 17 orang **setuju** dan 18 orang lagi pelajar **sangat setuju**. Item terakhir yang ditanya untuk penilaian aspek motivasi adalah *EWT* ini memberi peluang kepada saya untuk mencuba sendiri bagaimana pendawaian dilakukan masih menunjukkan bilangan pelajar **setuju** dan **sangat setuju** masih sama bilangan pelajarnya untuk item 2 dan item 3.



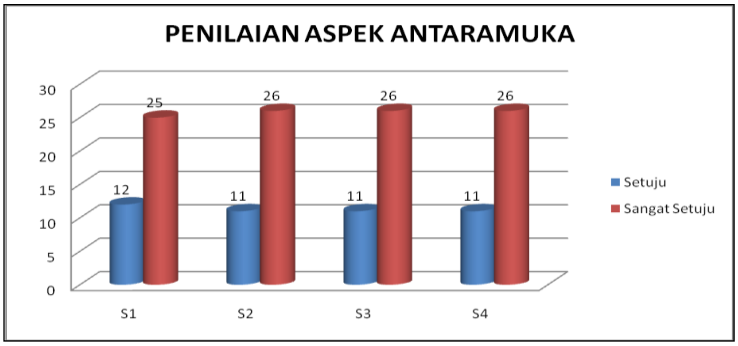
Rajah 5 : Dapatan kajian dari aspek motivasi

Jadual 4 merupakan soalan kajian mengenai penilaian aspek rekabentuk antaramuka berdasarkan kepada soalan soal selidik yang diedarkan

No. Item	Pernyataan
1	*EWT* ini menyediakan kaedah pendawaian yang mudah dan teratur
2	Kedudukan aksesori dan peralatan berada pada tempat yang sesuai dan mudah dicapai
3	Rekabentuk keseluruhan *EWT* ini dapat mengambarkan sistem pendawaian satu fasa
4	Tidak terdapat bahagian/komponen dalam *EWT* ini boleh membahayakan atau mencederakan pengguna

Jadual 4 : Soalan aspek rekabentuk antaramuka

Daripada **Rajah 6,** didapati bahawa seramai 25 orang pelajar **sangat setuju** item *EWT* ini menyediakan kaedah pendawaian yang mudah dan teratur dan 12 orang pelajar lagi **setuju** item *EWT* ini menyediakan kaedah pendawaian yang mudah dan teratur. Bagi item Kedudukan aksesori dan peralatan berada pada tempat yang sesuai dan mudah diacapai seramai 26 orang pelajar **sangat setuju** dan 11 orang pelajar **setuju.** Item rekabentuk keseluruhan *EWT* ini dapat mengambarkan sistem pendawaian satu fasa mendapat seramai 26 orang pelajar yang **sangat setuju** dan hanya seramai 11 orang pelajar yang **setuju** untuk item ini. Item terakhir untuk aspek rekabentuk antaramuka adalah tidak terdapat bahagian/komponen dalam *EWT* ini boleh membahayakan atau mencederakan pengguna mendapat bilangan pelajar yang **sangat setuju** dan **setuju** yang sama dengan item kedua dan item ketiga.



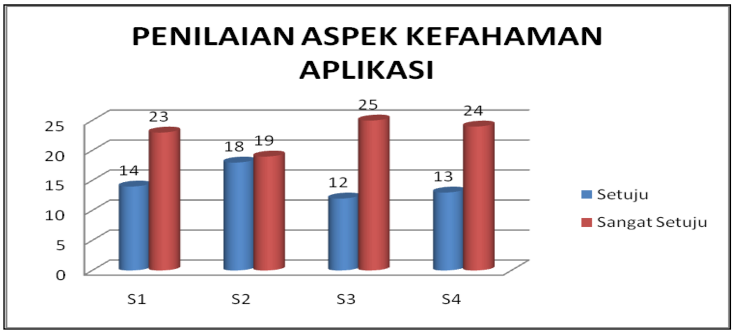
Rajah 6 : Dapatan kajian dari aspek antaramuka

Jadual 5 merupakan soalan kajian mengenai penilaian aspek kefahaman aplikasi berdasarkan kepada soalan soal selidik yang diedarkan

No. Item	Pernyataan
1	Proses yang terlibat dalam *EWT* ini diterangkan dengan terperinci
2	*EWT* ini memberikan peluang kepada saya melihat aplikasi pendawaian satu fasa dengan jelas
3	*EWT* ini dapat melatih pelajar membuat pendawaian dari satu modul ke satu modul yang lain
4	*EWT* ini dapat merangsang perkembangan idea dalam aplikasi sistem pendawaian

Jadual 5: Soalan untuk penilaian aspek kefahaman aplikasi

Daripada **Rajah 7**, didapati bahawa 23 orang pelajar **sangat setuju** proses yang terlibat dalam *EWT* ini diterangkan dengan terperinci manakaa hanya 14 orang pelajar **setuju** proses yang terlibat dalam *EWT* ini diterangkan dengan terperinci. *EWT* ini memberikan peluang kepada saya melihat aplikasi pendawaian satu fasa dengan jelas merupakan item kedua yang ditanyakan kepada pelajar dimana seramai 19 orang pelajar **sangat setuju** mengenai item ini dan hanya 18 orang pelajar **setuju** mengenai item ini. Seramai 25 orang pelajar **sangat setuju** mengenai item *EWT* ini dapat melatih pelajar membuat pendawaian dari satu modul ke satu modul yang lain dan hanya seramai 12 orang pelajar **setuju** dengan item ini. *EWT* ini dapat merangsang perkembangan idea dalam aplikasi sistem pendawaian merupakan item keempat yang ditanya untuk aspek kefahaman aplikasi dimana kita dapat lihat seramai 24 orang pelajar **sangat setuju** dengan item ini berbanding hanya 13 orang pelajar **setuju** dengan item ini.



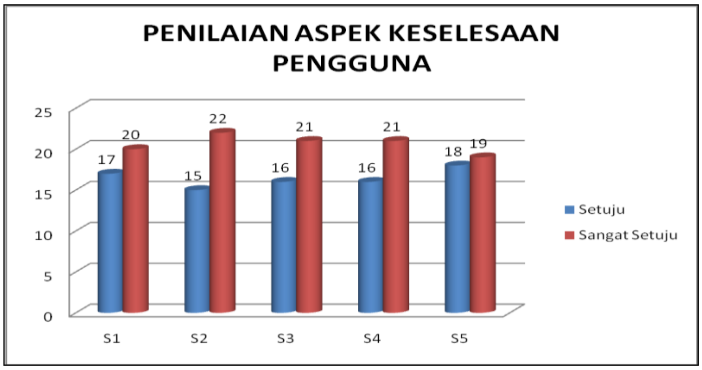
Rajah 7 : Dapatan kajian dari aspek kefahaman aplikasi

Jadual 6 merupakan soalan kajian mengenai penilaian aspek keselesaan pengguna berdasarkan kepada soalan soal selidik yang diedarkan.

No. Item	Pernyataan
1	*EWT* ini mudah digunakan
2	Saya tidak mengalami masalah semasa membuat pendawaian dan mengoperasikan *EWT* ini
3	Setiap arahan yang diberikan dalam video adalah mudah difahami untuk dilaksanakan
4	Saya tidak perlu menyediakan banyak peralatan tambahan/sampingan untuk menjalankan amali menggunakan *EWT* ini
5	Saya merasakan penggunaan *EWT* dalam proses pengajaran dan pembelajaran kursus *ET102* amat sesuai

Jadual 6b: Soalan untuk penilaian aspek keselesaan pengguna

Daripada **Rajah 8**, terdapat lima item yang ditanya untuk penilaian dari aspek keselesaan pengguna dimana item pertama adalah *EWT* ini mudah digunakan, menunjukan seramai 20 orang pelajar **sangat setuju** dengan item ini manakala 17 orang pelajar **setuju** dengan item ini. Saya tidak mengalami masalah semasa membuat pendawaian dan mengoperasikan *EWT* ini merupakan item kedua yang ditanya dan hasil dapatan menunjukkan seramai 22 orang pelajar **sangat setuju** dengan item ini dan hanya 15 orang pelajar **setuju** dengan item ini. Untuk item ketiga seramai 21 orang pelajar **sangat setuju** dan 16 orang pelajar **setuju** dengan item setiap arahan yang diberikan dalam video adalah mudah difahami untuk dilaksanakan. Saya tidak perlu menyediakan banyak peralatan tambahan/sampingan untuk menjalankan amali menggunakan *EWT* ini merupakan item keempat yang ditanya dan dapatan menunjukkan seramai 21 orang pelajar **sangat setuju** dan hanya 16 orang pelajar **setuju** dengan item ini. Item terakhir yang ditanyakan untuk aspek keselesaan pengguna adalah saya merasakan penggunaan *EWT* dalam proses pengajaran dan pembelajaran kursus *ET102* amat sesuai menunjukkan seramai 19 orang pelajar **sangat setuju** dengan item ini dan 18 orang pelajar **setuju** dengan item ini



Rajah 8 : Dapatan kajian dari aspek kefahaman keselesaan pengguna

KESIMPULAN

EWT bukan sahaja dibangunkan dengan kos yang lebih murah berbanding dengan harga pasaran malah penyediaan video interaktif telah dapat membantu meningkatkan kefahaman pelajar. Soal selidik yang dijalankan terhadap ciri-ciri sistem ini menunjukkan bahawa majoriti pelajar bersetuju bahawa rekabentuk *EWT* bersifat mesra pengguna dalam P&P kursus *ET102*. Hasil daripada analisis didapati kesemua aspek penilaian yang ditanya seperti aspek penilaian motivasi, aspek penilaian rekabantuk antaramuka, aspek penilaian kefahaman aplikasi dan aspek penilaian keselesaaan pengguna menunjukkan bahawa semua pelajar dari program DET 1C adalah bersetuju 100%. Dengan perlaksanaan inovasi ini didalam P&P, ianya telah memberi nilai tambah kepada pensyarah untuk menjadi pensyarah yang lebih kompeten selaras dengan teknologi semasa.

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Pemasangan Dan Selenggaraan Penghawa Dingin Di Kolej Kouniti Selandar Memberi Minat Dan

Kefahaman Kepada Pelajar Diploma Kejuruteraan Elektrik Dalam Kursus Selenggara Kejuruteraan

Elektrik (E4101) Di Politeknik Merlimau

The Dielectric Impact Study on Building Material during Signal Penetration

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Abstract: The widespread use of wireless gadget is a recent phenomenon. The strength of the signal receives inside any building by wireless applications users may vary depending on many factors included the materials usage. This paper reports on the experimental performed by measuring the signal strength within the frequency range of 800MHz to 900MHz in the anechoic chamber to determine the dielectric impact study on building materials during signal penetration. The result indicates that there were the significant on dielectric impacts on signal penetration into building depending on the materials usage.

Introduction

The usage of wireless appliances increase in every years where widespread success of cellular has led to the development of newer wireless systems and standards for many types of telecommunications traffic. However there will be several problems faced upon the user due to some circumstances for an example when we were out of coverage [14][15].

Signal propagate

This matter can be considered on lots of factor contributed on. One of them relates on the availabilities for signal during penetration process from base station to the mobile phone, where the location of the user was inside a building. This study will consider the electromagnetic wave travels uniformly from the signal source, and then considered there were no signals losses due to any opaque blockage or disturbances during propagate, ended with penetration building materials before reach the mobile user.

Dielectric Material

There is lots of material type in our surrounding. Insulator, Semiconductor and Conductor are categorized, refer to the ability of electrons travel through it. Dielectric considered as poor in conduction current but excellent in storing energy which useful in some electronic component such as capacitor [16]. The result of this study will determine the impact of those selected materials in Figure 3.0 during signal penetration which focuses on their availability. The term availability refers to the blockage or opaque, highly pertinent which becomes one of the factors. This have been clarified by previous research [1] the quality of signal received inside any building by mobile users may vary depending on different parameters and characteristics of the materials used. Regarding to the statement, the dielectric impact study on building material during signal penetration discussed in this paper.

Literature Review

There were a studied before which determined on walls and obstacles made of different be in the range of 15 to 27dB, depending on the building construction while, previous researcher [1] conducted the investigation on Electromagnetic Propagation into Reinforced-Concrete Walls which focused on t the electromagnetic properties of the building walls in terms of the transmission and reflection. The signal penetrate through the building by the window area is approximately 6dB [2]. However, during the experiment was proposed, there are no related study conducted in Malaysia. This paper reports on the experimental performed by measuring the signal strength within the frequency range of 800MHz to 900MHz in an anechoic chamber to determine the dielectric impact study on building materials during signal penetration.

Measurement setup

There were several tasks have been considered in achieving the specification planned. RF propagation concept is chosen in this study where signal generator becomes the sources of signal used. It will converts an electrical signal to an electromagnetic wave that radiates by the antenna at 872.0125 to 904.9875MHz, then receives antenna detect these waves and translate them back to the original message sent by the spectrum analyser. On-going trough this study, the quiet environment came from self-anechoic chamber also have been doing where the 'free space' technique that provides information on amplitude and phase of the transmission coefficient by referring from the recent researcher [3] is considered. A IFR 3413 250kHz~3GHz signal generator is used to generate FM signal in 900MHz frequency range at -30dB by applying helical antenna in directional radiation pattern radiate transmitting signal. At the receiving end, the antenna will pick up the desire signal then convert the analogue form to digital. Then 8549E Agilent spectrum analyser will compute for data acquisition.

Fig 1: Measurement system: Signal Generator, Spectrum Analyses, Antennas, and Transmission Lines.

Some propagation mechanisms such as reflection, diffraction, scattering, and absorption of electromagnetic waves have been considered in designing all methods described already discuss in previous study on Signal Strength Loss Study towards Building Materials. The application from the electromagnetic wave propagation concept will shows how signal travel (mobile signal) and penetrate. Therefore, the materials used for building construction become the main element to be research which focused on percentage of signal penetrates trough the MUT during the propagation towards selected materials by considering the impact on dielectric materials. The material under test (MUT) with rectangular shape placed at the centre of anechoic chamber, between receiving and transmitting antenna, about 50cm distance to each other. Before that, near field condition is satisfied. Table 1.0 shows the types of material used in this study. In observing the measurement result, 2 or 3 samples have been used to get the variation of the data among the inhomogeneous composition of the material.

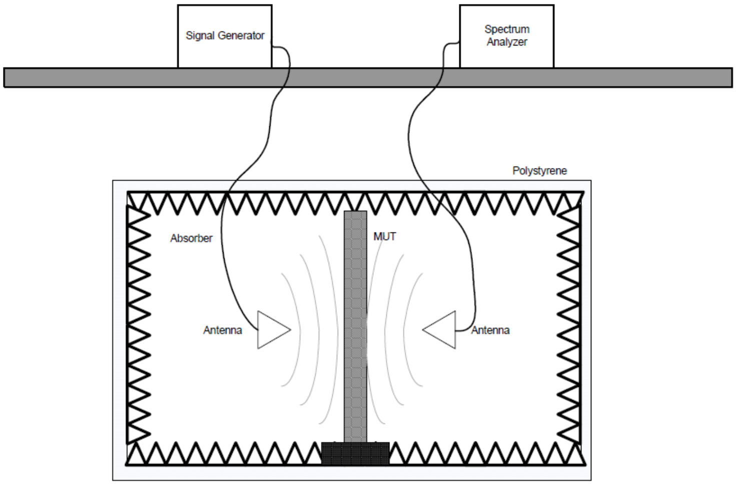

Fig. 2: measurement setup inside an anechoic chamber

Building Material

There are many building materials in our surrounding can considered. A dielectric material is a substance that is a poor conductor of electricity, but efficient supporters of electrostatic fields [6]. All of the materials consist of their own permittivity, skin depth, permeability and conductivity [4]. The specific materials used in this experiment are divided into three categories:

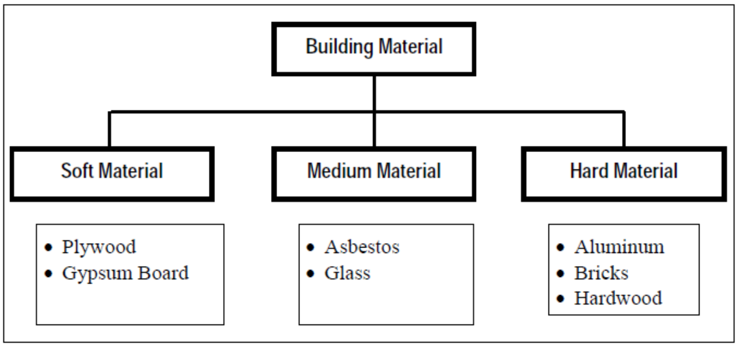

Fig.3: Material Categorization

Item	Produced material by
Plywood	Thin layer from piled of wood [7]
Gypsum Board	Fiber glass [8]
Asbestos	Several minerals clotted together which comes from soil and rock [9]
Glass	Liquid sand [10]
Aluminium	Extracted Bauxite will produce alumina then by combining carbon use an electricity results the liquid aluminium [11]
Bricks	Clay consists of: minerals inside rock are quartz, mica, Calcium Carbonate and Iron Oxide [12]
Hardwood	Original from trees such as *Balau*,

Table 1.0: Type of Materials and the fact on how they are produce by.

Experimental Result

The experiment has been done in order to examine the dielectric impact on building material during signal penetration. Figure 4 shows signal penetration towards materials.

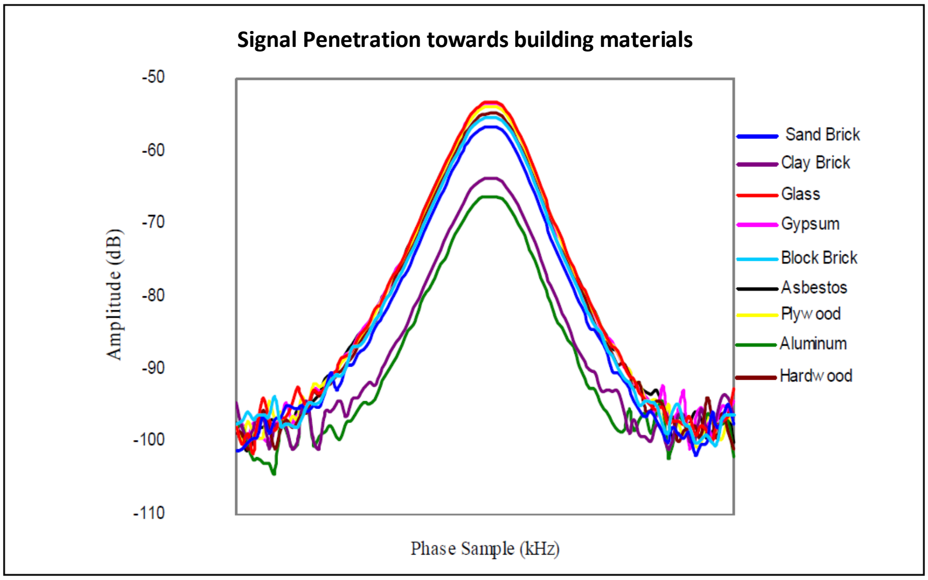

Fig 4: Signal penetration towards materials

The experiment resulted; signal propagated towards aluminium mostly will reflect back, which caused decrement of the signal at receiver. The experiment prove that the conductor such as aluminium have ability in reflecting signal. Aluminium is categorized as conductor material compared to others. This can be determine by an observation done by researcher [13] where the most metals are not magnetize able will have $\mu_r \sim 1$ while other materials are explained in below tables.

Conductor	σ_r	μ_r
Silver	1.05	1
Copper-annealed	1.00	1
Gold	0.70	1
Aluminum	0.61	1
Brass	0.26	1
Nickel	0.20	1
Bronze	0.18	1
Tin	0.15	1
Steel (SAE 1045)	0.10	2000
Lead	0.08	1
Monel	0.04	1
Stainless steel (430)	0.02	500
Zinc	0.29	1
Iron	0.17	1000
Beryllium	0.10	1
Mumetal (at 1 kHz)	0.03	30,000
Permalloy (at 1 kHz)	0.03	80,000

(a)

Material	ε_r
Air	1.0
Polyethylene foam	1.6
Cellular polyethylene	1.8
Teflon	2.1
Polyethylene	2.3
Polystyrene	2.5
Nylon	3.0
Silicon rubber	3.1
Polyvinyl chloride (PVC)	3.5
Epoxy resin	3.6
Quartz (fused)	3.8
Epoxy glass (printed circuit substrate)	4.7
Bakelite	4.9
Glass (pyrex)	5.0
Mylar	5.0
Porcelain	6.0
Neoprene	6.7
Polyurethane	7.0
Silicon	12.0

(b)

Table 2.0 a) Relative Permeability and Conductivities and b) Relative Permittivity of Various Dielectric [13]

The structure and composition of building materials become one of the most important characteristic in prevail good signal penetration towards them [5]. This can be prove regarding to both previous experiments show that different materials have been used for making bricks. In determining the homogeneity of materials, the experiment has been done in two ways standing; horizontal and vertical. For clay brick, most of the composition contains of clays and shale; while sand, cement and some shale contained in sand brick and hollow structure. Commonly, clay brick have good structure rather than sand bricks and hollow block, which effect of these materials in penetrating signal.

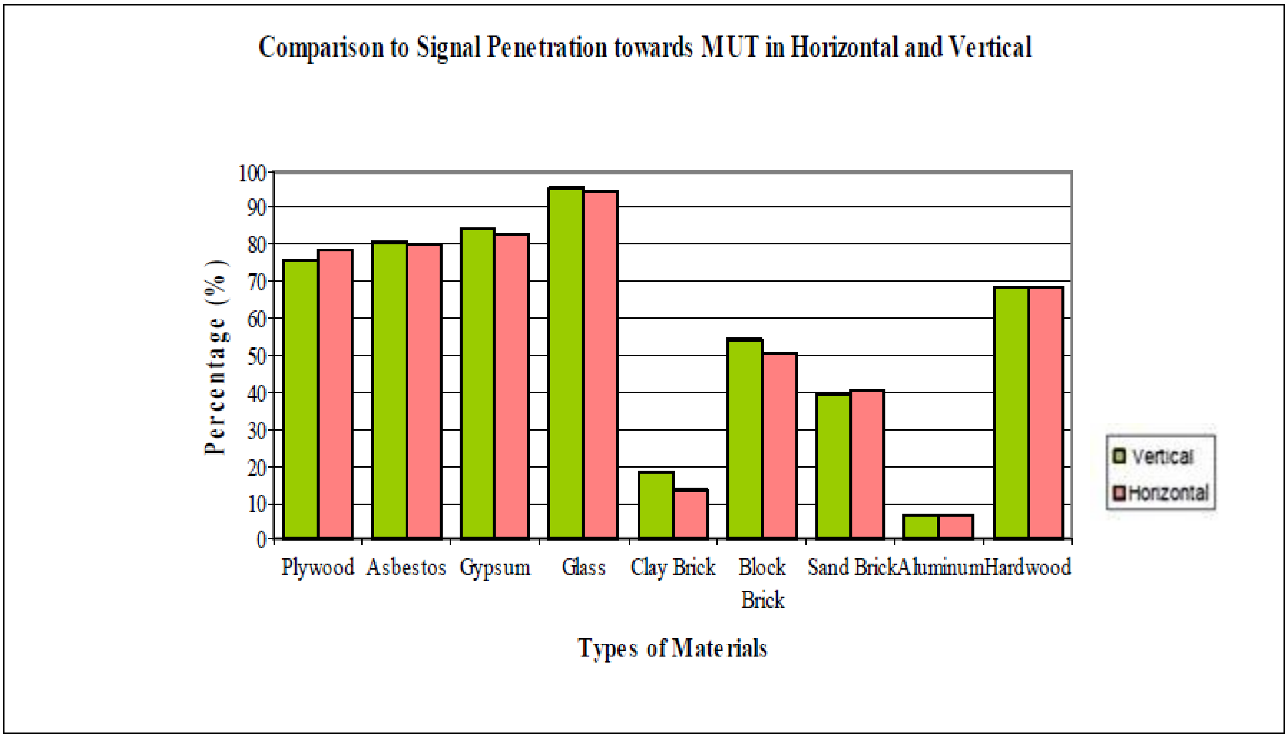

Fig 5: Comparison to Signal Penetration towards MUT in Horizontal and Vertical

5.0 Conclusion

In future, the strengthen of the signal inside building by considering the materials will be the one of main element that must be satisfied before construction process. This is important due to the widely used and rapidly increasing year by year. Every material has their own dielectric parameters, which used to determine transmission and reflection coefficients of the parameter depends on the types of materials usage, frequency range and environmental conditions such as temperature and moisture content. High- Frequency measurement such as Scanning Electron Microscope (SEM), Transmission Electron Microscope (TEM) and static resistance measurements have to carry out to clarify materials characteristics in terms of resistivity and permittivity [17].

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The Effect of Using Different Carbon Sources of Glucose and Sucrose an the Growth of *Pluerotus sajor caju*

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Keywords: *Pleurotus sajor caju*, biomass, carbon source and fungi

Abstract. An experiment was conducted to study the effect of different carbon sources towards the growth of *Pleurotus sajor caju*. In this study glucose and sucrose was used as comparison of carbon sources. Both fungi were harvested at day 7, 9, 11, 13 and 15. The results indicated *Pleurotus sajor caju* used both carbon sources efficiently. The highest biomass is obtained at day 15 when glucose was added as carbon sources (9.715/ 200 ml) compared to sucrose as carbon sources (6.550/ 200 ml). These results showed *Pleurotus sajor caju* growth more efficiently in glucose.

Abstrak. Ujikaji telah dijalankan untuk mengkaji kesan penggunaan sumber karbon yang berbeza keatas pertumbuhan *Pleurotus sajor caju*. Pertumbuhan fungi adalah dijana daripada sumber karbon yang bertindak sebagai sumber tenaga dan sumber makanannya. Dalam penyelidikan ini glukosa dan sukrosa telah digunakan sebagai perbandingan sumber karbon. Kedua-dua fungi telah dituai pada hari ke- 7, 9, 11, 13 dan 15. Hasil kajian menunjukan pertumbuhan *Pleurotus sajor caju* menggunakan kedua-dua sumber karbon secara efisien. Penghasilan biojisim tertinggi diperolehi pada hari ke 15 apabila glukosa digunakan sebagai sumber karbon (9.715/ 200 ml) berbanding menggunakan sukrosa sebagai sumber karbon (6.550/ 200 ml). Keputusan ini menunjukkan, *Pleurotus sajor caju* hidup lebih efisien apabila glukosa digunakan sebagai sumber karbon.

Introduction

Mushrooms have been used for their beneficial properties for over 2000 years. This includes studies that suggest an important therapeutic role in cancer and other diseases. Mushroom is good source of protein, vitamins and minerals. Some types of mushrooms even contain significant amount of vitamin C. Its also contain minerals such as potassium, phosphorus, calcium, magnesium, copper and iron, but low in calcium [2]. *Pleurotus* species are universally known as oyster mushrooms and consists of 40 species. Oyster mushrooms are now ranking as second among the important cultivated mushrooms in the world [4]. *Pleurotus sajor caju* is easily cultivated and cultured in tropical regions and other parts of the world. The mushroom is also reported to possess distinctive nutritional and medicinal values, palatial and with its characteristic aroma [9]. The mushrooms are recomanded as an ideal food to be consumed for dietary prevention of atherosclerosis due to its low fat and high fibres content [9].

In commercial production of these mushrooms, some intricate scientific steps need to be taken into measure to culture the edible mushrooms. This often prevented interested persons to produce it commercially [10]. Besides, mycelium production has been described as one of the limiting factor in mushroom cultivation all over the world [11]. Poppe [12] reported that suitable culture media influenced mushroom. The growth of mushrooms also depends on available nutrients, pH, microbial activities, aeration, water content or free water activity. Thus, this preliminary research has been done to investigate the effects of using different carbon sources of glucose and sucrose on the growth of *Pleurotus sajor caju*.

Methodology

Sample The mycelium of *Pleurotus sajor caju* was obtained from Mushroom Lab, Genetic Program, Centre of Bioscience and Biotechnology research, Universiti Kebangsaan Malaysia. The spawn was the sub-cultured onto petri dishes contained Potato Dextrose Agar (PDA) for future usage.

Preparation of PDA PDA plate was prepared by adding 3.9g of Potato Dextrose Agar (PDA) powder and 0.1 g of yeast extract into 1000ml distilled water. The mixture was then stirred using magnetic bar to dissolve thoroughly. The broth is then autoclaved at 121^oC for 15minutes. The broth is allowed to cooled about 45^oC, followed by dispensed into petri dishes.

Subculture on PDA Mycelium from the stock was punched by using 8mm holes puncture and cultured onto the PDA. The culture was then incubated at room temperature 28±2°C. The culture was used as a spawn and the growth of mycelium in Yeast Peptone Growth (YPG) liquid media is observed.

Growth of mycelium on PDA Growth of mycelium colony was determined by measuring the diameter of mycelium colony on PDA. The diameter was measured twice every five days, start from day 0, 5, 10, 15 and 20 after the subculturing process.

Preparation of growth medium using different carbon source 1.0L of YPG medium was used which contained 20g carbon source; glucose or sucrose, 1g peptone, 5.0 grams $(NH_4)_2SO_4$, 1g KH_2PO_4, 0.5g $MgSO_4.7H_2O$, 1.0g NaCl and 0.1g $CaCl•2H_20$. pH of the medium was adjusted to 4.5 and followed by autoclaving at 121ºC for 20 minutes. An amount of 200mL YPG medium was used in determining the rate of mycelium growth. Eight inoculums were used to determine the growth of mycelium and were shake at 200rpm, 30ºC. The rate of mycelium growth was determined at day 0, 7, 9, 11, 13, and 15 after inoculation. Mycelium was filtered using sterile white cloth, and dried overnight. The dry weight of mycelium was taken in the following day.

Results and Discussion

Carbon supply is very essential in providing the energy needed by the cells. Carbon helps in promoting the synthesis of cells components such as protein, nucleic acid and cell wall. Other than that, the content of carbon contributes significant amount of cell weight at approximately 40-50% of mycelium and the highest percentage of carbon is found in the component of cell wall as carbon helps in the development of cellulose and chitosan of mycelium.

Mycelium can obtained carbon from various sources such as sugar and alcohol [6]. However, carbohydrate is the best source and few examples of carbon sources from carbohydrates are glucose, fructose, lactose and sucrose. In this preliminary work, sucrose and glucose have been used in order to investigate the effects of these carbon sources on the growth of *Pleurotus sajor caju*.

From the result obtained, the biomass of mycelium is higher in YPG media containing glucose as shown in Table 1 and Figure 1. This could be due to glucose is a monosaccharide and a universal monomer of carbohydrate that can be found abundantly in nature; in contrary to sucrose; which is a disaccharide. This findings is similar as reported by Kibar and Peksen, 2011 where sucrose is a very poor carbon source for growth of *Pleurotus* compared to fructose and glucose [7].

Table 1: The production of *Pleurotus sajor caju* mycelium biomass by using two different carbon sources of glucose and sucrose in YDP medium

DAY	BIOMASS OF MYCELIUM	
	YPG MEDIUM WITH GLUCOSE (g)	**YPG MEDIUM WTH SUCROSE(g)**
0	0	0
7	3.000	0.680
9	7.835	4.250
11	8.700	5.580
13	9.035	6.150
15	9.715	6.550

Moreover, research has been done by Barakat and Sadik shows that β-glucan; one example of carbohydrates can be found in the cell wall of fungi and has the ability to uptake glucose more efficiently [1]. Other research done by Wang et al., 2012, also stated that glucose is a suitable source of carbon for mycelium growth in majority of mushrooms [13]. The findings in this preliminary study is also correlates to the finding by Cheng et al., 2013, which stated that mycelia digest a simple carbon source more easily than complex carbon source [3].

Studies done by Nwokoye et al., 2010 [8] also proved that glucose was the most utilized carbon sources and significantly enhanced mycelial growth of *Pleurotus* compared to other sugar such as lactose, fructose, maltose and sucrose. This may due to the ease of metabolizing this sugar over other carbon sources[8].

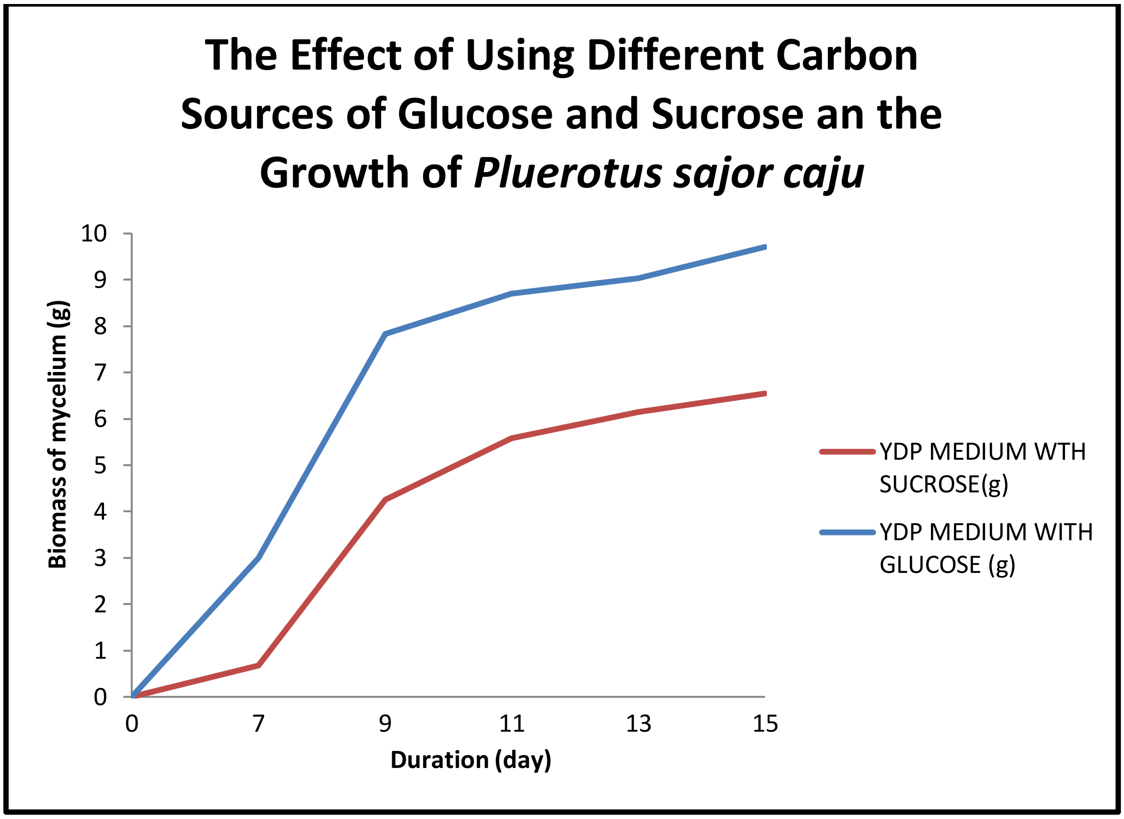

Figure 1: The production of *Pleurotus sajor caju* mycelium by using two different carbon sources of glucose and sucrose in YDP medium.

However, further observation on other factors need to be carried out. High concentration of yeast may inhibit the consumption of carbon and cause reduction of metabolites. Other than that, the ability of using different carbon sources may be differed in different *Pluerotus* the species, and other isolates of *Pluerotus* species may indicate different findings [8]. The effects of using single carbon sources of glucose on the growth of *Pluerotus sajor caju* should be continued to further invistage in details. A research done by Barakat and Sadik, 2014 on *Pleurotus ostreatus* shows that glucose-containing media as the carbon source also enhanced the antioxidant activity of crude exopolysaccharide [1].

Conclusion

Glucose and sucrose are both suitable to be used as the carbon supply for the growth of *Pleurotus sajor caju* mycelium. However, the usage of glucose as the carbon supply shows more significant effect on the growth of *Pleurotus sajor caju* mycelium (9.715g) in 15 days compared to sucrose (6.550g). Thus, in order to grow *Pleurotus sajor caju* more efficiently in laboratory, Futher investigation on the effect of glucose on *Pleurotus sajor caju* mycelium may give depth understanding of its functions

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“Sorry, but I don’t agree with you”: A discourse analysis on disagreement

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Keywords: face, face-threatening, disagreement, Brown and Levinson’s Politeness Framework, Malaysian English speakers

Abstract: This paper looks at the ways in which Malaysian English speakers express disagreement. Disagreement is a necessary communicative function in daily life. Disagreement is interesting to study because disagreement is face-threatening and can potentially cause harm to relationships. It is even more fascinating to research disagreement in the Asian and particularly the Malaysian context where ‘face’ or ‘air muka’ is of high priority. This particular study uses a fully qualitative approach. Six sets of small group casual conversations in English among Malaysians undergraduates in several local institutions of higher learning were recorded and transcribed. Each set of conversation contains three to four participants. Then, the transcribed conversations were chunked into episodes for ease of analysis and were analysed using the Brown and Levinson’s Politeness Framework (1983). It was found that the most common ways of expressing disagreement are the use of hedges, questions, repetition and suggestions. In other words, the Malaysian English speakers in this study preferred to express their disagreement in indirect ways. This has great implications for the English Language classroom in Malaysia, particularly when teaching students the communicative function of disagreeing. Furthermore, students with a weak command of the English Language will be far less likely to have a strong understanding and grasp of the nuances and pragmatic use of the English Language.

Introduction

Language has always been a necessary component of human communication. There are as many as more than six thousand languages in this world, as different communities and societies develop their respective languages. Anyone who does comparative studies of different languages will always discover the huge influence that culture has on the way a language develops as well as the way a language is used in real life. In the western culture, for example, if a person who is offered a drink declines the offer, the host will not repeat the offer as the common cultural understanding is that a *“No, thank you”* literally means *“No, thank you. I really don’t want a drink”*. However, in the Asian culture, it is generally considered rude to accept the host’s first offer of a drink. The common cultural expectation is that the visitor will say something to the effect of *“No, please don’t trouble yourself”* during the first offer, and the host will respond by repeating the offer of a drink, after which the visitor can accept the host’s offer.

This simple comparison alone reveals the different cultural expectations and 'unspoken rules' in various communities, which have an effect on the way language is used in life. One vital aspect of culture is the whole notion of politeness, which is important because human beings have an inherent need to preserve their relationships with each other. Hence, all cultures are concerned with 'saving face'; although the specific interpretations, manifestations and application of face maintenance differ from culture to culture.

In the Asian context, it seems that face maintenance is very intricately linked to social hierarchy and communal needs, instead of individual needs. Nakane (1967, 1970 in Matsumoto, 1988) [1] noted that politeness in the Japanese context is very much affected by the fact that the Japanese society is a vertical society. Nakane also described the 'ba' (frame) concept, whereby "belonging and fitting in" is more important in the Japanese society than "preserving one's own territory". This is echoed by Hwang (1990) [2], who observed that the Korean society has distinct social hierarchical structures. Gu (1990) [3], explained the face maintenance manifestation in the Chinese context; where 'face' or 'limao' is derived from "denigrating self and respecting other". In the local context, Jamaliah Mohd Ali (1991) [4] discovered in her study that Malay employees preferred to channel their grievances through a 'wakil' (spokesperson) instead of doing it themselves. Lee (1996) [5] found that Malaysians in general would "refrain from criticizing or embarrassing their peers in front of others as it would mean a loss of 'face' ".

This brings us to an important question: How do Malaysians communicate potentially face-threatening messages such as disagreement?

Problem Statement

In the Malaysian context whereby the English Language, the international language is being taught as the second language, what would be the result of the 'clash of cultures' when Malaysians communicate in English? As I have explained in the Introduction, face maintenance has different interpretations and manifests itself differently, depending on the culture of a particular society or community. In a context where indirectness is the general cultural norm and expectation, how do Malaysians express their disagreements when they communicate in the English Language; a language whose original culture differs from the Malaysian culture?

Besides that, what would be the 'right' linguistic structures for English Language teachers to teach to our second language learners with regards to expressing disagreement, particularly learners who have weak proficiency and hence are not adept in mastering the nuances of the English Language?

Research Question

The research question that this paper seeks to answer is:

How do the Malaysian English speakers express their disagreement?

Methodology

Six sets of casual conversation in English among Malaysians who are very fluent and proficient in the English Language were taped using an MP3 recorder. All six sets comprised different individuals. Within each set, the participants were good friends with one another. The participants in the conversations were undergraduates aged 18 to 25 from several local tertiary institutions in Malaysia.The conversations were not scripted at all. There were no pre-determined topics of conversations. As for the researcher (me), I used the non-participant observation method which means I was present at the conversations but had minimal participation in the conversation.

The conversations were then transcribed according to the transcription conventions of Eggins & Slade (1997:2-4) [6], with some adaptations to tailor it to the Malaysian context and to the suitability of this particular study. Then, the transcriptions were chunked into episodes for ease of analysis. The transcriptions were divided into several episodes using the topic of conversation as the basis of chunking. The chunked transcriptions were then analysed using Brown & Levinson's Politeness Framework [6] and special attention was given to the linguistic features that were salient.

Findings & Discussion

From the transcriptions, I found that participants in the conversation displayed a high tendency to express their disagreement indirectly instead of directly. Table 1 below shows the indirect ways (linguistic structures) used by participants when they expressed their disagreements:

Indirect Ways of Expressing Disagreement	**Total Frequency of Occurrences**
Hedging	111
Questioning	108
Repeating	30
Suggesting	26

Table 1: Indirect ways (linguistic structures) used by participants to express disagreement

Indirect Way of Expressing Disagreement 1: Hedging

The hedging manifested in several linguistic structures:

- The lexical hedge: coordinating conjunction "but"
  E.g.: *"Yeah, obviously I can* *<u>but</u>* *I already signed the contract"*
  (Line 136, Transcription A, Episode 3)
- The lexical hedge: adverbs "probably", "maybe", "quite"
  E.g.: *"= = I ... <u>Maybe</u> I'm I'm used to seeing his old hair."*
  (Line 374, Transcription E, Episode 1)
- Phrasal hedges with cognitive verbs
  These hedges modify the entire sentence or proposition that follows. The phrasal hedges that were used by the participants in this study include:
  a) "I think" and its variations ("I thought", "I don't think")
     E.g.: *"The length <u>I think</u> is around the equivalent to the size of a toilet"*
     (Line 203, Transcription A, Episode 3)
  b) "I don't know"
     E.g.: *"<u>I don't know!</u> I'm just throwing some random thoughts."*
     (Line 210, Transcription D, Episode 4)
  c) "I mean"
     E.g.: *"You want to get the silver thingy… <u>I mean</u> can lah…"*
     (Line 163-165, Transcription D, Episode 3)

Indirect Way of Expressing Disagreement 2: Questioning

The participants in this study were found to use two forms of questioning as a way of expressing their disagreement indirectly.

a) Wh-interrogatives
   E.g.: *"Malaysia <u>why not</u>?"*
   (Line 478, Transcription E, Episode 4)
b) Tag questions
   E.g.: *"I I I haven't tried hitting on you <u>right?</u>"*
   (Line 108, Transcription A, Episode 2)

Indirect Way of Expressing Disagreement 3: Repeating

The repetitions occurred in two forms:

a) Lexical Repetition
b) Semantic Repetition

Example of repetition as a strategy to express disagreement indirectly:

Line 0523 S2 *We just met, we just knew each other for one week*

Line 0524 S1 *I… I can't even recall how how she looks like you know*

Line 0525 S2 *Japanese a bit*

Line 0526 S1 *No memory of = = how she looks like*

(Transcription A, Episode 7)

Indirect Way of Expressing Disagreement 4: Suggesting

The participants in this study used the suggestion strategy to indirectly express their disagreement with their friends. The suggestions occurred in the forms of:

a) Interrogative structure
   E.g.: *"No lah, you check lah, maybe your block got one"*
   (Line 0547, Transcription E, Episode 4)

b) Imperative structure
   E.g.: *"Why don't we just buy cloth and the silver thing lah?"*
   (Line 0166, Transcription D, Episode 3)

Across all the six sets of transcriptions, not many instances of direct disagreement such as "I disagree with you", "No that's wrong", "I don't agree with you" were found. Instead, most of the time, whenever the participants expressed their disagreement, they did it indirectly using the various strategies that are listed in this section. The indirect strategies of expressing disagreement helped to soften the unpleasant impact of their disagreement. The indirect ways also allowed the speaker to insist on his / her own ideas (which are different from the hearer) without causing discomfort or conflict between the interlocutors. This finding indicates that Malaysians prefer to communicate unpleasant messages using indirect ways rather than in a direct manner. This could be due to the unspoken cultural expectation that Asians / Malaysians must always maintain good relationships with one another, and one must never embarrass others.

Conclusion

The findings of this study reveal to us that Malaysians prefer to communicate unpleasant messages using indirect ways rather than doing so in a direct manner. Disagreeing indirectly maintains the existing social harmony and good relationships, which are highly valued in our Malaysian society. Expressing disagreement indirectly also prevents any embarrassment and loss of face, which is commonly, termed 'muka' in the Malay Language.

The study has important pedagogical implications, especially in the Malaysian ELT classroom where the teaching of communicative skills is emphasized. This study indicates to us that in the teaching of communicative skills to our students, we must equip our students to be savvy with the various linguistic structures: what are the structures, the various uses of the structures, and most importantly the appropriate situations to use the different linguistic structures. This is extremely relevant to the Malaysian polytechnic context, particularly in the teaching of the compulsory DUE1012 Communicative English I module where one of the three topics is *Oral Communication.* Specifically, the findings of this study is directly relevant to one of the subtopic of Oral Communication, which is *1.1.4 (Agree and disagree to suggestions courteously).* Hence, it is the researcher's hope that polytechnic lecturers, specifically English Language lecturers will benefit from the findings of this study.

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BIODEGRADABLE BIOCOMPOSITE STARCH BASED FILMS BLENDED WITH CHITOSAN AND WHEY PROTEIN: PREPARATION AND CHARACTERIZATION

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Keywords: *Biodegradable, Blend films, Starch, Chitosan, Whey* protein

Abstract. The use of synthetic plastic materials as a food packaging causes serious hazards to the environment. The introduction of biodegradable materials, which can be disposed directly into the soil, can be one possible solution to this problem. The objectives of this study were to produce biodegradable biocomposite films and study the characterization of starch-based films blended with chitosan and whey protein. The films were synthesized by using the mixing process and the casting method. The characteristics of the blend films with different tapioca starch composition (1, 2, 3, 4 and 5 g/100 mL) were evaluated using Universal Testing Machine and biodegradability using soil burial degradation test. Among them, the biodegradable blend films compatibilized with 1 percent of tapioca starch content showed good mechanical properties. In soil burial test, a rapid degradation occurred for all the films in the initial 10 days followed by 100% composting within 18 days. These results indicated that the blended film from starch, chitosan and whey protein had potential application in future to be used as food packaging because it can improved foods quality and at the same time conserve the environment.

Introduction

Nowadays, million tons of plastic are produced annually all over the world. The production and consumption continue to increase each year. It plays a significant role in our daily life and has become a widely used material due to its wide array of applications particularly as packaging materials. Petrochemical based plastics such as polyolefin, polyesters and polymides have been increasingly used as packaging materials because of their availability in large quantities at low cost and favorable functionality characteristics such as good tensile and tear strength, good barrier properties to oxygen and aroma compounds and heat seal ability. However, these plastics are made of petroleum-based materials that are not readily biodegradable and therefore lead to environmental pollution, which pose serious ecological problem [1]. The most obvious form of pollution associated with plastic packaging is waste plastic dump to the landfills. Plastics are very stable and therefore settle in the environment in prolong time after been discarded, especially if they are shielded from direct sunlight by being buried in landfills. It can leach harmful chemicals that eventually spread into groundwater sources which may cause numerous illnesses to human health.

In order to overcome these problems, several studies are concentrated on the development of new biodegradable packing materials that can be manufactured with the utilization of environmentally friendly raw materials. Among the natural polymers, starch has been considered as one of the most promising candidates for future materials because of its attractive combination of price, abundance, and renewable in addition to biodegradability. Starch naturally occurs in a variety of botanical sources such as wheat, corn, yam, potatoes and tapioca [10]. The preponderance of amylose in starch increases the strength of the films. However, biodegradable products based on starch, possess many disadvantages, mainly attributed to the water solubility, brittle nature of starch films and poor mechanical properties. Therefore, it needs to be treated first by either plasticization or blending with other materials. Plasticizers are added to polymers to reduce brittleness, since they work as spacers polymer chains, decreasing inter-molecular forces and thus increasing flexibility and extensibility of polymers. They must be compatible with the film forming polymers [13]. Common plasticizers for starch are glycerol and other low-molecular-weight-polyhydroxy-compounds, polyethers and urea. Glycerol was the most suitable plasticizer with respect to mechanical properties and transparency. Moreover, one of the effective strategies to overcome the poor mechanical properties of starch based films, while preserving the biodegradability of the material, is to associate starch with chitosan. Chitosan, a 1,4 linked-2-deoxy-2-aminoglucose, prepared by *N*-deacetylation of chitin [11]. It is relatively low cost, widespread availability from a stable renewable source, that is, shellfish waste of the sea food industry [3] and appears as a natural antimicrobial candidate for the incorporation because it can inhibit the growth of a wide variety of fungi, yeasts and bacteria [10].

Whey protein is the collection of globular proteins isolated from whey, a by-product of cheese manufactured from cow's milk. It can be used for production of biodegradable films. Whey protein films have low tensile strength and high water vapor permeability due to the high proportion of hydrophilic amino acid in their structures [5]. According to previous research [2], these films were found to retard moisture loss and oxygen diffusion. It also showed good tensile strength and moderate elongation. The films had apparently no flavor or taste that interfered with those of the food. The films also have excellent mechanical and barrier properties.

Hence, the objective of this study was to prepare biodegradable blend films from starch-chitosan-whey protein and to evaluate their mechanical properties and biodegradability. The method applied to produce starch-chitosan-whey protein blend films is by using casting technique.

Methodology

Materials. Tapioca starch (Bunga Merah Brand) used was obtained from local supermarket. Chitosan (84% deacetylated) was purchased from R&M Chemicals, Essex, U.K and whey protein isolates were obtained from Ultimate Nutrition, Inc, Farmington, USA. Glycerol and acetic acid were purchased from Systerm. The soils for the soil burial test were taken from the field nearby the polytechnic campus.

Film Preparation. Tapioca starch was dissolved in distilled water at concentration of 1, 2, 3, 4, and 5 g/ 100 mL by heating the mixtures on hot plate and stirred until it gelatinized at temperature of 85 ± 2°C for about 5-15 minutes. The chitosan solution was prepared by dispersing 20 g of chitosan in 1000 mL of acetic acid (1% v/v) and stirred overnight until it completely dissolved. Whey protein isolates (WPI) solution was prepared by dissolving 10 g of WPI in 100 mL distilled water. The solution was heated to 90 ± 2°C for 15-30 minutes while stirring continuously to denature the whey protein. A series of starch-chitosan-WPI blend were prepared by mixing 100 mL of the starch solution (1, 2, 3, 4, and 5 g/ 100 mL) with 100 mL of the chitosan solution (2 g/100 mL) and 100 mL of the whey protein solution (10 g/100 mL). The solutions were mixed by gentle stirring with a magnetic stir bar until the solution becomes homogenized. Glycerol was added as 40% (w/w) of the total solid weight in the blend solutions. The resulting solutions were degassed for several hours. Then, the solutions were poured and casted onto flat, levelled, non-stick glass trays and leaved it in the oven at 55°C for 10 h undisturbed. After the film was completely dried, the film then been peeled off from the glass plate. Film thickness was controlled by consistently casting the same amount (250 mL) of film-forming solution.

Mechanical Properties. The mechanical tests were performed using a Universal Testing Machine brand Shimadzu, fitted with 5kN static load cell. The films were cut into dumbbell shape with 12.5 mm wide and 16.5 mm long. The tensile properties were measured at a crosshead speed of 5 mm/min and an initial grip separation of 115 mm.

Soil Burial Degradation Test. Soil burial degradation was performed as described by [12] with a slight modification. The garden pots with a medium size were filled with soil taken from a field around Politeknik Nilai (PNS). The biodegradable blend films were cut into 2.5 cm x 2.5 cm pieces and buried in the soil at the depth 5 cm. The pots were placed in an uncovered placed. The soil was kept moist by sprinkling water at regular time interval to maintain the humidity. The excess water was drained through the hole at the bottom of the pot. The degradation of the specimen was determined at a regular time interval (3 days) by taking the specimen carefully from the soil and washing it gently with distilled water to remove the soil. The specimen was dried in an oven until constant weight was obtained. Weight losses of the specimens with time were used to indicate the degradation rate in the soil burial test.

Results and Discussion

Mechanical Properties. The tensile strength (A) and elongation at break (B) of the starch film (control film) and starch-chitosan-WPI films (biodegradable blend films) with different starch contents were shown in Figure 1. The tensile strength provides a measure of film strength, whereas the elongation to break is an indicator of the flexibility of the materials [9]. From Figure 1(A), the result shows that the tensile strength values of the biodegradable blend films are much higher compared to the control film and the maximum tensile strength of biodegradable blend films occurred at 1 percent of starch content. However, as the tapioca starch content was increased, the tensile strength of the biodegradable blend films decreased. The decrease in tensile strength with increasing tapioca starch content may occur due to formation of intra-molecular hydrogen bonds rather than inter-molecular hydrogen bonds, resulting in a phase separation between the tapioca starch, chitosan and whey protein [11].

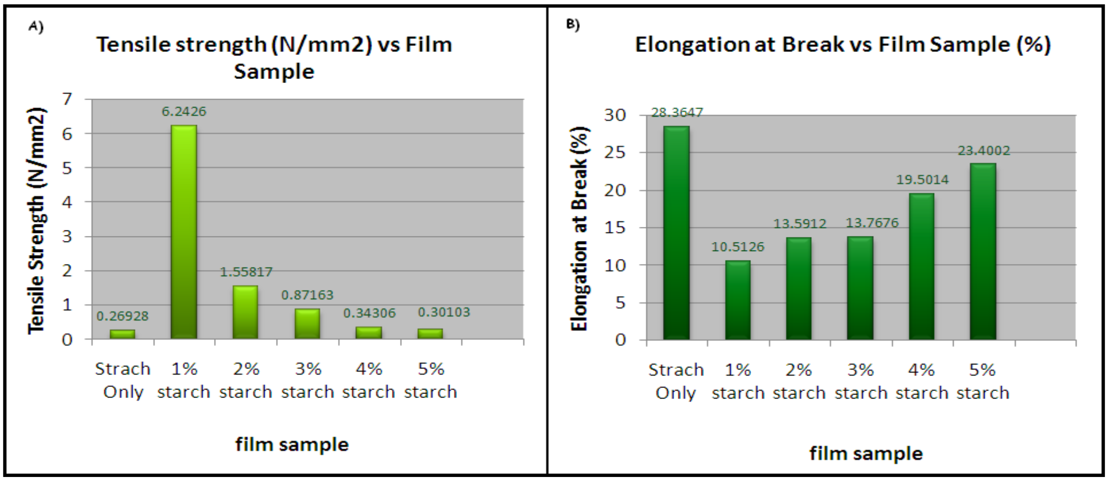

Figure 1: Tensile strength (A) and elongation at break (B) for starch film and biodegradable blend

films with different starch contents.

The highest tensile strength value of biodegradable blend film at 1 percent of starch content was attributable to a high formation of inter-molecular hydrogen bonding between NH_3^+ of the chitosan backbone and OH- of the starch. The amino group (NH_2) of chitosan were protonated to NH_3^+ in the acetic acid solution, whereas the ordered crystalline structured of starch molecules were destroyed with the gelatinization process, resulting in the OH- groups being exposed to readily form hydrogen bonds with NH_3^+ of the chitosan [3, 11]. The number of NH_3^+ groups decreased with increased starched content in film-forming solution. As the tapioca starch content increased, the amount of glycerol also increased since the total solid content increased. According to previous report [4], it was considered that the addition of glycerol resulted in the excessive disruption of hydrogen bonds and hydrophobic interactions between whey protein molecules.

Meanwhile, the result in Figure 1(B) shows that the elongation at break values of the biodegradable blend films behaved inversely to the tensile strength values. That is, the greater a film's tensile strength, the less it will elongate under stress. The elongation at break values of the biodegradable blend films increasing from 10 percent to a maximum of 25% when the starch content was 5 percent. Elongation at break was increased due to the decreased crystallinity of tapioca starch in the blend films. Moreover, the introduction of plasticizer into the polymeric matrix also resulted in higher elongation values as these decreases the intermolecular attractive forces, improving the films flexibility and extensibility. These results were strongly supported from the previous research finding [7].

Soil Burial Degradation Test. The soil burial test provided a realistic environment where soil humidity, temperature, types and the amount of microorganisms were less in control and changed with seasons [12]. All the tested specimens had the same shape and size in order to avoid the effects of the film's shape on its biodegradability. The loss of weight of the biodegradable films monitored by means of sample collected from the soil at regular time interval. The films were buried in the soil and the sample was removed for evaluation at 3 day interval. Figure 2 shows the scanned pictures of blend films before and after composting test. The transparent films began to degrade in 3 days and become darker in color over time. The results were similar to previous report [6]. The films were eroded significantly and lost their original shape completely after 10 days.

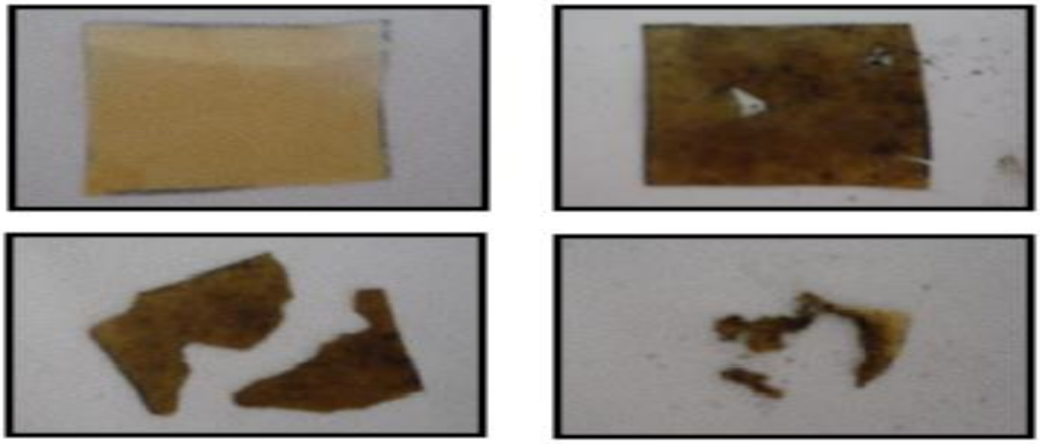

Figure 2: Scanned pictures of blend films before and after composting burial tes

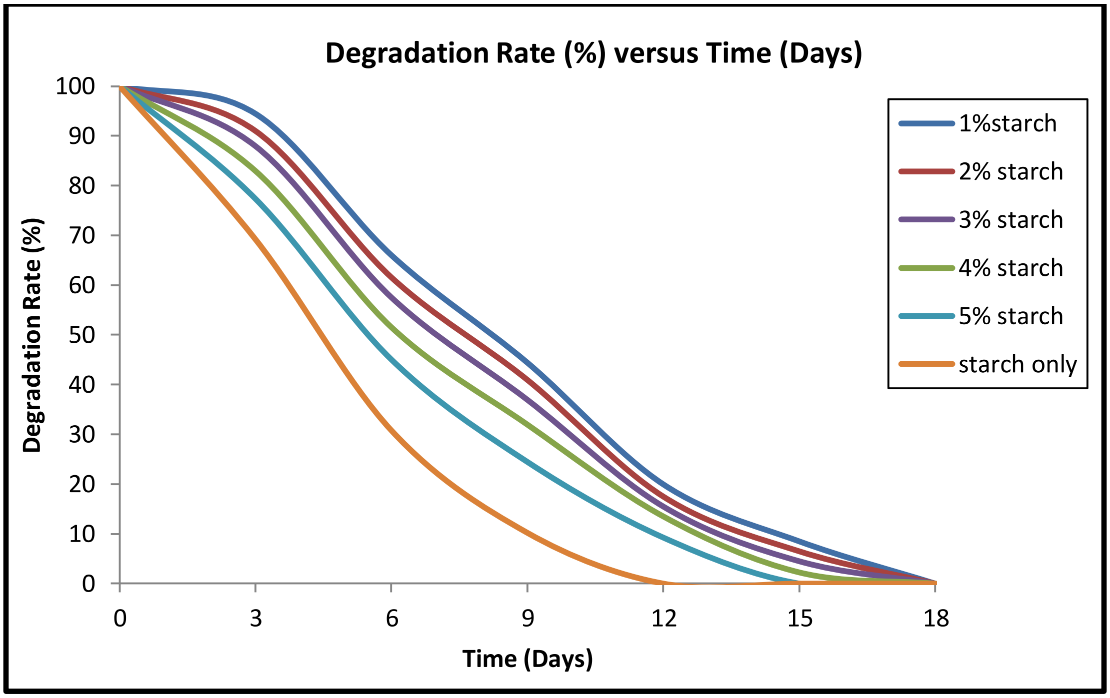

Figure 3: Degradability of starch film and blend films with different starch content in the soil burial test.

The evolution of the degradation in soil of the biodegradable film during the experimental period was shown in Figure 3. It can be seen that with the increased of degradable time, the compactness of the films was destroyed [8]. The films had shown a rapid degradation within a period of 3-10 days [12]. More than 80% weight loss of total solids was observed for the films in 10 days. The films were shown to start degrading after 3 days and achieved 100% degradation within 18 days.

Conclusion

Biodegradable blend films with different starch content were synthesized by using the mixing process and the casting method. The characteristics of the blend films with different tapioca starch composition (1, 2, 3, 4 and 5 g/100 mL) were evaluated using Universal Testing Machine and biodegradability using soil burial degradation test. Among the films fabricated, the biodegradable blend films compatibilized with 1 percent of tapioca starch content showed good mechanical properties. In soil burial test, a rapid degradation occurred for all the films in the initial 10 days, followed by 100% composting within 18 days. These results shows that the films produced from biodegradable biocomposite starch based films blended with chitosan and whey protein had potential application to be used as food packaging because it can enhance food quality and at the same time protected the environment.

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Designing Online Screencast Video Tutorial Repository – Aware Platform for m-learning

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Keywords: video tutorial repository, m-learning, instructional design, screencast video, qr code,

Abstract. The emergence of mobile technologies provides educators and teachers with an opportunity to design more effective learning tools for mobile learning (m-learning). Screencast videos are learning objects that assist learner to learn new concepts or skills. Thus, Online Screencast Video Tutorial Repository (OSVTR) is designed as a repository of video tutorials which are embedded with screencast technique. OSVTR is an innovative learning and discovery tools that integrate online screencast videos with two dimensional barcode technology, which is called quick response (qr) code. The qr code encodes data that can be decoded using any mobile devices. This paper describes a recent attempt to integrate online screencast video into teaching and learning though qr code. Authors have reviewed the literature related to online screencast video in education and the synergy between learning materials and screencast video online through qr code. The design of OSVTR is based on an instructional design which is called ADDIE model. Learning effects and future development paths of proposed technology are discussed.

Introduction

Ministry of Education (MOE) had mentioned Blended Learning as a teaching approach that integrates technology with teaching and learning [1]. Besides that, Flipped Classroom model had been identified as an educational technique to be implemented in schools [1]. Thus, it is a challenge for educators to determine an effective mode of teaching which tailored to the present educational system. The impact of globalization influences educators to shift from elearning to mobile learning (m-learning). M-learning is a teaching mode that is supported by mobile devices to enable learners accessing digital learning materials for outdoor and indoor activities [2]. A quick response (qr) code is a two dimensional technology that enabled learners to access the online digital materials using their mobile devices. Meanwhile, the emergence of screencast video technologies provides educators and teachers with an opportunity to design more effective instructional materials. Hence, the use of online screencast video has become a pertinent teaching strategy [3]. Screencast technique which is embedded in the video tutorial, captures any process that involves steps in doing a specific task [4].

Studies had proven that the combination of online digital materials and printed materials through two dimensional barcodes, had assisted students in learning history and practicing history inquiry skills [6]; improved students' language skills in listening and reading comprehension [7] and enhancing students' knowledge of vocabulary [8], but not much study had been done on designing the online screencast videos tutorial repository that supports m-learning. In this study, the qr code is printed with notes that are given to students as handouts. In order to do that, the users need to do five things: find the online video tutorial, copy the url for the video, paste the URL to any free online qr code generator, create qr code for the video tutorial and download the qr code. Even though qr code had been used for more than two decades, there is not many websites where the users can upload any video and the qr codes will be automatically generated by the websites.This paper aims to design the OSVTR as a website for a collection of screencast video tutorial where the qr codes will be created when the videos are uploaded to the website. The rest of the paper is organized as follows: Section 2 describes the literature review. Section 3 introduces the design of OSVTR. Finally, some concluding remarks and future works are discussed in Section 4.

Literature Review

Qr Code. Qr code was created by Denso Wave, Inc, in 1994 as a method for managing the inventory of Toyota vehicle parts in Japan [9]. A QR code is a matrix barcode (2D barcode) that contains data of an URL, telephone number and text. It can be scanned with camera found on most mobile devices (such as smart phones, iOS and Android). Besides that, a special software (QR Code Reader) should be installed in the devices to encode the data [10]. Once the code has been scanned, the url is automatically opened in the browser to display a specific educational website [11]. Meanwhile, the url for video tutorial which is stored in the mobile phone and can reuse when necessary. In addition, the QR code is free to be produced by using free software (QR code generator) which is available on the web. In education, the QR code can be in printed materials (books and notes) and can be embedded in PowerPoint slide as an image. The qr code is known as 'smart object' that can prompt a device to take action appropriate to that object [12]. Hence, it is a 'high-tech' example of the way user used to access information [13]. Besides that, the qr code is an essential medium to implement m-learning in outdoor education [14].

Fig1. Example of qr codes for screencast videos

Screencast Video. Screencast technique which is embedded in a video captures the actions taking place on the computer screen [3]. This type of video is a video tutorial, known as a ‘know how’ video. The screencast technique is produced by a special software such as Camtasia Studio. This software has a screen recorder that has two main functions: record the screen and record PowerPoint presentation. The screen recorder can produce a step-by-step video by capturing the movement of a pointer on the screen. Meanwhile, the recorder can record PowerPoint presentations by enabling an add-in to run the program from within PowerPoint. Special visual effects (such as callouts, zoom-n-pan and title clips) can be embedded in the recorded screencast video in order to emphasize the steps involved in the process [4]. Moreover, screencast videos are generally accompanied by an audio track, recorded with an internal or external microphone which is suitable to be used to explain the process involved in the video. Hence, the video tutorial which is embedded with screencast technique is very effective and engaging to students [15].

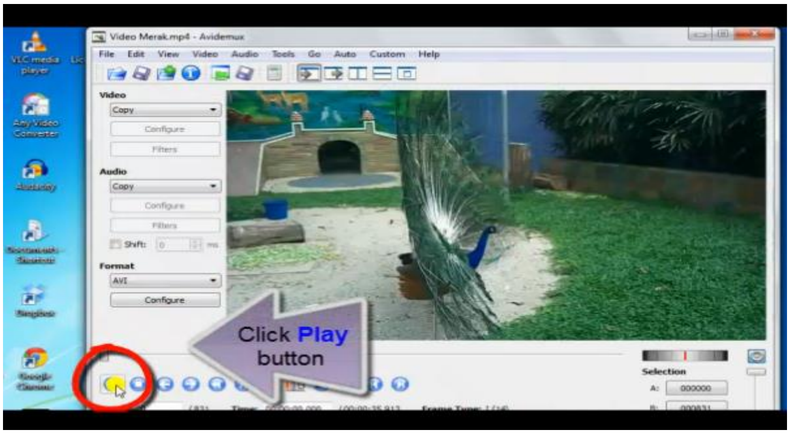

Fig 2 Example of special visual effect embedded in the video clip

Screencast Video and Flip Classroom Model. Screencast video is also known as ‘lecture capture’, which is in-line with flip classroom model [3]. In a flipped classroom setting, students review lectures online prior to the class session and in class they spend time working on problems or exercises [16]. The videos are produced by recorded PowerPoint presentations which are prepared by lecturers. Screencast videos can scaffold learners comprehend lecture materials in various fields such as Chemical Engineering [17], Medicine [18], Mathematics [19] and Statistics [20]. The synergy of the barcode technology and screencast video is considered as a mean of sending "lecture" home so that the teacher / educator spend more time in class to guide learners on special skills [16]. Besides that learning tools that facilitate learning in the right way, at the right place and the right time is needed in the learning environment. Therefore, selecting learning tools is crucial, especially when learners prefer mode of learning where they can study their materials at their own paced. This mode of learning is called self-paced learning. Screencast video is proven to be learning object that supports self-paced learning concept [21].

Screencast Video in Malaysian Educational System. Screencast video is a learning tool that is suitable for all levels of students: primary schools, high schools and higher education. Screencast technique has been accepted by the Ministry of Education (MOE) as a teaching strategy to scaffold primary students in learning new concepts. The technique is embedded in videos which are used as teaching support materials for ICT subject Year 4 in primary schools in Malaysia. The videos are used together with textbook [22]. One of the chapters in the textbook is Multimedia which include three editing techniques (image, audio and video) and three editing software (mtPaint, Audacity and Avidemux). The screencast technique was embedded in the video tutorials for the supporting materials which are distributed to schools in CD. Screencast videos have potential to assist learners to learn new features for new software [23], [24].

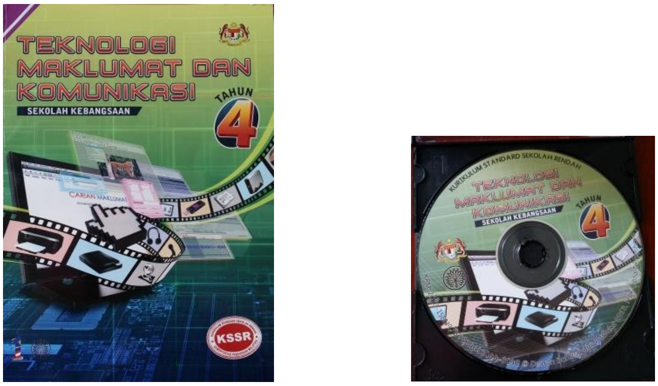

Fig 3: Textbook and CD (supporting material) for ICT Year 4 primary school

Design of the OSVTR

The ADDIE model [25] was utilized to develop OSVTR. Figure 4 outlines the five steps of the design and development process: Analysis, Design, Development, Implementation and Evaluation.

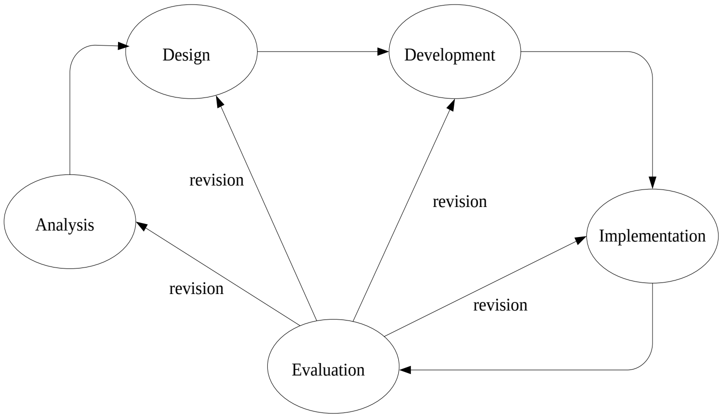

Fig. 4 ADDIE Model

Analysis Phase. The analysis phase examines existing online video websites, target users and analyses why a OSVTR is needed. Two types of screencast videos are identified for OSVTR: recorded screen and recorded PowerPoint presentations. The target users for OSVTR are teachers/lecturers and students from all levels of educations: primary, secondary and tertiary. Moreover, the categories for the videos are being identified. OSVTR is hoping to be a one stop center for educators to enhance learning.

Design Phase. The design phase determines the goal of screencast video based on the analysis results and lists the design specifications. Any users are required to login to the system in order to upload their video. The QR code will be automatically created by the system in OTVR once the video that has been uploaded. OSTVR is designed to have top videos and new videos to make the website more interesting. Besides that, site statistics are also provided at the main interface.

Development Phase. In the development phase, OSVTR is developed based on the design specifications which include the categories and the description of the videos in OSVTR.

Implementation Phase. In the implementation phase, the OSVTR is actually used.

Evaluation Phase. Finally, the evaluation phase measures the effectiveness of the OSVTR, pinpoints problems with OSVTR and attempts to fix the problem. Since each phase feeds information back to previous phases and forward to later phases, it is always undergoing improvement.

Summary

OSVTR is a repository for online screencast videos tutorial that enhances learning in a digital environment with supported by technologies. The design of OSVTR can assist teachers or instructional designers to produce suitable screencast video for teaching and learning. Therefore, the screencast video will be accepted as a teaching strategy to other educational institutions in Malaysia and other countries in the world. In future, the development team and researchers would like to study the effectiveness of the integration of learning materials (such as printed materials) and online screencast videos through QR code for learners. The finding of this study is important because this teaching approach using mobile devices is in-line with the blended learning teaching mode that is suggested in Malaysia Education Blueprint 2013-2025.

Hence, the integration of printed material and digital material through qr code should be addressed as a teaching instruction that supports m-learning.

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PERFORMANCE EVALUATION OF VERTICAL SLOTTED WIND TURBINE BLADE

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Keywords: Wind Turbine, Autodesk Inventor, ANSYS Software and Aerodynamic

Abstract. Nowadays, wind turbine became one of the largest energy suppliers of energy in world. The focal point in the wind turbine system is where the wind is harvested and converted into useable energy by the wind turbine blade. This study emphasized on determining the performance of continuous and slotted type of 5 meter diameter wind turbine blades. The Autodesk Inventor 2013 software was used as to develop the three dimensional model National Advisory Committee for Aeronautics (NACA) 4412 airfoil blades with and without slot before evaluation of aerodynamic characteristics by using ANSYS software. This evaluation of aerodynamic characteristics of the slotted wind turbine blades with different slot configurations is believed could to benefit the material weight reduce its cost as it is constantly rising. Blades with lighter material would produce wind turbines with low rotational inertia and therefore would yield better energy performance at lower wind speeds. The aerodynamic results shows an increased value of lift coefficient with the increasing value of angle of attack (00– 300).

Introduction

Nowadays, wind turbines became one of the largest suppliers of energy in the world. The focal point in the wind turbine system where the wind is converted into useable energy is the wind turbine blade. Wind turbines which were known as windmills many years ago was constructed from wood, cloth and stone for the purpose of pumping water or grinding corn are used as now used to extract the energies [1]. As the wind turbines in global energy production grow, wind turbines optimization becomes much more important [2] [3]. Currently, many wind turbines are using composite as it is cheaper and have higher flexibility than other materials. However it has more weight and needs special labour fabrication techniques to make the known wind turbine blades which are relatively costly [9], and there may be some quality control issues [4]. In order for wind energy to be competitive in the market and to enhance its usage, it is important that its weight and cost to be minimized through blade design optimization [5]. If its power capability is equal, then the cost of material could be reduced and there will be more wind turbine usage in Malaysia. Currently, the wind blade is smooth and having a continuous surfaces which need higher cost in material and production. Thus slotted blade type NACA 4412 is studied to determine either the slotted wind turbine capable to achieve the efficiency of continuous blade and in the same time, the new blades' design will be much lighter in weight since the blade has been slotted. The effect of number of slot and slot distance to the aerodynamic performance of the blade will be also evaluated using ANSYS software in this study. It is expected the slotted type wind turbine blade may benefits weight and cost reduction without compromising the performance of the wind turbine system.

Blade profile

As reported in many research publications, the effectiveness of wind energy conversion systems are dependent on a wide range of factors including the wind-speed characteristics, the wind turbine generator design parameters etc. [6]. Many methods and research has been done as to gain the optimum output based on the blade design, specifications, and perfect location to build the wind turbine and so on. The efficiency of the rotor largely depends on the blade's profile in increasing the lift to generate sufficient torque [7] [8]. Parameters associated with blade geometry optimization are important, because once optimized, shorter rotor blades would produce power comparable to larger and less optimized blades [9].

Lift (C_L) and Drag (C_D) coefficient

Just like an aeroplane wing, wind turbine blades work by generating lift due to their shape. As shown in Figure 2.4, the more curved side generates low air pressures while high pressure air pushes on the other side of the aerofoil. The net result is a lift force perpendicular to the direction of flow of the air [3] [10] [11] [12] [13]. The lift coefficient is a dimensionless coefficient that relates the lift generated by a lifting body to the density of the fluid around the body, its velocity and an associated reference area. Drag is the force parallel to the wind flow (Figure 1) and drag coefficient is a dimensionless number used in aerodynamics to describe the drag of a shape. This number is independent of the size of the object and is usually determined in a wind tunnel. Basically the drag will increase together with the increasing value of lift force [14]. For a wind blade operate efficiently, the drag value should be low. If the aerofoil shape is good, the lift force is much bigger than the drag, but at very high angles of attack, especially when the blade stalls, the drag increases dramatically. So at an angle slightly less than the maximum lift angle, the blade reaches its maximum lift/drag ratio. The best operating point will be between these two angles.

Since the drag is in the downwind direction, it may seem that it wouldn't matter for a wind turbine as the drag would be parallel to the turbine axis, so wouldn't slow the rotor down. It would just create "thrust", the force that acts parallel to the turbine axis hence has no tendency to speed up or slow down the rotor. When the rotor is stationary (e.g. just before start-up), this is indeed the case. However the blade's own movement through the air means that, as far as the blade is concerned, the wind is blowing from a different angle. This is called apparent wind. The apparent wind is stronger than the true wind but its angle is less favourable: it rotates the angles of the lift and drag to reduce the effect of lift force pulling the blade round and increase the effect of drag slowing it down. It also means that the lift force contributes to the thrust on the rotor. The result of this is that, to maintain a good angle of attack, the blade must be turned further from the true wind angle.

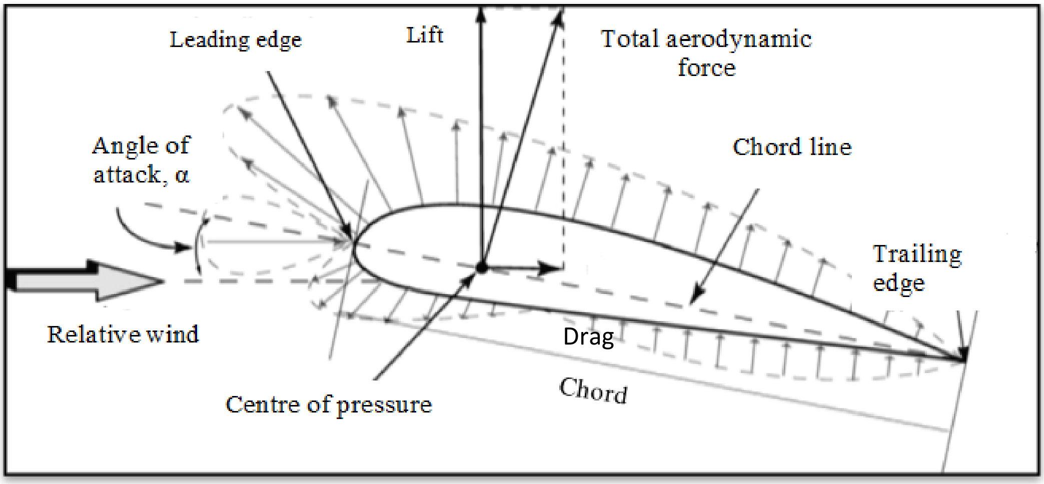

Figure 1: Airfoil Concepts [3] [10] [11] [12] [13].

Angle of Attack (α)

The lift and drag coefficients are strongly dependent on angle of attack and less dependent on Reynolds number. Reynolds number effects are particularly important in the region of maximum lift coefficient just prior to stall. Basically, the lift force increases as the blade is turned to present itself at a greater angle to the wind. This is called the angle of attack. At very large angles of attack the blade "stalls" and the lift decreases again. So there is an optimum angle of attack to generate the maximum lift.

In fluid dynamics, angle of attack (α) is the angle between a reference line on a body (often the chord line of an airfoil) and the vector representing the relative motion between the body and the fluid through which it is moving. In aerodynamics, angle of attack specifies the angle between the chord line of the wing of a fixed-wing aircraft and the vector representing the relative motion between the aircraft and the atmosphere; as shown in Figure 2.

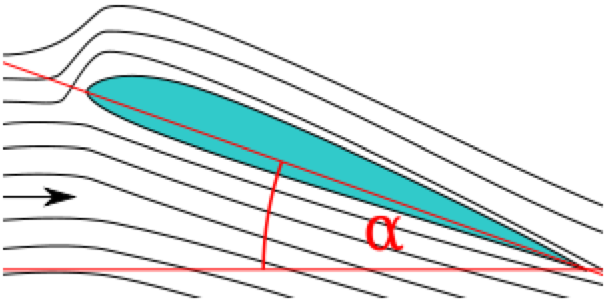

Figure 2: Angle of Attack

The critical angle of attack is the angle of attack which produces maximum lift coefficient. This is also called the "stall angle of attack". Below the critical angle of attack, as the angle of attack increases, the coefficient of lift (C_L) increases [15] [14]. This dynamic stall changes as the sudden changes of the wind direction leading to changes of angle of attack [16].

At the same time, above the critical angle of attack, as angle of attack increases, the air begins to flow less smoothly over the upper surface of the airfoil and begins to separate from the upper surface [17]. On most airfoil shapes, as the angle of attack increases, the upper surface separation point of the flow moves from the trailing edge towards the leading edge. At the critical angle of attack, upper surface flow is more separated and the airfoil or wing is producing its maximum coefficient of lift. As angle of attack increases further, the upper surface flow becomes more and more fully separated and the airfoil/ wing produces less coefficient of lift [18]. Previous research also shown that for radius 5 metre of NACA4412 blade, the C_L will increase until 13° angle of attack, but then it decrease while C_D at lowest value at 0 degree angle of attack and estimated the best angle of attack as 4 degrees [14] [19].

3.0 Designing and simulation process

In this study (figure 3), the blades will be design using Autodesk Inventor 2013 and simulate using ANSYS. Figure 4 is the solid continuous blade type NACA 4412 and the new blades' design applies vertical type of slotted as shown in figure 5. The size of slots is 10mm with varies number of slots number and different angle of attack.

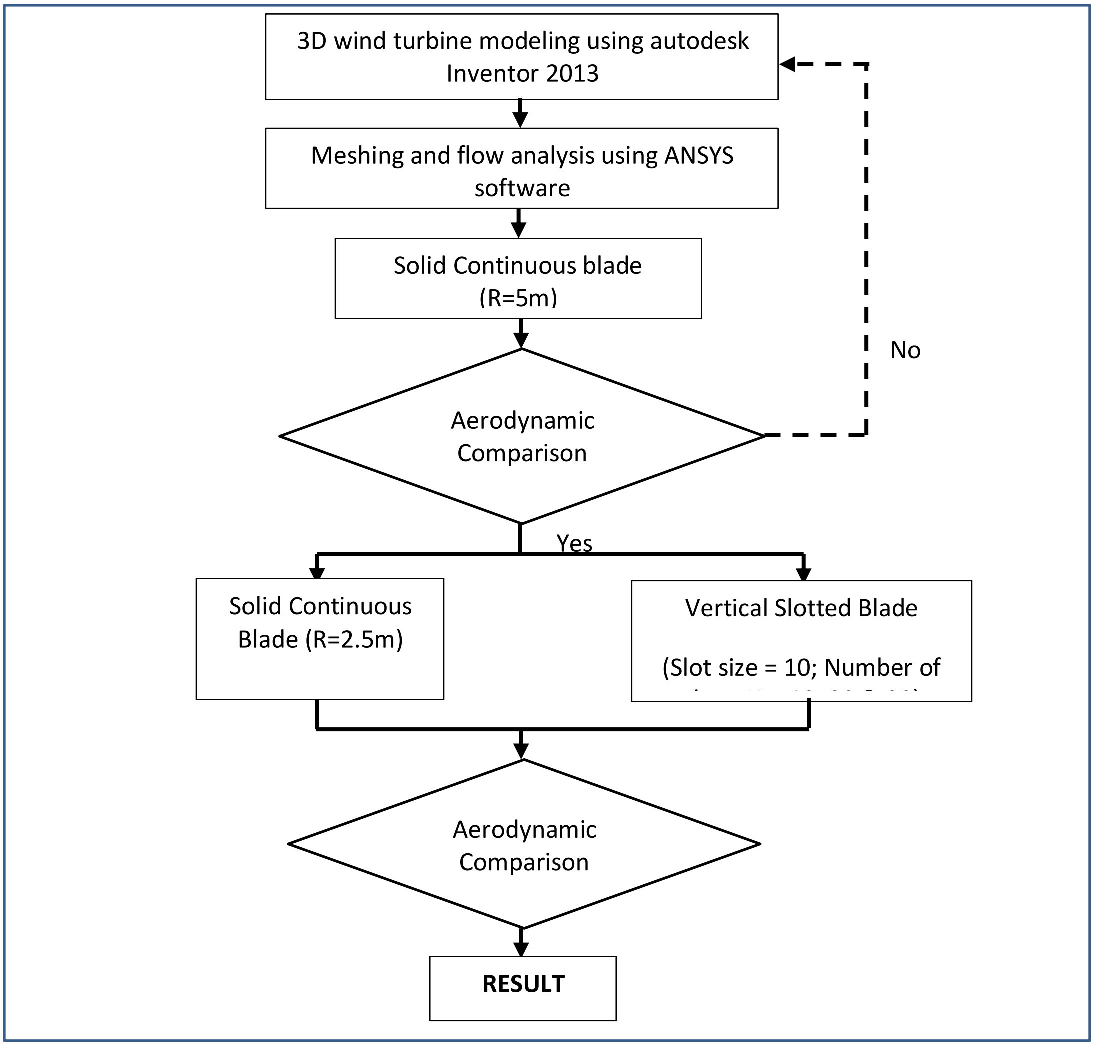

Figure 3: Design and Modeling Process

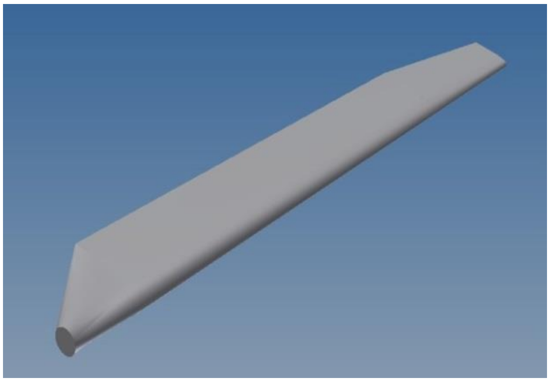

Figure 4: Solid Continuous Blade

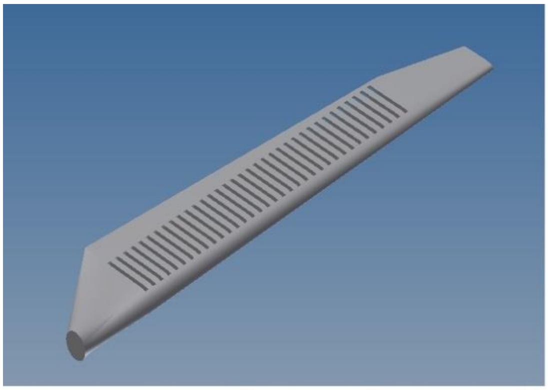

Figure 5: Vertical Slotted Blad

Result

Results achieved for this study as shown in figure 7 – 8. It is found that lift coefficient is increasing when the angle of attack increase. However the drag coefficient is decreased. Based on the ratio of coefficient, the solid blade has the higher values than the new design except at 0° angle of attack for blades with 10 and 30 slots.

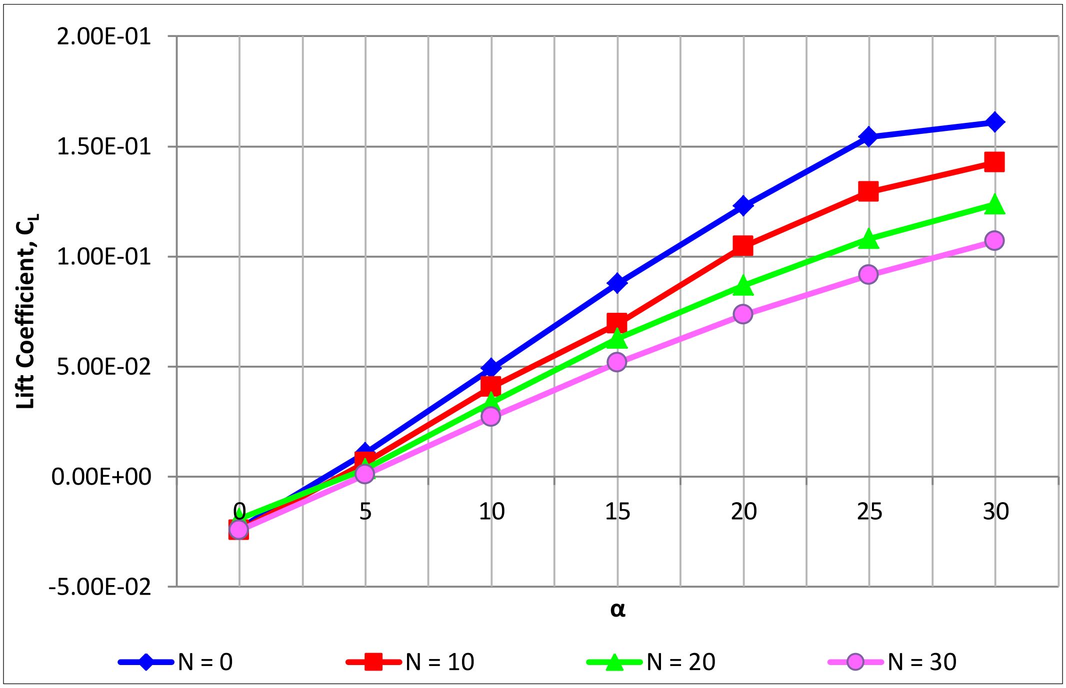

Figure 6: C_L vs α

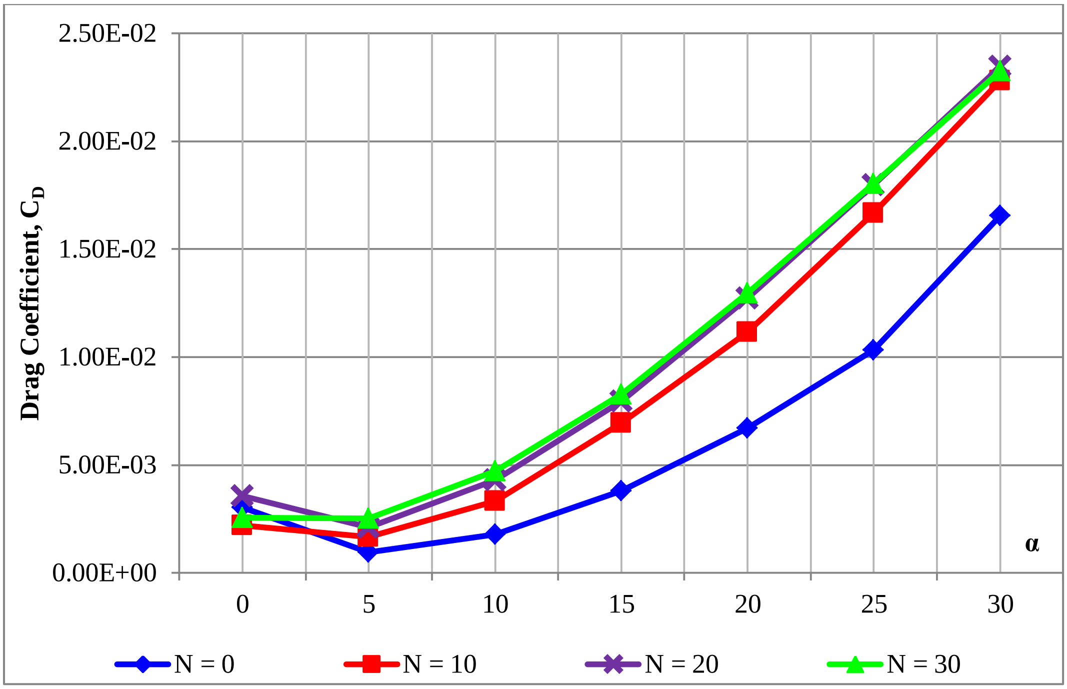

Figure 7: C_D vs α

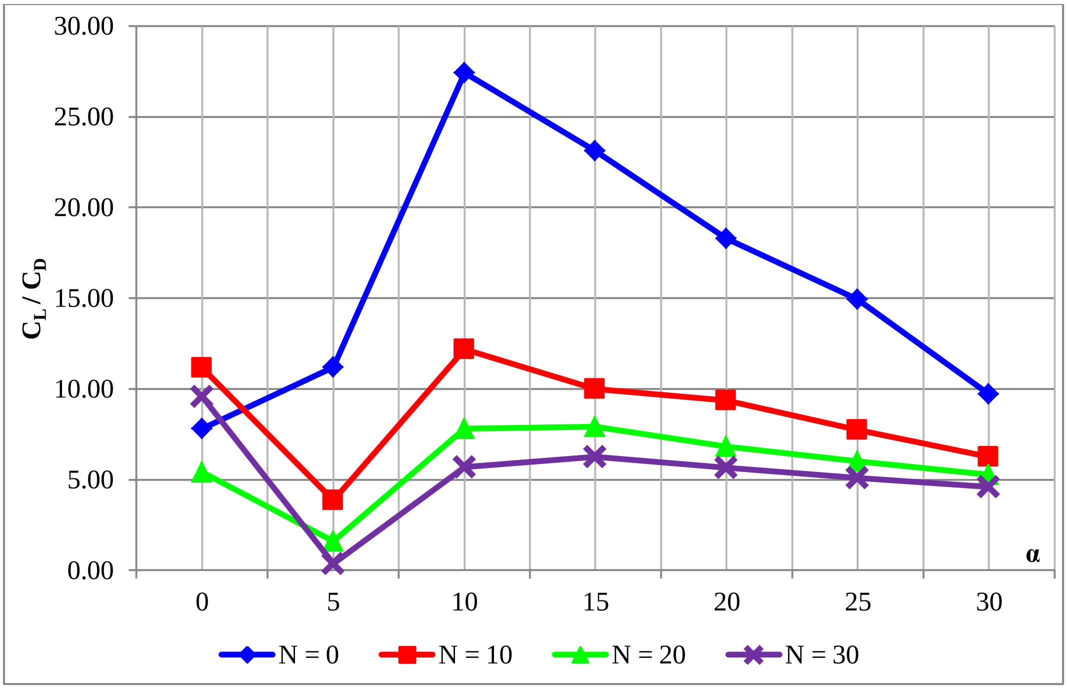

Figure 8: C_L/C_D vs α

Discussion and Future work

A blade design has many factors that can contribute to its aerodynamic results. One of it is the length of the blade itself [20]. In previous study, the length blades used is radius 5 meter for NACA 4412 [11]. As for this study, the rotor diameter is only 5 meter, which is half of size than usual wind turbine used for low speed wind. The value of Lift and drag coefficient are the crucial values for aerodynamic performance evaluation.

Angle of attack (α) is one of the parameter used in this study. This is because wind could blow from a different angle that caused by type of monsoon or the weather [1]. It is one tedious work in assembly, but that's a nature that could not be change [15]. From results, the value of lift coefficient is increased by increasing the angle of attack. This somehow has affected the drag coefficient as well, which the values is increases as α increase. This situation is tally with previous study [15] [14]. The critical and optimum α can be estimated by doing plotting the simulated results. The same situations happen for drag coefficient in this study, which previous study is between α of 5° - 10°. It is found that blade with 10 and 30 slots has higher coefficient ratio at angle of attack 0°. The percentage mass reduction for 10 and 30 slots respectively as 5.47% and 10.93%. Major percentages of reductions shows especially for blades with 30mm size of slots. It is well known that by reduction of material usage in a process, it will definitely reduce the ever rising material cost and be able to compete with many other energy sources [21].

It is important in reducing the cost as to become the primary driver for on-going developments in wind turbine technology. By reducing the mass of the blade, the new design of blades will result in higher productivity. With this study, it is also shown that the new designs are a cost effective in material investment. If this scale could be produced, it could be used at rural or urban area which difficult to have big scale of wind turbine. Furthermore, it will help to educate our younger generations in exposure to renewable energy that will surely benefit human and earth in many ways for a very long time. As for future work, this blade can be simulated using different wind speeds, expanded type of airfoil, for example micro blade, thin airfoil and shell type with multi shapes of slots can also be included. This is to widen up how effective slots take place on blades.

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PERSEPSI MAJIKAN TERHADAP PRESTASI PELAJAR LATIHAN INDUSTRI

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ABSTRAK. Penglibatan majikan dalam pendidikan vokasional sangat penting dalam mengenal pasti keberkesanan latihan yang diberikan kepada pelajar. Objektif kajian ini ialah untuk mengenal pasti persepsi majikan terhadap pelajar latihan industri dalam penyediaan tenaga mahir. Kajian ini bersifat deskriptif. Populasi kajian terdiri daripada semua firma yang terlibat dalam program latihan industri dengan Kolej Komuniti Jelebu dan syarikat seluruh negeri di Malaysia pada sesi Julai dan November 2013. Seramai 43 majikan telah dipilih sebagai sampel kajian. Soal selidik telah digunakan untuk memungut data. Dapatan menunjukkan semua majikan berpuas hati terhadap prestasi pelajar sewaktu menjalankan latihan industri dari segi kemahiran dengan min 92% dan sikap dan personaliti pelajar min 90%. Hasil kajian juga menunjukkan pelajar latihan industri boleh bekerjasama dalam kumpulan. Kurikulum Kolej Komuniti perlu dinilai dari semasa ke semasa untuk menguji keberkesanannya. Cadangan kajian ialah latihan industri perlu menjadi sebahagian dari pada kurikulum. Pihak industri perlu melibatkan diri dalam perkembangan kurikulum Kolej Komuniti bagi memenuhi keperluan tenaga kerja dalam negara.

PENGENALAN

Dewasa ini, pembangunan sumber manusia adalah penting untuk memastikan pengurusan teknologi baru yang berdaya saing. Pendidikan tinggi merupakan aspek yang paling penting dalam mengubah ciri-ciri pelajar agar mereka dapat menyesuaikan diri dalam situasi pekerjaan (Khor Choo Kwang,1997). Jabatan Pengajian Politeknik dan Kolej Komuniti, Kementerian Pendidikan Malaysia (2007) menyatakan Kolej Komuniti merupakan institusi yang menyediakan keperluan latihan dan kemahiran kepada lepasan menengah sebelum mereka masuk ke alam pekerjaan yang sebenar. Selain daripada itu, peranan kolej juga bertindak sebagai satu batu loncatan kepada pelajar agar dapat melanjutkan pelajaran ke peringkat yang lebih tinggi.

Kolej Komuniti Jelebu (KKJU) merupakan kolej yang ditubuhkan dengan objektif yang sama. Ia telah mula beroperasi sejak 1 Mac 2003. Latihan industri pula mula dilaksanakan sejak Julai 2006. Ia bermula dengan 2 peringkat mengikut kursus yang ditawarkan. Latihan industri untuk Sijil Teknologi Elektrik (STE) mula dilaksanakan pada Julai 2006 manakala untuk Sijil Pemprosesan Dan Kawalan Mutu Makan (SPM), Sijil Teknologi Pembinaan (STP) dan Sijil Komputer Dan Sokongan (SKS) mula dilaksanakan pada Julai 2008.

Pada tahun 2008, semua proses latihan industri telah diselaraskan mengikut MS ISO 9001:2008. Menurut Sektor Pengurusan Kolej Komuniti (2008). Latihan industri merupakan satu modal penting dalam kurikulum pengajian di Kolej Komuniti Kementerian Pengajian Tinggi ketika itu. Latihan industri yang dilalui oleh pelajar dalam tempoh 5 bulan, di mana pelajar akan ditempatkan ke industri yang berkaitan dengan bidang pengajian. Antara objektif latihan industri adalah untuk :

a. Mendapatkan pendedahan kepada alam pekerjaan sebenar
b. Meningkatkan pengetahuan dan kemahiran
c. Memahami perkaitan antara pengetahuan yang dipelajari di bilik kuliah dengan amalan praktikal
d. Menghayati semangat kerja berpasukan dan perhubungan baik dengan pekerja di tempat latihan
e. Menghayati sifat jujur, amanah, berdisiplin dan bertanggungjawab
f. Mengamalkan peraturan keselamatan dan amalan baik di tempat latihan
g. Mengukuhkan keyakinan diri dan kemahiran komunikasi
h. Menyediakan laporan harian dan laporan latihan industri.

Unit Perhubungan dan Latihan Industri (UPLI) bertanggungjawab menguruskan semua aktiviti yang berkaitan dengan latihan industri. UPLI juga bertanggungjawab dalam mengumpul data maklumbalas daripada pihak majikan, terutamanya sikap dan kemahiran pelajar semasa menjalani latihan industri. Ini bertujuan melahirkan pelajar yang berkemahiran tinggi dan memenuhi keperluan industri berkaitan (Rashidah & Nurhuda,2009).

ISU

Menurut Dewan Bahasa Dan Pustaka (2002) majikan merupakan organisasi yang menyediakan pekerjaan kepada orang lain. Manakala tempat latihan merupakan organisasi swasta atau kerajaan yang menawarkan tempat untuk pelajar menjalani latihan industri (Sektor Pengurusan Kolej Komuniti, 2008). Konsep latihan industri bukan sahaja dilaksanakan di peringkat Kolej Komuniti, tetapi juga dilaksanakan di peringkat universiti. Latihan industri dinamakan Latihan Industri dan Komuniti di Universiti Kebangsaan Malaysia. Matlamat latihan industri adalah untuk mendedahkan pelajar kepada alam pekerjaan yang sebenar sambil mempraktikkan pengetahuan secara teori kepada amalan serta mempertingkatkan pengetahuan dan kemahiran dalam bidang profesion masing-masing (Pusat Pembangunan Akademik & Pejabat Hubungan Industri, 2010).

Dalam kajian yang dilakukan oleh Azizi et al. (2002) terhadap pelajar yang menjalani latihan industri mendapati 78.0% daripada responden bersetuju bahawa aktiviti kuliah dan kerja amali yang dipelajari dapat membantu mereka semasa menjalani latihan industri. Pemilihan tempat latihan industri yang sesuai dengan faktor-faktor persekitaran dalam keadaan yang baik pula membuatkan pelajar tersebut dapat mengikuti latihan industri dalam keadaan yang selesa. Latihan industri mempunyai hubungan signifikan dengan tahap pembelajaran. Terhadap peningkatan ketara selepas pelajar yang melalut program latihan industri, iaitu dari segi sikap, personaliti dan kemahiran (Mandilaras, 2004). Kajian mendapati oleh Hoachlander et al. (2003) pula mendapati majoriti majikan lebih suka menerima pelajar yang telah mengikuti latihan industri dan tamat latihan untuk bekerja dengannya. Gaji pelajar tersebut juga meningkat dengan kemahiran dan pengalaman bekerja yang ada dengannya. Mereka juga dapat memikul tanggungjawab sebagai pekerja yang baik dalam bidang tugas yang diberikan jika berbanding dengan pekerja berkelayakan sekolah menengah.

Terdapat banyak rungutan daripada majikan tentang masalah personaliti dan peningkatan kemahiran pelajar semasa menjalani latihan industri. Untuk itu, kajian ini dilakukan untuk mendapatkan persepsi majikan terhadap pelajar latihan industri Kolej Komuniti Jelebu. Ia juga bagi mengetahui sejauhmana program latihan industri dapat memenuhi kehendak industri terkini. Menurut Rashidah dan Nurhuda (2009), persepsi positif daripada majikan menunjukkan prestasi pelajar mengikut tahap tenaga mahir yang diperlukan**.**

OBJEKTIF

Objektif kajian ini adalah :

a. Mengenalpasti persepsi majikan terhadap kebolehan pelajar dari segi kemahiran teknikal semasa menjalani latihan industri.
b. Mengenalpasti persepsi majikan terhadap aplikasi pengetahuan subjek semasa menjalani latihan industri.

METODOLOGI

Kajian dilakukan terhadap 46 majikan seluruh Malaysia serta pelajar semester 4 KKJU yang menjalani latihan industri pada sesi Julai 2013 (32 orang), November 2013 (35 orang) dan Mac 2014 (7 orang). Untuk mendapat saiz sampel yang tepat, Jadual Saiz Sampel Krejcie and Morgan (1970) telah digunakan. Maka, populasi kajian ini terdiri daripada semua majikan yang terlibat dalam program latihan industri dengan KKJU. Kaedah persampelan yang digunakan adalah secara kluster kerana kaedah ini lebih kerap dan mudah digunakan. Hasil dapatan menunjukkan keputusan yang juga dimiliki tahap kebolehpercayaan yang tinggi (Leming, 2006).

Kajian ini melibatkan analisis data secara kuantitatif dan disokong oleh kualitatif. Data kualitatif didapati secara proses penyeliaan pertama pelajar secara panggilan telefon untuk menemubual penyelia firma tentang prestasi pelajar setelah menjalani latihan industri selama sebulan. Hasil panggilan telefon dicatatkan dalam Borang Penyeliaan 1 Latihan Industri (Lampiran A). Data kuantitatif pula didapati semasa proses penyeliaan kedua terhadap pelajar, iaitu dengan melawat ke tempat latihan industri pelajar. Borang Lawatan Penyeliaan Latihan Industri Pelajar dari prosedur kerja yang diperkenalkan oleh Bahagian Hubungan Industri, Pengesanan Graduan & Alumni, Jabatan Pengajian Kolej Komuniti. Borang tersebut mempunyai 4 bahagian iaitu :

a. Persepsi majikan terhadap prestasi pelajar dari segi sikap dan personaliti
b. Persepsi majikan terhadap prestasi pelajar dari segi kemahiran sewaktu menjalani latihan industri
c. Kehadiran pelajar sepanjang latihan industri
d. Persepsi pelajar terhadap latihan industri dan majikan

Semua data yang akan didapati nanti akan diproses dengan menggunakan komputer melalui program Statistical Package for Social Sciences (SPSS). Analisis ini akan dapat menilai keberkesanan perlaksanaan latihan industri kepada pelajar-pelajar Kolej Komuniti Jelebu. Setiap kriteria dalam Borang Lawatan Penyeliaan Latihan Industri dinilai menggunakan skala likert. Ukuran skala likert adalah seperti dalam Jadual 1.

Jadual 1 : Tafsiran Skala Likert

Ukuran skala likert	Tafsiran Skala
1	**Amat lemah**
2	**Lemah**
3	**Memuaskan**
4	**Baik**
5	**Amat Baik**

DAPATAN

Hasil dapatan adalah dalam bentuk kuantitatif dan kualitatif. Data kuantitatif dianalisa dengan menggunakan perisian SPSS 19.0. daripada 74 borang yang diedarkan, kesemua 74 borang dikembalikan. Borang soal selidik dianalisis berasingan mengikut bidang masing-masing, iaitu 23 majikan bidang elektrik dan 23 majikan bidang pemprosesan dan kawalan mutu makanan.

Data kualitatif pula merupakan dapatan pertama semasa proses penyeliaan pertama pelajar. Panggilan telefon dibuat kepada beberapa pelajar secara rawak mudah untuk mengetahui prestasi pelajar setelah sebulan menjalani latihan industri. Hasil panggilan tersebut mendapati 95% pelajar yang menjalani latihan industri mempunyai personaliti yang baik ,berdisiplin, dan mematuhi arahan yang diberikan. Hasil dapatan 5%yang mempunyai masalah kehadiran dan ketepatan masa. Selain daripada itu, dapatan kajian kualitatif juga menunjukkan persepsi majikan terhadap prestasi pelajar dari segi kemahiran sewaktu menjalani latihan industri adalah kurang memuaskan terutamanya dari aspek mampu bekerja sendiri dengan pengawasan yang minimum dan kemampuan dalam menyelesaikan masalah yang berkaitan dengan tugasan yang diberikan.

I.ANALISIS PERSEPSI MAJIKAN TERHADAP PRESTASI PELAJAR LATIHAN INDUSTRI SIJIL TEKNOLOGI ELEKTRIK (STE)

Untuk aspek personaliti dan sikap pelajar dapatan kajian dirumuskan dalam Jadual 2. Penyelidik mendapati kesemua pelajar STE mempunyai nilai personaliti yang baik (82.6%) iaitu kehadiran dengan peratusan 78.1% ,kemahiran berkomunikasi dengan kakitangan syarikat dengan peratusan sebanyak 56.3%, bersedia menerima tugasan yang diberi dengan peratusan 90.6%, sentiasa mematuhi arahan dalam melaksanakan tugas dengan peratusan 84.4%, melaksanakan tugas dalam jangka masa yang ditetapkan dengan peratusan 84.4%, dapat menyesuaikan diri dengan kakitangan syarikat dengan peratusan 81.2% dan kebolehan bekerja dalam satu kumpulan dengan peratusan 75%. Ini menunjukkan pelajar masih kurang berupaya untuk berkomunikasi dengan berkesan dan efektif bersama-sama rakan sekerja.Jadual 2 menunjukkan persepsi majikan terhadap prestasi pelajar STE dari segi sikap dan personaliti dan Jadual 3 menunjukkan persepsi majikan terhadap prestasi pelajar STE dari segi kemahiran semasa menjalani latihan industri.

Persepsi majikan terhadap prestasi kemahiran pelajar STE pula menunjukkan pihak majikan berpuas hati dengan langkah-langkah keselamatan semasa menjalankan tugas (62.5%), dan usaha meningkatkan kemahiran dan pengetahuan (56.2%). Ini diikuti dengan kemampuan menyelesaikan masalah yang berkaitan dengan kerja sebanyak 31.2%, kemahiran pelajar dari segi kreativiti dalam penyelesaian tugas 53.2%,hasil kerja menepati tahap yang ditetapkan oleh pihak syarikat sebanyak 43.7%, berkemahiran dan berpengetahuan asas dalam bidang tugas sebanyak 31.2%. Persepsi majikan yang paling tidak memuaskan adalah dari segi kemampuan pelajar bekerja sendiri dengan pengawasan minimum iaitu sebanyak 18.8% .

Jadual 2 : Persepsi majikan terhadap prestasi pelajar dari segi aspek sikap dan personaliti pelajar STE

Bil	Perkara	Kekerapan & Peratusan

		1-2 (lemah)	**3 (sederhana)**	**4-5 (baik)**
1	Kehadiran pelajar semasa menjalani latihan industri	5 (15.6%)	2 (6.3%)	25 (78.1%)
2	Bersedia menerima tugasan yang diberi	0 (0%)	3 (9.4%)	29 (90.6%)
3	Sentiasa mematuhi arahan dalam melaksanakan tugas	0 (0%)	5 (15.6%)	27 (84.4%)
4	Melaksanakan tugas dalam jangka masa yang ditetapkan	0 (0%)	5 (15.6%)	27 (84.4%)
5	Dapat menyesuaikan diri dengan kakitangan syarikat	0 (0%)	6 (18.8%)	26 (81.2%)
6	Kebolehan bekerja dalam satu kumpulan	0 (0%)	8 (25%)	24 (75%)
7	Kemahiran berkomunikasi dengan kakitangan syarikat	9 (28.1%)	5 (15.6%)	27 (56.3%)

Jadual 3 : Persepsi majikan terhadap prestasi pelajar STE dari segi kemahiran semasa menjalani latihan industri

Bil	**Perkara**	**Kekerapan & Peratusan**		
		1-2 (lemah)	**3 (sederhana)**	**4-5 (baik)**
1	Mampu bekerja sendiri dengan pengawasan yang minimum	16 (50%)	10 (31.2%)	6 (18.8%)
2	Hasil kerja menepati tahap yang ditetapkan oleh syarikat	6 (18.8%)	12 (37.5%)	14 (43.7%)
3	Mampu menyelesaikan masalah yang berkaitan	3	19	10

	dengan kerja	(9.4%)	(59.4%)	(31.2%)
4	Berkemahiran dan berpengetahuan asas dalam bidang tugas	7 (21.9%)	15 (46.9%)	5 (31.2%)
5	Mengamalkan aspek keselamatan dalam menjalankan tugas	0 (0%)	12 (37.5%)	20 (62.5%)
6	Berusaha meningkatkan kemahiran dan pengetahuan	0 (0%)	14 (43.8%)	18 (56.2%)
7	Mempunyai daya kreativiti dalam menyelesaikan masalah tugas	5 (15.6%)	10 (31.2%)	17 (53.2%)

II. ANALISIS PERSEPSI MAJIKAN TERHADAP PRESTASI PELAJAR LATIHAN SIJIL PEMPROSESAN DAN KAWALAN MUTU MAKANAN (SPM)

Untuk aspek personaliti dan sikap pelajar dapatan kajian dirumuskan dalam Jadual 4. Penyelidik mendapati kesemua pelajar SPM mempunyai nilai personaliti yang baik (59.7%) untuk semua aspek iaitu kehadiran dengan peratusan 66.7%, kemahiran berkomunikasi dengan kakitangan syarikat dengan peratusan sebanyak 61.9%, bersedia menerima tugasan yang diberi dengan peratusan 54.8%, sentiasa mematuhi arahan dalam melaksanakan tugas dengan peratusan 47.7%, melaksanakan tugas dalam jangka masa yang ditetapkan dengan peratusan 59.5%, dapat menyesuaikan diri dengan kakitangan syarikat dengan peratusan 76.2% dan kebolehan bekerja dalam satu kumpulan dengan peratusan 52.4%. Ini menunjukkan pelajar masih kurang berupaya untuk berkomunikasi dengan berkesan dan efektif bersama-sama rakan sekerja.

Jadual 4 menunjukkan persepsi majikan terhadap prestasi pelajar SPM dari segi sikap dan personaliti dan Jadual 5 menunjukkan persepsi majikan terhadap prestasi pelajar SPM dari segi kemahiran semasa menjalani latihan industri. Persepsi majikan terhadap prestasi kemahiran pelajar SPM pula menunjukkan pihak majikan berpuas hati dengan langkah-langkah keselamatan semasa menjalankan tugas (52.4%)., dan usaha meningkatkan kemahiran dan pengetahuan (54.8%). Ini diikuti dengan kemampuan menyelesaikan masalah yang berkaitan dengan kerja sebanyak 50%, kemahiran pelajar dari segi kreativiti dalam penyelesaian tugas 50%,hasil kerja menepati tahap yang ditetapkan oleh pihak syarikat sebanyak 52.4%, berkemahiran dan berpengetahuan asas dalam bidang tugas sebanyak 17.1%. Persepsi majikan yang paling tidak memuaskan adalah dari segi kemampuan pelajar bekerja sendiri dengan pengawasan minimum iaitu sebanyak 40.5%.

Jadual 4 : Persepsi majikan terhadap prestasi pelajar dari segi aspek sikap dan personaliti pelajar SPM

Bil	Perkara	Kekerapan & Peratusan		
		1-2	**3**	**4-5**
		(lemah)	**(sederhana)**	**(baik)**
1	Kehadiran pelajar semasa menjalani latihan industri	4 (9.5%)	10 (23.8%)	28 (66.7%)
2	Bersedia menerima tugasan yang diberi	0 (0%)	19 (45.2%)	23 (54.8%)
3	Sentiasa mematuhi arahan dalam melaksanakan tugas	0 (0%)	22 (52.3%)	20 (47.7%)
4	Melaksanakan tugas dalam jangka masa yang ditetapkan	0 (0%)	17 (40.5%)	25 (59.5%)
5	Dapat menyesuaikan diri dengan kakitangan syarikat	0 (0%)	10 (23.8%)	32 (76.2%)
6	Kebolehan bekerja dalam satu kumpulan	0 (0%)	20 (47.6%)	22 (52.4%)
7	Kemahiran berkomunikasi dengan kakitangan syarikat	10 (23.8%)	6 (14.3%)	26 (61.9%)

Jadual 5 : Persepsi majikan terhadap prestasi pelajar SPM dari segi kemahiran semasa menjalani latihan industri

Bil	Perkara	Kekerapan & Peratusan		
		1-2	**3**	**4-5**
		(lemah)	**(sederhana)**	**(baik)**
1	Mampu bekerja sendiri dengan pengawasan yang	17	5	10

	minimum	(40.5%)	(11.9%)	(47.6%)
2	Hasil kerja menepati tahap yang ditetapkan oleh syarikat	8 (19%)	12 (28.6%)	22 (52.4%)
3	Mampu menyelesaikan masalah yang berkaitan dengan kerja	6 (14.3%)	15 (35.7%)	21 (50%)
4	Berkemahiran dan berpengetahuan asas dalam bidang tugas	13 (40%)	18 (42.9%)	11 (17.1%)
5	Mengamalkan aspek keselamatan dalam menjalankan tugas	0 (0%)	20 (47.6%)	22 (52.4%)
6	Berusaha meningkatkan kemahiran dan pengetahuan	0 (0%)	19 (45.2%)	23 (54.8%)
7	Mempunyai daya kreativiti dalam menyelesaikan masalah tugas	8 (19%)	13 (31%)	21 (50%)

PERBINCANGAN

Dengan itu, boleh disimpulkan bahawa dapatan kajian ini membuktikan semua majikan berpuas hati dengan prestasi pelajar Kolej Komuniti Jelebu semasa menjalani latihan industri dengan purata 92%, mahupun demikian peribadi pelajar dengan purata 95%. Dapatan kajian yang dijalankan secara kualitatif kurang memuaskan pada tahap awal latihan industri dijalankan telah berubah kepada memuaskan di akhir program latihan industri. Peningkatan kualiti dan persepsi majikan terhadap pelajar latihan industri mungkin disebabkan pelajar telah memperbaiki kelemahan mereka melalui pengalaman kerja. Secara tidak langsung, program latihan industri dapat memenuhi kehendak industri. Usaha Kementerian Pendidikan Malaysia membangunkan dasar Latihan Industri IPT memberi peluang kepada pelajar untuk merasai dunia sebenar pekerjaan supaya dapat meningkatkan kebolehpasarannya (Kementerian Pengajian Tinggi, 2010). Akhirnya objektif latihan industri berjaya dilaksanakan.

Dapatan kajian ini adalah sama dengan kajian yang telah dibuat oleh Omar (2009), di mana pelajar latihan industri mendapatkan markah penilaian yang tinggi dari majikan di akhir program. Ini turut disokong dengan kajian yang telah dilakukan oleh Rashidah & Nurhuda (2009); di mana tinjauan persepsi majikan di Kolej Komuniti Kuala Langat untuk Sijil Perakaunan Perniagaan turut mendapat penilaian yang baik daripada majikan.

Little dan Harvy (2006) turut menyatakan bahawa pengalaman adalah penting bagi seseorang pelajar itu kerana ia merupakan syarat utama yang membolehkan kebolehpasaran dan peningkatan gaji apabila bekerja kelak. Dalam kajian ini, persepsi majikan yang paling tidak memuaskan untuk STE adalah dari segi kemampuan pelajar tersebut bekerja sendiri dengan pengawasan minimum, iaitu sebanyak 51% sahaja. Ia tidak mengejutkan kerana pelajar terbabit adalah pelatih yang hanya mengikuti pengajian selama setahun di kolej komuniti. Pelajar masih belum dapat menyesuaikan diri dengan suasana kerja sebenar. Bidang tugas yang diberikan mungkin berlainan dengan majikan dengan pensyarah jika dibandingkan dengan pengetahuan yang dipelajari di kolej. Selain itu, peratusan persepsi majikan berbeza mengikut bidang disebabkan bilangan pelajar yang menjalani latihan industri. Persepsi majikan terhadap pelajar STE secara purata adalah 100% dengan hanya 32 orang pelajar terbabit dengan latihan industri jika dibandingkan dengan pelajar SPM 42 orang. Dapatan kajian ini adalah memuaskan jika dibandingkan dengan kajian telah dilakukan oleh Zuhairuse et al (2007), iaitu dapatan kajian daripada persepsi majikan secara teknikalnya masih banyak kelemahan yang perlu diperbaiki.

Kajian lanjut boleh dilakukan untuk mengkaji kesan perlaksanaan latihan industri terhadap pelajar yang telah mengikut latihan industri. Adakah ada mempunyai peningkatan yang ketara dari segi kemahiran dan pelajar tersebut pemilihan tempat latihan industri sebagai pilihan pertama untuk memulakan pekerjaan selepas tamat pengajian serta majikan lebih suka menerima pelajar latihan industri yang telah tamat pengajian di kolej komuniti untuk bekerja dengan mereka.

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A NEW FRAMEWORK FOR THE INDUSTRY-POLYTECHNIC COLLABORATION FOR INNOVATION AND COMMERCIALIZATION

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Keywords: Collaboration, polytechnic, collaboration framework, innovation value chain and industries

Abstract. This paper was prepared with the purpose of outlining the details of the implementation of the research project with the title "A new framework for the industry-polytechnic collaboration for innovation and commercialization", carried out by the research group formed for this project under the supervision of the Research and Innovation division in the Department of Polytechnic Education, a division in Ministry of Higher Education. Polytechnics' staff and students have been implementing innovation projects but there are no proper guidelines which can propel the effort to improve collaboration with the industries in this area to create a meaningful impact. In this report, the analysis of the findings is discussed and summarized to facilitate the establishment of conceptual framework of the subject under study. The formation of a conceptual framework will be based on the evidence and interpretation from the findings of this research. In this study, the researchers used mix-method approach, both quantitative and qualitative. The methods are as follows (1) Document search in order to interpret the existing body of knowledge, (2) Survey to identify current issues and gather opinions from the existing practices at both the institutions and industries that have already had collaboration experiences and innovation, (3) Face-to-face interview focussing on respondents' perception, Innovation Value Chain (IVC) and expectation on collaboration, and (4) In-depth-interview focussing on respondents' perception, IVC and expectation on collaboration from experts in the industries. The respondents from the institutions as well as from the industries are those who had been involved in previous institution-industry collaborations. It was found that there was no proper procedures or guidelines had been introduced in both the institutions and the industries. The findings from the document search are used to design the research framework and initial IVC framework. The survey method is used for quantitative data collection and in addition, interviews are used to collect qualitative data from both groups of respondents. All methods contribute to the analysis and the results are used to propose a framework for collaboration with the industries in the scope of innovation and commercialization.

Introduction

The study of this new framework for the industry-institution collaboration for innovation and commercialization was initiated by the Division of Research and Innovation in Polytechnic Education Department. Innovation products in the technical institutions especially by the polytechnic students are abundant in quantity but after certain period of time, they become futile products without any commercialization effort. In fact, most of the products invented by researchers and students were the outcome from discussions and co-operation with the subject experts. In this study, we adopt the definition of commercialization as the process of bringing science and technology capabilities or research and development (R&D) results into the marketplace (Lockett and Wright, 2005).

The purpose of this study is to bridge the gap in collaboration by investigating the collective opinions between the industry and the institution in commercialization of products and innovation. The Malaysian Government, industries and academicians are increasingly focused on the critical role that R&D plays in creating wealth and competitive advantages. Our government believes that the long term economic success depends on the transformation of a manufacturing-based economy to an R&D based economy. The Federal Government has allocated millions of ringgit into commercialization efforts in order to make research and innovation products more attractive to the industry.

Many studies reported that the sharing of knowledge among research institutions and industry can improve their innovation capability which improves marketability of products and services, and in turn is probably the only way for the industry to gain competitive advantage in the long term. Therefore, researchers and industry should collaborate in order to share their opinions and expertise to create harmonious functional strategies (Lin *et al.*, 2006).

The partnership or collaboration between institutions and industries cannot be simply established without a proper framework and guideline. There have been many cases of failed collaborations between the two entities involved. Unfortunately a framework for such collaboration is yet to be established in Malaysian polytechnics and community colleges, particularly a framework which suits the Malaysian scenario. While the framework for Malaysian universities has been independently initiated by the respective institutions, no such evidence is taking place for polytechnics and community colleges or technical and vocational institutions.

Polytechnics and community colleges focus more on applied and practical sciences and engineering (as opposed to theoretical / fundamental types in universities) and may have better chances and opportunities towards commercialization of innovation products. Products developed by polytechnics and community college lecturers and students tend to be of incremental innovation types which are easier for implementation and market penetration. Thus, although high level inventions are not typically expected from polytechnics and community colleges (compared to what are expected from universities), the innovations produced by these institutions also have high potential for commercialization.

This study intends to investigate the issues in current practices of industry and institution collaboration for commercialization of innovation products, and to recommend a practical framework which will help to foster a closer relationship between institution and industries with a clear process flow towards commercialization.

Problem Statement

Technical and Vocational Education and Training (TVET) institutions under MOHE are expected to collaborate with industries to expedite the output of innovation products, enhance existing processes or improve existing services. However the number of successful collaborations are too few to mention, less impactful and not sustainable.

There is not yet a formal workable framework of collaboration with industries in these institutions which can be considered as an accepted guideline towards this cause (innovation and commercialization). Current attempts at commercialization of research output are on ad hoc basis and more on the transfer of knowledge without commercial transaction. In such cases the benefits are very much on the industry's side whereby as a result of application of such knowledge can improve their productivity which in turn, increase sales income without having to formally acquire the technology at commercial rate.

Objectives of the Research

This study embarks on the following specific objectives:-

- To investigate the issues and problems associated with the development and commercialization of products from the research and innovation work undertaken at the polytechnics and community colleges.
- To develop a framework for the institution-industry collaboration based on innovation value chain and gap analysis which could lead to an implementation guide

Research Methodology

In this study, the researchers used mix-method approach, both quantitative and qualitative. The methods are as follows:-

• **Document search** in order to interpret the existing body of knowledge.

• **Survey** to identify current issues and gather opinion, in existing practices at both institution and industries that already have collaboration experiences and innovation.

• **Face-to-face interview** focusing on respondent perception, IVC and expectation on collaboration from institution.

• **In-depth-interview** focusing on respondent perception, IVC and expectation on collaboration from experts in industries.

The findings from the document search are used to design the research framework and initial Innovation Value Chain (IVC) framework. The survey method is used for quantitative data collection and in addition, interviews were used to collect qualitative data from both groups of respondents. All methods contribute to the analysis and deductions in order to propose a framework for innovation and collaboration. During the administration of the survey, the researchers distributed questionnaires to 765 respondents in which they have to complete the questionnaires. The institutions, namely polytechnics and community colleges were chosen at random from all over Malaysia.

The researchers also carried out 29 face-to-face semi-structured interviews with key respondents from institutions using the protocol and the interview guide questions developed. The respondents from the institutions were lecturers or heads of departments who deal with innovation products either personally or as a supervisor for students' projects and also those involved in the collaboration with industries. The information from the interview process was audio-taped and transcribed for analysis.

The interviewees' (qualitative approach) data help the researchers to support results and analysis from the more rigorous quantitative findings. It also helps the researchers to explore areas that were initially difficult to conceptualize. For the qualitative data, the researchers carried out 12 face-to-face semi-structured interviews with key respondents from industries using the protocol and interview guide questions developed. The in depth interview focused on respondents' perception, issues, Innovation Value Chain and expectation on collaboration from both parties

The respondents from the industries were the subject matter experts, either the management personnel and/or project leaders . The information from the interview process was audio-taped and transcribed for analysis.

Selection criteria for the industries were:

• In the same type of sectors or technical field as the courses offered by institutions.

• a mixture of local and national, small and medium industries.

Finding and Discussion

- **Perception of institutions on the importance of innovation and issues faced in the collaboration.**

In this study, institution respondents were asked about their perceptions on innovation and the issues faced in research and development collaboration with the industry. The perception and attitude of respondents on the importance of innovation are reflected by their responses to questions 1&2 and these indicate the internal strength of the institutions. Generally the institutions have very high regards for innovation in their operational activities. Most respondents in the institutions (87.6%) agreed that innovation is important. Majority of the respondents agreed (at least 90%) that innovation can be implemented in a number of innovation output such as products, services and processes in their own organizations.

Questions 3, 4 & 5 are a gauge/measure of readiness and confidence of institution to engage in collaboration with industry. Findings show that these institutions currently have high readiness (88.7%) to collaborate with the industry. These findings also show that institutions have high level of confidence (95.1%) in the technical capability of industries to help institutions solve their problems. Institutions also have high confidence (92.9%) that the innovation and commercialization collaboration with industry will be protected.

The above findings indicate that a suitable intervention will be able to facilitate good innovation collaboration with industry in these institutions.

- **Innovation Value Chain (IVC).**

The proposed innovation value chain (IVC) was shown to the respondents and several questions were asked about it. Findings show that only 64.3% respondents regard that the IVC is important as a reference for innovation activities in their organization; however most of the respondents (89.5%) are not familiar with the IVC shown to them.

In the same regards, most of the respondents (82.8%) have not used any specific IVC, innovation process or management tool similar to the proposed IVC shown to them. When shown the proposed sample of IVC with the process involved, more than half of the respondents (70.7%) perceived the sample IVC as wrong. These findings indicate that the acceptance for the proposed IVC framework is quite low due to low awareness, construct being too detailed and complex or there is a need for formal implementation and guidelines to put them into daily operational process of the institutions.

- **Collaboration Commitment and Expectations.**

The issue of collaboration commitment and expectations within institutions and industries shows (83.9%) that they are very open on issues on daily operational problems that may be solved together with the industries. It is found that almost all institutions perceived that they are very open in sharing these issues with industries and also have innovative ideas among their staff. Institutions' perception of their openness was studied in three issues namely in financial, human resources, facility and marketing network. Findings show that almost all institutions perceived that they are open to contribute into these factors with industries. The highest percentage of institutions being very open was 92.4% on finance factor.

Findings show that almost all institutions perceived that they are very open to help evaluate new ideas from the industry and to help evaluate new completed products from the industry. Institutions are also ready to form joined-committee with the industries for innovation commercialization purposes.

- **Institution's level of commitment to contribute to the collaboration**

In this construct, four phases such as idea generation, research, development and commercialization were discussed. The discussions covered four factors namely funding, human resources, facilities and policy or governance. In the idea generation phase, at least 25% gave strong commitment to collaboration in funding. In the research phase, at least 30% of the institutions gave strong commitment to contribute to the collaboration in funding any stage of the value chain process. The highest percentage of institutions' willingness to collaborate was for process report writing (31.3%) and the lowest percentage in viability (reliability) analysis.

As for the development phases, all processes in the value chain show at least 25% of the institution's commitment to contribute in the product development, commercial prototype 25.4% and in IP protection with 24.3%. All of the value chain processes in commercialization phase show a moderate level and lower level on business plan development (26.5%) and the lowest, is the percentage in the process of initial soliciting (21.1%).Findings also show institutions willingness to contribute human resource towards the collaboration with the industry. In both processes of idea generation phase; 40.6% of the institutions gave strong commitment to contribute to the collaboration in human resource. The institutions claimed that they would be able to commit slightly higher in the conceptualization of idea than in conception of the idea process. In the research phase at least 40.7% of the institutions gave strong commitment to contribute human resource to the collaboration at report writing. The percentage of institutions willing to collaborate was for process of product development and testing with 35%, publication (39.2%) and the lowest percentage in IP protection (28.2%).

As for development phase, in all processes in the value chain, institutions showed a moderate level of commitment to contribute to the collaboration for human resources. The highest percentage was at 39.4% in Fields trials & subject matter expert (SME) and the lowest percentage (26.3%) in track records establishment. In commercialization phase, institutions are willing to contribute human resource in business plan development (31.9%) and the lowest percentage (25.4%) in the process of funding.

- **The expectation of Institutions on the Ratio of contribution for successful industry-institution collaboration for innovation and commercialization.**

The findings show that the institutions expect fairly equal contribution from both the industry and the institution in all phases in order to make the collaboration work. Institutions are willing to contribute more in conception of idea (idea generation phase), Intellectual property protection (research phase) and product screening and prioritization, commercial prototype and track record establishment (in product development phase) and initial soliciting, funding and business matchmaking (in the commercialization phase).

Qualitative data analysis -Institution

All 354 respondents were asked the open-ended question on the three parameters in the survey, however only about 30% of the respondents contributed opinions, comments and suggestions. These were similar in nature and have been tabled as below to show the frequency of occurrence.

- **Perception of institution on the issues faced in the collaboration.**

QUESTION : In your view, what are the main hindrances that make industry institutions collaboration in Malaysia not at the best of conditions?

Most suggestions were related to funding, in particular the lack of funding for innovation collaboration. Respondents also suggested that the lack of knowledge and information as a hindrance to collaboration. Most innovation and research in polytechnics are related to student curriculum and time frame; they usually have one year to prepare and execute the research at the end of the final academic year. These short-term research outputs may be at a very small scale and therefore it becomes very difficult for industry to predict if the technology application can be adopted by their in-house manufacturing process and existing machinery. Therefore industry is not willing to finance such collaboration.

On the other hand research and innovation needs of the industry have very focused scope and timeframe - they are constrained by their customers' contractual specifications and purchase order time frame; these two situations may not match each other for a collaboration to occur in the short term. On the other hand the industry usually focuses on a specific production line defined by the machinery and equipment designed for that particular process and usually this industry manufactures the same family of products over a number of years. In industry the research done is usually to design the most cost effective production/manufacturing process that gives the least number of rejects so that productivity and profitability can be optimized.

Usually each type of industry may have a few long term unsolved manufacturing problems that can be the "problem statements" for some short term research; however this means that the industry has to "share" their company problems (secrets) with the research team. If the industry is willing to "share" their manufacturing problems and institution is able to assure confidentiality; some good collaboration can be established based on recurring manufacturing problems specific and peculiar to that industry or manufacturer.

In the above situation, there may be opportunities to create short term research projects based on those recurring problems under confidential arrangements with the industries and these may be partially financed by the industry. Such opportunities may also create long term relationship. Institutions would be ready to explore such possible opportunities if there are clear guidelines to protect their conduct in such undertaking; considering that all polytechnics and community colleges are under the government rules and regulations.

Research time frame is too short to produce a product has also been suggested as a hindrance to collaboration. A product is made up of many different components and usually a short term research can only produce a conceptual product or laboratory prototype; at this stage the industry is not able to "see or appreciate the prototype and may not consider it relevant to its own manufacturing line. There is a manufacturing or industry gap between the research output and the industry process. The institution needs to do some "up-scaling" or industrialization of products so that the industry would be able to appreciate and adopt the products. In the process, the institution will be able to improve the quality of product innovations and research.

This will match well with the suggestion from the industry that polytechnics should focus on market pull technology research so that the output can be readily adopted and commercialized by the industry. Respondents suggested that there may be some lacking in the mental preparation and readiness to collaborate with the industry. There are some differences in the "language" or technical terminologies of importance between the industry and institution. Researchers need to learn the language of industry; need to know what is critical, important or significant as far as the technical realm of their manufacturing process. This will lead to some common interest that can become an opportunity for collaboration

Respondents also suggested that IP protection process should start at very early stages of the innovation research. This is in line with the international practice of confidentiality of innovation research work and in any case publication or exhibition of the research work should only be after IP protection.

- **Innovation Value Chain (IVC)**

An initial IVC guide was used for this study and summarized as in the table below:

Level of Innovation Value-Chain (IVC)	Processes in IVC according to level (examples)	Forms of Contributions Offered during Industry-Institution Collaboration
Idea Generation	Steps from conception of ideas to conceptualization	
Research	Steps from novelty analysis to development of lab-prototype products or services	Funding, HR, Facilities, Policy and Governance
Development	Product screening to development of commercialization prototypes	
Commercialisation	Initial soliciting to business matching or other arrangements	

Table 1: Initial Innovation Value Chain

QUESTION : Are there any modifications that you would like to suggest to improve the overall IVC? Or any parts of IVC process?

Generally most respondents were unfamiliar with the proposed IVC and some of them may have just seen it for the first time. Nonetheless innovation process does take place and has been happening in the polytechnics for a very long time. In most cases, there were no formal documentation process to capture a database of these outputs and most of them do not have IP protection.This process may be critical in order to improve the innovation commercialization in polytechnics and a simple generic guideline will be very useful as a starting point. The guideline has to practical and easy to adopt in the daily operations of all polytechnics which are all at various different levels of readiness.

- **Collaboration Commitment and Expectations**

QUESTION: In the final part of the survey institution respondents were asked what they are willing to commit and what they expect from the industry in order to establish a good innovation collaboration. In collaboration initiatives, participating members are expected to contribute to a certain extent to the success of the projects. The respondents were required to explain their expectation on the role of institution in industry-institution collaboration. While doing this, they were advised to use the initial IVC framework as a guide.

In such collaborations among diverse entities, there is a need for mutual respect of each others' expertise, professionalism, common practices and authorities. The managing director of a large manufacturing industry may not be highly qualified in the academic field but may be well-respected in the industry. Similarly a top management in the polytechnic may not be familiar with the manufacturing process but may have vast knowledge in fundamental research. If both parties can find a neutral communication platform, then information flows can lead to the start of innovation research collaboration. The above scenario of institution industry interactions can be promoted by starting some clear cut guidelines and terms of reference with the stated KPI within a set timeframe so that the activities become a global agenda for all polytechnics and community colleges in Malaysia.

If this is well publicized the industry may be alerted to engage with the polytechnics in their locality to exploit any opportunities for their problems to be solved. Publicity is very important for the industry as it will build their branding especially in the research and knowledge areas. It is proposed at this stage that the outcome of this survey research should include a clear-cut generic guideline to protect and promote institution industry innovation collaboration which is suitable to all polytechnics and colleges in whichever field of specialization. It should also cater to confidentiality of companies' proprietary information and Malaysian law.

- **Perceptions of Industries on the Issues Faced in the Collaboration**

In the survey, the respondents were asked about their perception on the issues faced in research & development collaboration with the institution. Our findings showed that most industries (70%) perceived that IVC is important for innovative activities. Slightly higher than half of them were familiar with the IVC, while less than 20% of the companies use any specific IVC.

Conclusion

Successful collaborations depend on both parties, respecting and trusting each other on all aspects of parameters needed for collaboration. All terms of References (TORs) and prepared guidelines are the required documents to be adhered to apart from good progressive monitoring from both collaborators. Although there were issues and constrains as briefly outlined in previous chapter, possibilities for successful IIC were high taking into consideration of the positive feedback in term of commitment with regard to sharing the enablers of IIC namely funding, human resource, facility and governance. This is shown from data by combining percentages of those willing to give strong commitments and those just willing to commit (in between).

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Concept paper: Potential Leucaena Leucocephala as new material for the development of green technology in the manufacture of photoconductive antenna (PCA)

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Keyword: *Leucaena Leucocephala*, *Photoconductive Antenna* (PCA), green technology, *Printed Circuit Board (PCB)*.

Abstract: Various techniques has been planned to conserve green technology implementation including developing new material product as alternative to the industry through reusable resources. Green technology research expended to the fabrication of Printed Circuit Board (PCB) substitute of current material such as fiber glass material substrate (FR4). The concept paper is aim to determine the potential of *Leucaena Leucocephala* (known in Malaysia as petai belalang) as an organic new material for fabrication of photoconductive antenna (PCA).

INTRODUCTION

Photoconductive Antenna (PCA) is the most popular device have been used in two last decades to generate unique and attractive properties of terahertz (THz) wave using laser beam for several real-world applications, such as security, biology and medicine, and communication. Normally a PCA has a coplanar stripline structure consists of a semiconductor substrate and a coplanar stripline with a dipole antenna fabricated on the substrate [4]. The common structure of PCA is shown in figure 1. Labeled D on the diagram is biased by DC voltage labeled as A is probed by femtosecond pulses to generate THz wave.

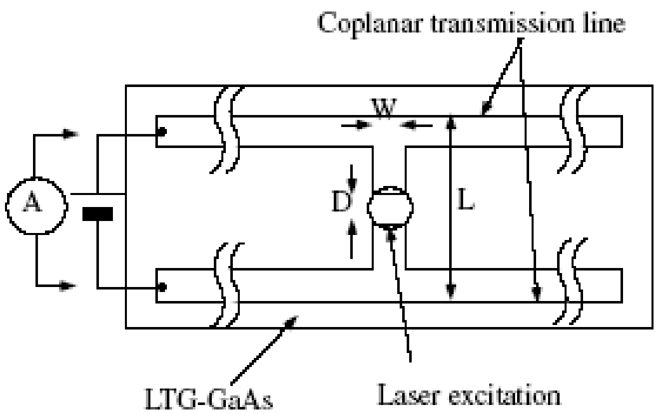

Figure 1: Common structure of PCA

Based on literature research, PCA commonly made from *low growth temperature gallium arsenide* (LT-GaAs) for THz generation due to its very short carrier lifetime, relatively high carrier mobility and breakdown voltage. However there are few difficulties due to aforementioned fabrication problem. Other materials which have a high breakdown voltage and good carrier mobility are considered as promising alternatives for LT-GaAs in PCA [4]. Commonly, antenna substrate made from fiber glass material substrate (FR4) is used as alternative solution to existing expensive substrate product by Rogers Corporation Company and Taconic Company. An alternative material that has the added value of green technology is aimed. Green technology is an option to preserve the environment and maintain the balance of nature by minimizing the direct impact of existing technologies. In addition to improving economic development is expected to reduce dependence on existing material sources. Among the techniques of implementation of green technology is to develop new products.

To implement green technology product, not only related to energy saving and renewable energy but also can expanded to fabrication of Printed Circuit Board (PCB) undergoes the process of Wood Plastic Composite (WPC) technique [5]. This concept paper is study potential of *Leucaena Leucocephala* for development of green technology in fabrication of Photoconductive Antenna (PCA) substrate as substitute of FR4. Composite material from *L.Leucocephala* sawdust and thermoplastic is selected as substitute substrate material for PCA with better antenna performance than FR4 substrate material. Other than that, potential of *L.Leucocephala* can be highlighted as the valuable material internationally.

L.Leucocephala (refer with: Figure 2(a), Figure 2(b)) is a semi-wild plant of the legume family originally found in Central America and Mexico. In Malaysia, the plant is known as a *petai belalang* are easily growth at roadside in extreme hot weather. *L.Leucocephala* traditionally used as blood pressure and diabetes remedy. In biotechnology, East Coast

Economic Region Development Council (ECERDC) found that *L.Leucocephala* is an important raw material in the production of biopolymer and biochemical products [source: Kosmo and Bernama]. In addition, the exploration project collaboration among UiTM Pahang and Universiti Thailand managed to find new energy sources using *L.Leucocephala* wood. This new energy is an alternative to existing energy sources like oil, gas, coal and hydro [New Straits Times, Thursday, April 28, 2012]. Features of *L.Leucocephala* also studied and identified potential as Oriented Strand Board (OSB) and achieve the requirements of the European standard [8].

Figure 2(a): *Leucaena leucocephala* tree

Figure 2(b): *Leucaena leucocephala* wood

In order to determine the potential of the proposed substrate in the surrounding of electromagnetic and antenna substrate, the measurement of the electrical characteristic seems very significant. All the parameters such as dielectric constant (εr), loss tangent (tan δ), carrier mobility, resistivity and carrier lifetime will be measured by significant measurement device in order to obtain antenna performance.

RESULT AND DISCUSSION

Data gathered from significant measurement is analyzed and the result (refer with: Table 1) shows agreement with the existing research, the *L.Leucocephala* has a tendency potential be used as substrate antenna of Photoconductive antenna (PCA) with the parameter (carrier mobility and resistivity) meet the antenna performance specification.

Table 1: Comparison the principles of photoconductive material parameter of different substrate material.

Material	Mobility (cm2/V.s)	Resistivity (Ω.cm)
WPC 30% *L.Leucocephala* + 70% polypropylene (150μm particle size) [8]	3.06E+03	3.56E+09

GaAs [10]	3E+03	2E+00
Ion-implanted GaAs [11]	2E+03	2E+00
Be-doped LTG InGaAs [12]	1.9E+03	1.2E+05
Fe-implanted In GaAs [12]	1.5E+03	1E+03
WPC 30% *L.Leucocephala* + 70% polypropylene (500µm particle size) [8]	5.05E+02	7.84E+07
ErAs:InGaAs [13]	4.9E+02	3.4E+02
Cold Fe-implanted InGaAsP [12]	4E+02	1.2E+03
WPC 20% *L.Leucocephala* + 80% polypropylene (150µm particle size Sample B) [7]	2.43E+02	9.21E+07
WPC 20% *L.Leucocephala* + 80% polypropylene (150µm particle size Sample E) [7]	2.28E+02	9.26E+07
LTG GaAs [14]	2E+02	1E+07
WPC 20% *L.Leucocephala* + 80% polypropylene (150µm particle size Sample C) [7]	1.34E+02	7.60E+07
Be-doped LTG In GaAs [15]	1E+02	7E+02
ErAs:GaAs [16]	1E+02	1E+05
WPC 20% *L.Leucocephala* + 80% polypropylene (150µm particle size Sample D) [7]	4.40E+01	2.63E+08
WPC 20% *L.Leucocephala* + 80% polypropylene (150µm particle size Sample A) [7]	1.75E+01	8.62E+07

CONCLUSION

Understanding the substrate properties is very significant before it can be used as substrate antenna in improving the Photoconductive antenna (PCA) performance. Although many researchers have been developing new material based on GaAs family, this concept paper study potential organic material as an alternative for common material in order support green technologies. There is a possibility of using *the L.Leucocephala* to serve as one of the alternative for design antenna and electromagnetic usage in order to support green technology. Various techniques are revealed depending on suitability of device as well as experimental capability. Different sample and particle size are influence on result but shows strong evidence that *L.Leucocephala* has potential be used as substrate material of PCA.]

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PROJECT-ORIENTED PROBLEM-BASED LEARNING (POPBL) APPROACH FOR PROJECT COURSE AT MECHANICAL ENGINEERING DEPARTMENT, PNS

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Keyword: POPBL, Project, Mechanical

Abstract: POPBL strategy, student were exposed to real life situation solving particular problem related to project course. In a traditional curriculum most programs are designed based on isolated subjects/disciplines. However in POPBL, real-life or real-world problem (authentic) which is interdisciplinary or multidisciplinary (trans-disciplinary) as well as will structured (complex) in nature will be the focus of course or programme. Respondent in this experiment were 40 students currently enrolled at Mechanical Engineering Department, Politeknik Nilai (PNS). The result show that the mean value for each criterion within the range of 4.050 to 4.675. It is proven that POPBL is suitable to be implemented in the Project. POPBL approach was implemented as a project-based, where students were given a real-world problem. The student has more opportunities for creativity and innovation in problem solving. As project skills are importance in professional work, so by implement the POPBL student can obtain a lot of qualifications and increase learning.

Introduction

Today, many educational institutions undertake analyses that lead to the educational change in a form that reflects more on the requirements and needs of modern communications and collaborative society, and one that reflects more on the demand of modern students. This means institutional rethinking and restructuring- not only for an organizational change, but for personal change and culture change as well. Furthermore, it is necessary to identify an educational model that focuses on professional subjects and on students' personal skill and their abilities to learn, as well as life-long learning abilities.

Project Oriented Problem Based Learning (POPBL) is one of the educational models to achieve the aforementioned education transformation. A problem based approach to learn enables students to learn both content and thinking strategies by advocating experiences based education of solving complex problem that does not have a single correct answer [1]. This method also believed could enhance the students' interpersonal skill, entrepreneurship skill, management skill and research skill [2]. However, the students must be able to tolerant, collaborative reflective and stimulate each other as to increase motivation and learning process while the teacher become a non-dominant facilitator with an open minded, committed and stimulating attitude for the student team [3]. This educational approach is believed to improve the quality of teaching and learning which requires a change in paradigm as well as system set up (Mohammad Fahmi Abdul Ghafir, 2007).

According to [5], many educators has experienced that students were able to plan and manage the project but they lack of research and argumentative ability when looking for a problem and discussing the issues. By employing POPBL approach at least it has some structure at all phases. This method also has been suggested to be practice in Polytechnics [6]. This paper reviews the experience of the initiation and implementation of Project-Oriented and Problem Based Learning (POPBL) for Project course. Respondent in this experiment were 40 students currently enrolled at Mechanical Engineering Department, Politeknik Nilai (PNS) and registered this course.

Introduction to Project

PROJECT introduces the students to the concept in conducting a design or case study. As shown in Table 1, the students select a project, list the project needs, the project process involve, cost estimation, project schedule and applied appropriate methodology in the project planning. It also involves project implementation, project report and presentation [7]. This subject is one of compulsory course for student to graduates. Through this course, the students should be able to achieve the following learning outcome:

1. Classify the selected design or case study. Identify the design or case study category. Select the design or case study to be carried out.
2. Plan the selected design or case study and apply appropriate methodology.
3. Implement the selected design or case study based on the project planning.

Table 1: Syllabus of Project Course for Mechanical Engineering Student

<table>
<tr><th>TOPIC</th><th>Syllabus</th><th>Assessment Phase</th></tr>
<tr><td rowspan="2">1</td><td>PROJECT SELECTION AND CLASIFICATION</td><td rowspan="4">Problem Analysis and Design</td></tr>
<tr><td>Classify the selected design or case study. Identify the design or case study category. Select the design or case study to be carried out.</td></tr>
<tr><td rowspan="2">2</td><td>PROJECT PLANNING</td></tr>
<tr><td>Plan the selected design or case study and apply appropriate methodology.</td></tr>
<tr><td rowspan="2">3</td><td>PROJECT IMPLEMENTATION</td><td rowspan="2">Development & Testing
Re-development (evolution) & Testing</td></tr>
<tr><td>Implement the selected design or case study based on the project planning.</td></tr>
<tr><td rowspan="2">4</td><td>PROJECT REPORT</td><td rowspan="2"></td></tr>
<tr><td>Prepare a complete project report based on the PRIME,</td></tr>
</table>

	design or case study concept.	
5	**PRESENTATION** Prepare a good presentation. Plan the presentation and distribute the task among group members.	

POPBL in Project Course

Project skills are important in professional work, so by combining problem based learning (PBL) and project work student typically obtain a lot of qualifications and increase learning [3]. The importance of POPBL is undeniable due to future scenarios that learners have to face in their workplace as technical engineer; when they have to develop framework and design as an effort to solve real-world problems, exploring creatively the possible solutions and independently undergoes lifelong learning to cope with rapid changing engineering technologies nowadays [8]. In Denmark, one-hundred and twenty-five major engineering institutions and firms have given Aalborg University POPBL learning process the best grades in professional competences, technical competence, project management and creativity and innovative skills [3].

The process of implementing POPBL in this course is based on the basic principles of POPBL [1]; which can be summarized as:

- Student-centered and able to motivate and gain commitment among students
- Problem-oriented and not subject oriented
- Focus is more on learning process in finding solution rather than recall knowledge
- Project Based which has goal and action for change
- Exemplarity instead of generality
- Promote group work/team work, social and communication skills.

Sample in this experiment were 40 students currently enrolled at Mechanical Engineering Department. Based on the essence of POPBL, the framework (fig.1) used consist three main stages. During the onset stage, lecturer divides students in four people in a group. Each group consist both gender and multi race and a supervisor to help the student to be in track at all time. The students are also well aware of what is expected and when the assessments take places which it is in the executive stage. A post-mortem on how effective the POPBL on the student is done among the lecturers on the closure stage. An instrumentation are used to help the post-mortem.

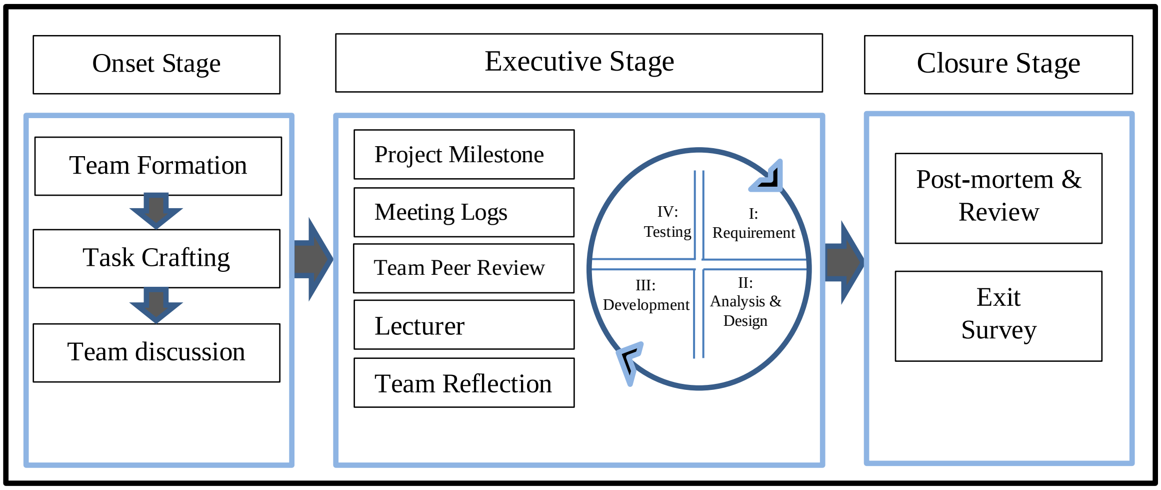

Fig1: POPBL Framework Design

Instrumentation

In order to increase its validity and reliability, questionnaires for this study was partly developed by integrating the research objective, POPBL concept, and literature review. The questionnaires are designed to measure the three main perspectives to be achieved in the POPBL framework components, namely; i) problem solving, ii) team work and iii) collaborative learning; with a total of nine questions being asked to assess the students feedbacks on these three components. Based on the pilot test conducted on 15 students, the Alpha Cronbach obtained at 0.851. Respondent in this experiment were 40 students currently enrolled at Mechanical Engineering Department, Politeknik Nilai (PNS).

Result and Finding

Forty students have successfully participated in the survey at the end of the semester. Most of the questions which are mapped to the acquired criteria for the three POPBL components, are measured through five Likert scales: 1-Strongly disagree, 2-Disagree, 3-Undecided, 4-Agree, and 5-Strongly Agree. The result is shown as in Table 2 and fig 2.

Table 2: Mean result and percentage for each criteria in questionnaire

Criteria	**Item**	**Mean**	**Percent (%)**
A.	**SOLVE PROBLEM**		
1	I am able to retrieve relevant information from various sources and always able to analyze and integrate acquired information with own ideas.	**4.250**	**85.0%**

2	I am clear and focused; able to reflect in-depth knowledge of topic. Ideas are based on experience/ research and well supported by details.	**4.050**	**81.0%**
3	I am able demonstrate that I am capable to learn independently	**4.175**	**83.5%**
4	I am able to identify the problems and able to determine the objective and scope clearly, precisely and completely	**4.025**	**80.5%**
B.	**TEAM WORK**		
1	I am able to focus on tasks that need to be completed before the deadlines and able to produce high quality work according to proper procedures.	**4.675**	**93.5%**
2	I able to display excellent effort and commitment in performing tasks, such as attendance, punctuality, enthusiasm, vitality, and optimism in performing and performing and completing tasks.	**4.475**	**89.5%**
3	I am able to apply all steps involved in PRIME concept and apply all steps involved in the design concepts to solve problems.	**4.325**	**86.5%**
4	I am able to work in team to solve problems.	**4.575**	**91.5%**
C.	**COLLABORATION WITH MULTIDICIPLINE**		
1	I am able to work with other department/industry to gain knowledge in solving problems	**4.050**	**81.0%**

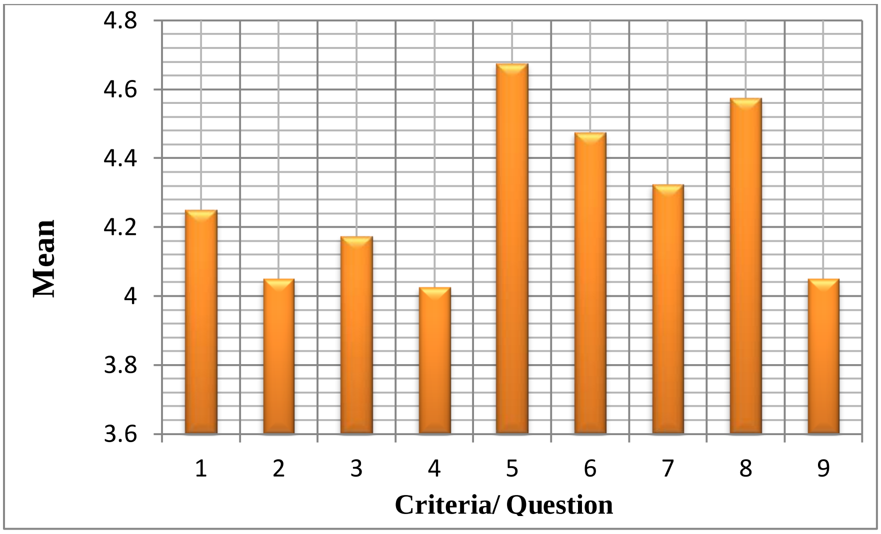

Fig 2: Mean value for questionnaire

The result show that the mean value for each criterion within the range of 4.050 to 4.675 (80.5% to 93.5%). It is proven that POPBL is suitable to be implemented in the Project course for Mechanical Engineering at Politeknik Nilai (PNS). POPBL approach was implemented as a project-based, where students were given a real-world problem for specific case study applications which is complex enough for beginner students. Students were assigned in a team to solve the identified problems of the selected project throughout the three phases in POPBL. The results findings from the conducted survey have shown that students are highly motivated and satisfied with POPBL implementation towards improving their soft-skills (communication between team member and planning) as well as their technical skills (analyzing real-world problem, designing the structured solutions and developing the products). However, POPBL implementation will require enormous effort and preparation from lecturer.

Conclusion

POPBL is a successful method to increase collaborative and innovative learning. Based on result, the student has more opportunities for creativity and innovation in problem solving. As project skills are importance in professional work, so by implement the POPBL student can obtain a lot of qualifications and increase learning.

In future, it is hoped that our experiences on POPBL implementation in the Project 1 for Mechanical Engineering students, could motivate ourselves as well as other lecture in Mechanical field especially, to apply this pedagogical approach in our teaching and learning activities. Furthermore, the proposed POPBL procedural framework and its implementation should be custom-designed to be applied in other coursework in terms of the complexity level for the given real-world problem based on students' year of studies and exposure.

In order for engineering students to be able to handle sustainability-related problems, their education needs to allow for interplay, mix and diversity; aspects that a problem-oriented and project-based learning approach will involve.

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Asimilasi Istilah Bahasa Arab dalam Institusi Perbankan Islam di Malaysia

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Keywords: Istilah bahasa Arab, perbankan Islam, syariah islamiah,

Abstrak. Kajian ini bertujuan untuk menjelaskan definisi istilah Arab dan menganalisis penggunaan istilah bahasa Arab dalam produk perbankan Islam di Malaysia yang berteraskan Syariah Islamiah serta bebas daripada unsur riba. Fokus kajian menjurus kepada 20 jenis produk perbankan Islam dalam istilah bahasa Arab yang digunakan oleh institusi perbankan Islam di Malaysia. Kajian ini melibatkan 15 buah institusi perbankan Islam, iaitu merangkumi tiga (3) buah institusi perbankan di bawah kerajaan Malaysia dan 12 institusi perbankan swasta tempatan dan luar negara. Pendekatan kajian yang digunakan dalam menjalankan kajian ini ialah kaedah analisis deskriptif bagi menjelaskan definisi istilah Arab dan analisis kuantitatif bagi menganalisis kekerapan dan peratusan penggunaan istilah bahasa Arab dalam produk perbankan Islam dengan menjadikan dokumen institusi perbankan Islam di Malaysia sebagai data premier. Dapatan kajian mendapati bahawa istilah "Al-Mudharabah" paling tinggi bilangan penggunaan, iaitu 12 institusi, mewakili (60%), manakala istilah "Bai' Al-Wafa'" yang paling rendah penggunaan, iaitu satu (1) institusi sahaja, mewakili (5%) daripada keseluruhan institusi perbankan Islam di Malaysia.

Pendahuluan

Dalam industri perbankan Islam di Malaysia, terdapat banyak istilah yang telah digunakan dalam industri perbankan bertujuan untuk memasarkan produk-produk yang berteraskan kepada syariah Islamiah. Kebanyakan istilah-istilah yang diaplikasikan adalah daripada bahasa Arab di dalam produk-produk perbankan yang dihasilkan ini. Kini, sebahagian besar institusi perbankan di Malaysia telah menggunakan produk yang berasaskan bahasa Arab dalam menjalankan urus niaga harian mereka. Berdasarkan kajian yang telah dijalankan, sebanyak 56% institusi perbankan di Malaysia telah mengamalkan sistem perbankan berteraskan Islam dengan meminjam istilah bahasa Arab. Apa yang menarik tentang sistem baru ini adalah pengamalan urus niaga dan transaksi perbankan yang menggunakan istilah bahasa Arab dan berteraskan syariah Islamiah. Produk yang dihasilkan adalah bebas daripada unsur riba yang mendorong masyarakat bermuamalah tanpa sebarang masalah dan ragu-ragu.

Bahasa Arab merupakan satu bahasa yang mempunyai perkaitan yang rapat dengan agama Islam. Hal ini demikian kerana kitab suci al-Quran yang merupakan sumber utama rujukan agama Islam adalah diturunkan dalam bahasa Arab. Perkembangan industri perbankan Islam menyebabkan masyarakat Malaysia masa kini didedahkan dengan produk terbaru keluaran institusi perbankan Islam. Sistem Perbankan Islam beroperasi menurut prinsip-prinsip syariah menggunakan istilah bahasa Arab, seperti *mudarabah, musyarakah, murabahah, bai' bithaman ajil (bai' muajjal), ijarah, qard, istisna' dan ijarah thumma al-bai'* [1].

Dalam sistem perbankan Islam, terdapat banyak istilah yang sememangnya asing bagi penduduk Malaysia. Bukan itu sahaja, bahkan bank-bank Islam di negara kita menggunakan istilah produk mereka dalam bahasa Arab, walaupun secara amnya masyarakat Malaysia tidak faham dengan istilah ini. Masyarakat tempatan tidak memahami konsep istilah yang digunakan dalam produk perbankan Islam kerana kebanyakan mereka tidak mempelajari dan menggunakan bahasa Arab sebagai bahasa komunikasi harian.

Asimilasi dalam Kamus Dewan bermaksud pemaduan bermacam-macam jenis atau berbagai unsur menjadi satu, seperti pemaduan unsur-unsur daripada kebudayaan yang berlainan menjadi satu kebudayaan. Begitu juga pemaduan atau penyerapan sesuatu bahasa dengan bahasa yang lain menjadi bahasa yang satu [2]. Dalam konteks kajian ini, asimilasi yang dimaksudkan ialah penyerapan istilah bahasa Arab dalam produk-produk perbankan Islam yang digunakan dalam institusi perbankan Islam di Malaysia.

Masyarakat Malaysia masih kabur dengan istilah yang diguna pakai dalam sistem perbankan Islam pada masa kini. Hal ini demikian kerana terdapat banyak istilah yang diguna pakai dalam sistem ini adalah menggunakan bahasa Arab. Berkemungkinan besar masyarakat tempatan masih kurang yakin dan ragu-ragu untuk menggunakannya kerana tidak diberikan penjelasan tentang produk tersebut. Masyarakat kita tidak dapat gambaran tentang keistimewaan serta manfaat yang akan diperoleh jika mereka menggunakan produk-produk perbankan Islam. Bertitik-tolak daripada permasalahan terhadap kefahaman istilah tersebut, maka pengkaji telah mengambil satu langkah yang positif untuk melaksanakan satu kajian bagi mencari penyelesaian terhadap kefahaman dan penjelasan kepada istilah bahasa Arab yang digunakan dalam produk perbankan Islam di Malaysia.

Kajian yang dijalankan ini mempunyai kepentingan tersendiri, hasil daripada kajian yang dijalankan pengkaji cuba menjelaskan kepada masyarakat tentang istilah-istilah bahasa Arab yang diguna pakai dalam konteks perbankan Islam. Justeru, dengan penjelasan yang diberikan, masyarakat tidak lagi mempunyai perasaan ragu atau syak sekaligus dapat menyemai keyakinan dalam diri mereka terhadap istilah yang digunakan dalam produk perbankan Islam.

Objektif Kajian

Antara objektif-objektif tentang kajian yang dijalankan adalah seperti berikut:

1. Menjelaskan definisi istilah bahasa Arab yang digunakan dalam produk perbankan Islam di Malaysia.
2. Menganalisis penggunaan istilah bahasa Arab sebagai produk perbankan Islam di Malaysia yang berteraskan syariah serta bebas daripada unsur riba'.

Metodologi Kajian

Kajian ini adalah berbentuk deskriptif dengan menggunakan dua pendekatan, iaitu kualitatif melalui kaedah analisis kandungan bagi menjelaskan definisi istilah bahasa Arab. Menurut Asmah, beliau menyatakan bahawa pendekatan kualitatif biasanya digunakan dalam analisis data kandungan [3]. Manakala analisis kuantitatif adalah bertujuan menganalisis kekerapan dan peratusan penggunaan istilah bahasa Arab dalam produk perbankan Islam dengan menjadikan dokumen produk institusi perbankan Islam di Malaysia sebagai data utama.

Dalam melaksanakan kajian ini, pengkaji juga melakukan sorotan terhadap cara dan pemikiran tokoh-tokoh dalam memberikan pengertian terhadap data kajian. Antaranya ialah Ahmad Azhar Basyir, mentakrifkan Ar-Rahnu sebagai “menjadikan suatu benda yang bernilai menurut pandangan syarak sebagai tanggungan hutang dengan adanya benda yang menjadi tanggungan itu seluruh atau sebahagian hutang dapat diterima”. Menurut H.M Arsjad Thalib Lubis, mentakrifkan Ar-Rahnu sebagai “menjadi suatu barang yang berupa harta dan ada harganya jadi jaminan hutang dan ia akan dijadikan pembayarannya jika hutang itu tidak dapat dibayar”. Manakala Abdul Rahman Al-Jaziri pula menerangkan bahawa Ar-Rahnu menurut syarak bererti “menjadikan barang yang ada harganya menurut pandangan syara’ sebagai jaminan kepercayaan hutang piutang. Dalam erti kata seluruh hutang atau sebahagiannya dapat diambil, sebab sudah ada barang jaminan tersebut” [4].

Berdasarkan kepada penjelasan yang diberikan, maka kaedah analisis kandungan didapati sesuai dalam melaksanakan kajian ini untuk mengenal pasti penggunaan istilah bahasa Arab dan menjelaskan penggunaan istilah bahasa Arab dalam konteks perbankan Islam di Malaysia.

Analisis ban Perbincangan

Analisis data dijalankan adalah dengan merujuk kepada istilah bahasa Arab yang digunakan dalam produk perbankan Islam. Istilah bahasa Arab yang dianalisis adalah dengan merujuk kepada bilangan bank yang menggunakan istilah tersebut dengan menyatakan jumlah dan peratus (%) keseluruhan bank yang menggunakan istilah tersebut. Istilah bahasa Arab yang digunakan kemudian diberikan penjelasan dan huraian dari segi bahasa dan definisi istilah produk yang digunakan dalam perbankan Islam. Analisis yang dijalankan dapat dilihat seperti yang berikut:

1. Al-Wadiah

Istilah Arab	Nama Bank	Jumlah (%)
Al-Wadiah (الوديعة)	• Affin Islamic Bank Berhad • AmIslamic Bank Berhad • Bank Muamalat Malaysia Berhad • CIMB Islamic Bank Berhad • Citibank Islamic Banking • Hong Leong Islamic Banking • HSBC Amanah Malaysia Berhad • Maybank Islamic Banking	11 (12.2%)

	• OCBC Al-Amin Bank Berhad • Public Bank Islamic Banking • Standard Chartered Islamic Banking	

Al-Wadiah dari segi bahasa membawa maksud menyimpan sesuatu yang disimpan bukan pada pemiliknya untuk dijaga. Dari segi istilah, menurut Jumhur ulama ialah mewakilkan orang lain untuk menjaga harta yang tertentu dengan cara tertentu sama ada melalui lafaz yang jelas, perbuatan atau isyarat [5].

Istilah Al-Wadiah dalam perbankan Islam:

- Dikenali sebagai Akaun Simpanan Wadiah.
- Bermaksud kontrak simpanan keselamatan antara pendeposit dengan pemegang amanah (bank).
- Perjanjian untuk menyimpan wang dan barang antara pendeposit dengan pihak bank.
- Terdapat dua akaun yang ditawarkan,iaitu akaun semasa dan akaun tabungan.
- Simpanan akan dibayar hibah (dividen) sekiranya mendapat keuntungan.
- Hibah hanya boleh ditentukan mengikut budi bicara bank berdasarkan pertimbangan prestasi keuntungan.

2. Al-Mudharabah

Istilah Arab	Nama Bank	Jumlah (%)
Al-Murabahah (المرابحة)	• Bank Islam Malaysia Berhad • HSBC Amanah Malaysia Berhad • Maybank Islamic Banking • OCBC Al-Amin Bank Berhad • RHB Islamic Bank Berhad	5 (5.6%)

Al-Mudharabah, bahasa bermaksud potongan. Dari segi istilah ertinya akad antara pemilik modal (harta) dengan pengelola modal, dengan syarat bahawa keuntungan diperoleh dua belah pihak sesuai jumlah kesepakatan untuk berkongsi sama keuntungan atas usaha yang telah dilakukan [6].

Istilah Al-Mudharabah dalam perbankan Islam:

- Bermaksud perkongsian keuntungan antara pemilik modal dengan pengusaha manakala bank bertindak sebagai orang tengah.
- Keuntungan akan diagihkan mengikut nisbah di antara tiga pihak tadi.
- Kerugian akan ditanggung oleh pemilik modal sahaja manakala bank menanggung kerugian operasi.
- Terdapat dua jenis akaun pelaburan,iaitu akaun pelaburan am dan akaun pelaburan khas.

3. Al-Murabahah

Istilah Arab	Nama Bank	Jumlah (%)
Al-Mudharabah [المضاربة]	• Affin Islamic Bank Berhad • Al-Rajhi Banking & Investment Corporation (Malaysia) Berhad • AmIslamic Bank Berhad	12 (13.3%)

	• Agro Bank Malaysia Berhad • Bank Muamalat Malaysia Berhad • Bank Kerjasama Rakyat Malaysia • CIMB Islamic Bank Berhad • Citibank Islamic Banking • Hong Leong Islamic Banking • Maybank Islamic Banking • Public Bank Islamic Banking • Standard Chartered Saadiq Berhad	

Al-Murabahah, bahasa membawa maksud kelebihan dan tambahan (keuntungan). Dari segi istilah ialah transaksi penjualan barang dengan menyatakan harga perolehan dan keuntungan (*margin*) yang disepakati oleh penjual dan pembeli [7].

Istilah Al-Murabahah dalam perbankan Islam:
- Bermaksud harga jualan lebih tinggi daripada harga belian.
- Merupakan perjanjian jual beli antara pembeli dengan bank.
- Pembayaran atas akad jual beli Murabahah dapat dilakukan secara tunai maupun kredit.

4. Al-Bai' Bithaman Ajil

Istilah Arab	**Nama Bank**	**Jumlah (%)**
Al Bai' Bithaman Ajil [البيع بثمن آجيل]	• Alliance Islamic Bank Berhad • AmIslamic Bank Berhad • Bank Islam Malaysia Berhad • BSN Perbankan Islam • EON Cap Islamic Bank • Maybank Islamic Banking	6 (6.7%)

Al-Bai' Bithaman Ajil, bahasa bermaksud jualan harga tertangguh. Dari segi istilah, proses menjual sesuatu dengan disegerakan penyerahan barang dan ditangguhkan pembayarannya sehingga ke satu waktu atau tempoh yang telah ditetapkan [8].

Istilah Bai Bithaman Ajil dalam perbankan Islam:
- Bermaksud jualan secara tertangguh atau ansuran.
- Merupakan perjanjian jualan secara bayaran ansuran.
- Harga yang dibayar oleh pembeli kepada bank adalah lebih tinggi berbanding harga secara tunai.
- Pembeli membayar secara ansuran kepada bank selepas menerima barang tersebut.

5. Al-Musyarakah

Istilah Arab	**Nama Bank**	**Jumlah (%)**
Al-Musyarakah [المشاركة]	• AmIslamic Bank Berhad • RHB Islamic Bank Berhad • Kuwait Finance House (Malaysia) Berhad • Maybank Islamic Banking	4 (4.4%)

Al-Musyarakah, bahasa maksudnya perkongsian. Dari segi istilah, perjanjian persepakatan yang dimeterai antara dua pihak atau lebih sebagai rakan kongsi untuk berkongsi modal dan keuntungan dalam sesuatu perniagaan atau perusahaan [9].

Istilah Al-Musyarakah dalam perbankan Islam:
- Bermaksud perkongsian menjalankan perniagaan.
- Merupakan perjanjian usaha sama atau perkongsian antara peminjam dengan bank untuk menjalankan sesuatu projek perniagaan.
- Kedua-dua pihak berkongsi modal dan sama-sama berkongsi untung dan rugi.

6. *Al-Musawamah*

Istilah Arab	Nama Bank	Jumlah (%)
Al-Musawamah [[الم ساومة]	• Bank Islam Malaysia Berhad	1 (1.1%)

Al-Musawamah dari segi bahasa membawa maksud boleh dirundingkan atau tawar-menawar dalam urusan berjual beli. Dari segi istilah membawa pengertian suatu akad jual beli tanpa pendedahan harga kos aset dan margin keuntungan kepada pembeli [10].

Istilah Al-Musawamah dalam perbankan Islam:
- Sejenis jualan am di mana terdapat tawar menawar dalam harga komoditi yang akan didagangkan antarapenjual dengan pembeli tanpa sebarang rujukan terhadap kos perolehan yang ditanggung oleh penjual.
- Jual-beli biasa (al-Bai’), jualan secara rundingan, tender, lelongan, sewaan dan pajakan, jualan kredit, jualan tempahan, jualan kontrak berkala, pesanan belian dengan bayaran awal, upah perkhidmatan jaminan, simpanan, wakil, serta perniagaan perkongsian dan persyarikatan.

7. *Ar-Rahnu*

Istilah Arab	Nama Bank	Jumlah (%)
Al-Rahnu [الرهن]	• Bank Islam Malaysia Berhad • Agro Bank Malaysia Berhad • Bank Kejasama Rakyat Malaysia	3 (3.3%)

Ar-Rahnu, bahasa bermaksud mantap dan berkekalan atau tahanan. Dari segi istilah istilah ialah menjadikan aset sebagai jaminan atau cagaran terhadap hutang. Cagaran akan digunakan untuk menyelesaikan hutang apabila penghutang ingkar. Cagaran juga akan digunakan sebagai satu nama sejenis pinjaman dengan cagaran atau perniagaan pajak gadai [11].

Istilah Ar-Rahnu dalam perbankan Islam:
- Skim ini beroperasi dengan memberi pinjaman ihsan sementara kepada yang memerlukan, dengan cagaran atau barang sandaran yang dinamakan *marhun*.
- Di dalam konsep ini, sesuatu barang yang berharga dijadikan sebagai cagaran yang terikat dengan hutang.
- Jika hutang tidak dijelaskan, maka *marhun* boleh digunakan untuk menjelaskan baki hutang.

- Tujuan *marhun* ialah untuk meyakinkan tuan punya hutang (pemiutang) bahawa risiko pembayaran semula hutang dapat dikurangkan.
- Pihak penghutang tidak perlu menanggung beban pembayaran semula yang tinggi.

8. *Ijarah Thumma al-Bai*

Istilah Arab	Nama Bank	Jumlah (%)
Ijarah Thumma Al-Bai [إجارة ثم البيع]	• AmIslamic Bank Berhad • Bank Islam Malaysia Berhad • EON Cap Islamic Bank • OCBC Al-Amin Bank Berhad • Public Islamic Bank Berhad • RHB Islamic Bank Berhad	6 (6.7%)

Ijarah Thumma al-Bai bermaksud sewa kemudian beli. Ijarah Thumma Bai' lazimnya digunakan dalam membiayai barangan pengguna terutamanya pembiayaan kenderaan. Terdapat dua kontrak berasingan yang terlibat: kontrak Ijarah (pajakan/penyewaan) dan kontrak Bai' (jual beli) [12].

Istilah Ijarah Thumma al-Bai dalam perbankan Islam:
- Muamalah jenis ini adalah suatu daripada kaedah jual beli harga tangguh ataupun pada hari ini lebih dikenali 'hire purchase' yang dibuat mengikut prinsip muamalat Islam.
- Al-Ijarah thumma al-Bai'i mengandungi dua aqad, iaitu aqad sewaan dan aqad beli selepas tamat tempoh sewa.
- Pindahan hak milik harta yang disewa daripada pemberi sewa kepada pihak yang menyewa tidak berlaku secara automatik selepas tamat tempoh sewaan atau selepas semua bayaran sewa di bayar.

9. *Al-Wakalah*

Istilah Arab	Nama Bank	Jumlah (%)
Al-Wakalah [[الوكالة	• Bank Islam Malaysia Berhad • Citibank Islamic Banking • HSBC Amanah Malaysia Berhad • OCBC Al-Amin Bank Berhad • RHB Islamic Bank Berhad	5 (5.6%)

Al-Wakalah dari segi bahasa bermaksud pemeliharaan. Ini merupakan satu kontrak di mana seseorang (prinsipal) melantik pihak lain bagi bertindak mewakili dirinya (sebagai ejen) untuk melaksanakan tugas-tugas khusus. Pihak yang menerima tugas itu adalah ejen yang biasanya dibayar yuran atas perkhidmatannya [13]. Ini termasuklah segala pengendalian atau pengurusan harta dalam bentuk jual beli dan perkara-perkara lain yang boleh diwakilkan.

Istilah Al-Wakalah dalam perbankan Islam:
- Merupakan perlantikan seseorang melalui akad untuk mengambil tempat orang yang melantiknya bagi menguruskan sesuatu perkara yang tertentu.
- Merupakan pemberian kuasa kepada seorang wakil untuk menguruskan dan menjaga sesuatu perkara.

- ➢ Menjadi konsep asas dalam kontrak di antara wakil dengan pengendali takaful yang bertindak sebagai prinsipal.
- ➢ Membenarkan pengendali takaful untuk mengambil upah atau komisyen kepada wakil melalui sumbangan mereka melalui akad yang dipersetujui.

10. Al-Kafalah

Istilah Arab	Nama Bank	Jumlah (%)
Al-Kafalah [الكفالة]	• HSBC Amanah Malaysia Berhad • OCBC Al-Amin Bank Berhad	2 (2.2%)

Al-Kafalah, bahasa bermaksud merujuk pada *Dhamanah* (jaminan). Dari segi istilah merupakan jaminan yang di berikan oleh penanggung (*kafil*) kepada pihak ketiga untuk memenuhi kewajiban pihak kedua atau yang di tanggung [14]. Al-kafalah juga bererti mengalihkan tanggung jawab seseorang yang di jamin bahawa satu pihak lain yang akan menunaikan kewajipannya [15].

Istilah Al-Kafalah dalam perbankan Islam:
- ➢ Akad kafalah adalah jaminan yang di berikan oleh penanggung (*kafil*) kepada pihak ke tiga untuk memenuhi kewajiban pihak kedua atau di tanggung (*makful 'anhu*).
- ➢ Memberikan jaminan kepada *nasabah*nya sehubungan dengan kontrak kerja atau perjanjian yang telah disepakati antara *nasabah* dengan pihak ketiga.
- ➢ Pihak bank sebagai lembaga yang memberikan jaminan akan memperoleh manfaat berupa peningkatan pendapatan atas upah yang mereka terima sebagai imbalan atas jasa penjaminan yang diberikan.

11. Al-Hibah

Istilah Arab	Nama Bank	Jumlah (%)
Al-Hibah [الهبة]	• Bank Islam Malaysia Berhad • Bank Kejasama Rakyat Malaysia • Citibank Islamic Banking • CIMB Islamic Bank Berhad • HSBC Amanah Malaysia Berhad • Hong Leong Islamic Banking • Public Bank Islamic Banking • Maybank Islamic Banking • RHB Islamic Bank Berhad	9 (10.0%)

Al-Hibah dari segi bahasa bermaksud pemberian. Dari segi istilah bermaksud suatu akad yang mengandungi pemberian hadiah oleh seseorang secara sukarela terhadap hartanya kepada seseorang sebagai balasan kepada manfaat yang diterima [16].

Istilah Al-Hibah dalam perbankan Islam:
- ➢ Hibah ialah suatu akad pemberian milik ain harta daripada satu pihak kepada pihak yang lain tanpa balasan (iwad) semasa hidup.
- ➢ Secara sukarela, bukan mengharapkan pahala di akhirat dan memuliakan seseorang, dengan menggunakan lafaz ijab dan qabul atau seumpamanya.

- Antara konsep yang mengaplikasikan Al-Hibah ialah Al-Wadiah,Qard al-Hasan dan Al-Ijarah Thumma al-Bai

12. Bai' Istisna'

Istilah Arab	Nama Bank	Jumlah (%)
Bai' Istisna' [بيع الإستصناع]	• Bank Islam Malaysia Berhad • OCBC Al-Amin Bank Berhad • CIMB Islamic Bank Berhad	3 (3.3%)

Bai Istisna' dari segi Bahasa bermaksud, meminta supaya dibuat sesuatu atau menempah sesuatu, atau pun dengan kata lain, membuat sesuatu berdasarkan apa yang diminta. Dari segi Istilah pula merupakan kontrak bersama pembuat, pengilang meminta melakukan sesuatu (menempah) atas pekerjaan sesuatu yang telah ditentukan pada tanggungannya [17], yakni kontrak membeli sesuatu apa yang ditempah olehnya kepada pembuat tempahan.

Istilah Bai' Istisna' dalam perbankan Islam:
- Membeli hak milik sesuatu aset yang sedang dalam proses pembinaan daripada pelanggan mengikut kontrak pembinaan antara pihak pelanggan dengan pihak pembekal atau kontraktornya.
- Hak milik kepada aset tersebut dijual balik kepada pelanggan dengan harga jualan yang meliputi harga belian dan margin keuntungan.
- Pelanggan akan membayar harga jualan melalui ansuran mengikut tempoh yang dipersetujui.

13. Bai' Salam

Istilah Arab	Nama Bank	Jumlah (%)
Bai' Salam [بـ يع ال سلام]	• CIMB Islamic Bank Berhad • Bank Islam Malaysia Berhad	2 (2.2%)

Bai' Salam dari segi bahasa bermaksud suatu kontrak yang diberikan sifatnya atas tanggungan penjual di mana pembayaran harga dibuat sepenuhnya terlebih dahulu semasa kontrak dimaterai supaya aset dapat diserahkan kemudian pada suatu tarikh masa depan [18].

Istilah Bai Salam dalam dunia perbankan Islam:
- Barangan yang dijual merupakan aset biasa, bukannya emas, perak atau mata wang yang dianggap sebagai pertukaran nilai kewangan yang tertakluk di bawah peraturan Bai' al Sarf,
  iaitu pertukaran bersama dari tangan ke tangan tanpa lengah.
- Mod pembiayaan ini sering digunakan dalam sektor pertanian, di mana bank mendahulukan
  wang bagi pembelian pelbagai input pengeluaran bagi mendapatkan saham dalam tanaman tersebut, yang kemudiannya dijual.

14. Bai' al-Inah

Istilah Arab	Nama Bank	Jumlah (%)

Bai’ Al-Inah [بيع العينة]	• AmIslamic Bank Berhad • Bank Rakyat • BSN Islamic Banking • CIMB Islamic Bank Berhad • Maybank Islamic Banking	5 (5.6%)

Bai’ al-Inah bermaksud satu kontrak (akad) yang membabitkan urusniaga jualan dan pembelian semula aset oleh penjual. Ba’ al-Inah ialah satu keadaan dimana seseorang yang berkehendakkan wang tunai datang kepada seseorang yang lain untuk memohon pinjaman [19]. Dalam urus niaga ini, penjual menjual aset kepada pembeli secara tunai dan kemudian membelinya semula secara pembayaran tertangguh dengan harga yang lebih tinggi daripada harga jualan secara tunai.

Istilah Bai’ al-Inah dalam perbankan Islam:

- Digunakan dalam produk pembiayaan peribadi.
- Pihak bank bertindak sebagai pemiutang dan akan mendapat faedah berdasarkan harga kredit dan harga tunai daripada transaksi itu. Namun, ianya dihelahkan dengan berpindah daripada kontrak pinjaman kepada kontrak jual beli barangan yang dihalalkan oleh Islam dan dapat mengelak daripada unsur riba.

15. Bai’ al-Dayn

Istilah Arab	Nama Bank	Jumlah (%)
Bai’ Al-Dayn [بيع الدين]	• Bank Islam Malaysia Berhad • CIMB Islamic Bank Berhad	2 (2.2%)

Bai’ al-Dayn dari segi bahasa membawa maksud urus niaga hutang. Dari segi istilah pula ialah merujuk pada pembelian dan penjualan instrumen hutang seperti sijil, saham, dokumen perdagangan dan sekuriti dalam pasaran sekunder yang patuh pada kehendak *Syariah* [20].

Istilah Bai’ al-Dayn dalam perbankan Islam:

- Pembiayaan hutang dan peruntukan sumber kewangan yang diperlukan untuk pengeluaran, perdagangan dan perkhidmatan melalui jualan dan belian dokumen dan kertas perdagangan.
- Merupakan kemudahan jangka pendek dalam tempoh matang setahun atau kurang daripadanya.
- Dokumen yang menjadi bukti hutang dan transaksi komersial ‘bona fide’ yang boleh diperdagangkan.

16. Bai’ Urbun

Istilah Arab	Nama Bank	Jumlah (%)
Bai’ Urbun [بيع العربون]	• Bank Islam Malaysia Berhad • CIMB Islamic Bank Berhad • Bank Muamalat Malaysia Berhad	3 (3.3%)

Bai’ Urbun dari segi bahasa membawa maksud *taslif* atau *taqdim*. Dari segi istilah pula ialah bayaran muka atau wang pendahuluan [21].

Istilah Bai Urbun dalam dunia perbankan Islam:

➢ Suatu perjanjian jualan di mana wang cagaran dibayar terlebih dahulu sebagai sebahagian
daripada pembayaran harga aset jika kontrak berterusan hingga selesai.
➢ Wang cagaran ini akan hilang jika pembeli tidak memenuhi kewajipan memuktamadkan pembelian aset.
➢ Wang cagaran yang hilang dianggap sebagai hibah (hadiah) kepada penjual [22].

17. Bai' Istijrar

Istilah Arab	Nama Bank	Jumlah (%)
Bai' Istijrar [عيب الإ سد تجرار]	• CIMB Islamic Bank Berhad • Bank Islam Malaysia Berhad	2 (2.2%)

Bai' Istijrar, bahasa bermaksud menarik atau menyerat. Dari segi istilah ialah pembelian barang yang diserahkan di kemudian hari sedangkan pembayaran dilakukan di muka.

Istilah Bai' Istijrar dalam perbankan Islam:

➢ Suatu kontrak antara pembekal dengan pelanggan di mana pembekal membekalkan barangan tertentu secara berterusan mengikut mod pembayaran yang telah dipersetujui sehingga mereka menamatkan kontrak tersebut.
➢ Kontrak antara pemborong dengan peruncit adalah sama bagi membekalkan sejumlah aset yang telah dipersetujui [23].

18. Bai' Muzayadah

Istilah Arab	Nama Bank	Jumlah (%)
Bai' Muzayadah [عيب املزايدة]	• Bank Islam Malaysia Berhad • CIMB Islamic Bank Berhad • Maybank Islamic Banking	3 (3.3%)

Bai' Muzayadah dari segi bahasa bermaksud jual beli secara lelong. Dari segi istilah pula ialah akad jual beli secara bidaan atau barang lelongan akan dijual kepada pembeli yang dapat menawarkan harga yang paling tinggi [24].

Istilah Bai' Muzayadah dalam perbankan Islam:

➢ Jualan aset kepada orang ramai melalui proses pembidaan dalam kalangan bakal pembeli dan aset dijual kepada pembida tertinggi [25].

19. Maksud Bai Wafa'

Istilah Arab	Nama Bank	Jumlah (%)
Bai' Wafa' [بيع الوفاء]	• Bank Islam Malaysia Berhad	1 (1.1%)

Bai' Wafa' dari segi bahasa berkmaksud pelunasan hutang atau jual beli bersyarat. Dari segi istilah ialah barang yang dijual dapat ditebus kembali pada tarikh tiba waktunya.

Istilah Bai Wafa' dalam perbankan Islam:

- ➢ Suatu kontrak dengan syarat bahawa apabila penjual membayar balik harga aset yang telah
terjual itu,pembeli memulangkan semula aset tersebut kepada penjual.
- ➢ Merupakan *bai'* (*penjualan*) dari segi bentuk (*rahn*) tetapi jaminan dari segi isi. Aset tersebut biasanya mengenai barang tak bergerak seperti tanah dan rumah [26].

20. Qardh Hasan

Istilah Arab	Nama Bank	Jumlah (%)
Qardh Hasan [ضرق ال حسن]	• Bank Islam Malaysia Berhad • Al-Rajhi Banking & Investment Corporation (Malaysia) Berhad • Bank Muamalat Malaysia Berhad • Kuwait Finance House (Malaysia) Berhad • RHB Islamic Bank Berhad	5 (5.6%)

Qardh Hasan bermaksud pinjaman tanpa dikenakan faedah (hanya wajib membayar jumlah pokok hutangnya). Di bawah perjanjian ini, pinjaman diberi untuk satu tempoh yang tetap atas semangat ihsan dan peminjam hanya perlu membayar balik jumlah pinjaman yang sebenar sahaja. Walau bagaimanapun, sekiranya peminjam membayar lebih berdasarkan budi bicaranya (tanpa ikatan perjanjian), ia dianggap sebagai tanda penghargaan kepada pemberi pinjaman [27].

Istilah Qardh Hasan dalam perbankan Islam:
- ➢ Merujuk pada pinjaman ihsan, iaitu satu kontrak pinjaman antara dua pihak tanpa caj tambahan selain daripada pinjaman itu.
- ➢ Sebarang tambahan pembayaran yang dikenakan oleh pemberi peminjam atau janji yang dibuat oleh peminjam adalah dilarang.
- ➢ Walau bagaimanapun, peminjam dibenarkan membayar lebih atas budi bicara beliau sepenuhnya sebagai tanda penghargaan [28].

Dapatan Kajian

Berdasarkan analisis dan perbincangan yang dijelaskan, dapatan menunjukkan bahawa istilah bahasa Arab telah digunakan dalam produk perbankan Islam di Malaysia. Antara istilah yang digunakan ialah seperti jadual 1 yang berikut:

Jadual 1: Penggunaan Istilah Bahasa Arab dalam Produk Perbankan Islam

Bil	Istilah Arab	Kekerapan	Peratus
1.	Al-Wadiah (الوديعة)	11	12.2%
2.	Al-Murabahah (المرابحة)	5	5.6%
3.	Al-Mudharabah [المضاربة]	12	13.3%
4.	Al Bai' Bithaman Ajil [البيع بثمن آجيل]	6	6.7%
5.	Al-Musyarakah [المشاركة]	4	4.4%
6.	Al-Musawamah [قمواسملا]	1	1.1%
7.	Al-Rahnu [الرهن]	3	3.3%
8.	Ijarah Thumma Al-Bai [إجارة ثم البيع]	6	6.7%

9.	Al-Wakalah [الوكالة]	5	5.6%
10.	Al-Kafalah [الكفالة]	2	2.2%
11.	Al-Hibah [الهبة]	9	10.0%
12.	Bai’ Istisna’ [بيع الإستصناع]	3	3.3%
13.	Bai’ Salam [بيع السلام]	2	2.2%
14.	Bai’ Al-Inah [بيع العينة]	5	5.6%
15.	Bai’ Al-Dayn [بيع الدين]	2	2.2%
16.	Bai’ Urbun [بيع العربون]	3	3.3%
17.	Bai’ Istijrar [بيع الإستجرار]	2	2.2%
18.	Bai’ Muzayadah [بيع المزايدة]	3	3.3%
19.	Bai’ Wafa’ [بيع الوفاء]	1	1.1%
20.	Qardh Hasan [قرض الحسن]	5	5.5%
	Jumlah	90	100%

Berdasarkan jadual 1 di atas, istilah “al-Mudarabah” mencatat jumlah kekerapan yang tertinggi, iaitu 12 kali dengan peratusan (13.3%), diikuti dengan “al-Wadiah” sebanyak 11 kali dengan peratusan (12.2%), kemudian “al-Hibah” yang mencatat kekerapan sebanyak 9 kali dengan peratusan (10%). Manakala istilah “al-Bai’ Bithaman Ajil”, istilah “Ijarah Thumma al-Bai’” mencatat jumlah kekerapan sebanyak 6 kali dengan peratusan (6.7%), diikuti dengan istilah “al-Murabahah”, istilah “al-Wakalah”, istilah “Bai’ al-Inah”, dan istilah “Qardh Hasan” yang mencatat kekerapan sebanyak 5 kali dengan peratusan (5.5%), kemudian diikuti istilah “al-Musyrakah” yang mencatat jumlah kekerapan sebanyak 4 kali dengan peratusan (4.4%). Seterusnya istilah “al-Rahnu”, istilah “Bai’ Istisna’”, istilah “Bai’ Urbun” dan istilah “Bai’ Muzayadah” masing-masing mencatat jumlah kekerapan sebanyak 3 kali dengan peratusan (3.3%), kemudian diikuti istilah “al-Kafalah”, istilah “Bai’ Salam”, istilah “Bai’ Al-Dayn” dan istilah “Bai’ Istijrar” yang mencatat jumlah kekerapan sebanyak 2 kali dengan peratusan (2.2%). Manakala istilah yang mencatat kekerapan yang terendah ialah “Al-Musawamah” dan istilah “Bai’ Wafa’” yang mencatat kekerapan sebanyak satu (1) kali sahaja dengan peratusan sebanyak (1.1%).

Rumusan dan Cadangan

Kajian yang dijalankan ini merupakan satu tinjauan awal terhadap penggunaan istilah bahasa Arab dalam produk perbankan Islam. Secara dasarnya, istilah bahasa Arab banyak digunakan dalam produk perbankan Islam di Malaysia. Hal ini demikian kerana masyarakat Malaysia yang majoritinya beragama Islam memerlukan muamalah dan urus niaga perbankan dalam kehidupan mereka berteraskan syariah Islam dan bebs daripada unsur-unsur syubhah dan riba. Diharapkan kajian ini dapat memberi kefahaman dan penjelasan kepada masyarakat Malaysia secara amnya dan secara khususnya kepada pengguna atau pelanggan terhadap penggunaan istilah bahasa Arab dalam produk perbankan Islam. Kajian ini juga diharapkan boleh menjadi pencetus idea kepada penyelidik pada masa akan datang dalam usaha melaksanakan penyelidikan secara lebih komprehensif tentang penggunaan istilah bahasa Arab dalam produk perbankan Islam di Malaysia. Melalui kajian ini juga, mereka boleh membuat penyelidikan dengan hasil yang lebih baik dan memperoleh pengetahuan dengan lebih mendalam.

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Peranan Media Dalam Pelaksanaan Komunikasi Dakwah Pensyarah Pendidikan Islam Terhadap Pelajar di Politeknik Sultan Salahuddin Abdul Aziz Shah

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Kata Kunci: Peranan media, komunikasi dakwah, pensyarah Pendidikan Islam

Abtrak: Kajian ini memberi tumpuan kepada aspek Peranan Media Dalam Pelaksanaan Komunikasi Dakwah Pensyarah Pendidikan Islam bagi proses pengajaran dan pembelajaran terhadap pelajar. Kajian ini menggunakan metod kajian kepustakaan dan kajian lapangan. Responden terdiri daripada 16 orang pensyarah Pendidikan Islam di Politeknik Sultan Salahuddin Abdul Aziz Shah. Pengumpulan data berdasarkan temu bual bersama pensyarah. Di samping itu, turut dijalankan obsevasi ketika pelaksanaan pengajaran dan pembelajaran dalam kalangan pensyarah. Hasil kajian mendapati 16 orang (100%) pensyarah menggunakan audio visual atau media lisan sebagai medium utama dalam pengajaran dan pembelajaran di dalam kelas dan penggunaan e-mel menjadi pilihan 8 orang (50%) untuk komunikasi di luar kelas. Kepelbagaian penggunaan media oleh pensyarah bertujuan bagi meningkatkan kefahaman pelajar terhadap pengajaran dan pembelajaran yang disampaikan. Walau bagaimanapun kajian juga mendapati penggunaan media komunikasi terkini seperti *facebook, whatsapp, wechat* dan *blackberry messagger* adalah berkurangan, iaitu 3 orang (19%) dan perlu dipertingkatkan bagi memenuhi keperluan dakwah semasa dalam kepantasan memberi maklum balas maklumat yang diperlukan oleh pelajar. Terdapat pelbagai faktor yang mendorong kepada penggunaan media komunikasi dakwah pensyarah. Namun begitu, masih terdapat kelemahan dan kepincangan yang perlu diperbaiki terutama faktor prasarana yang memberi impak besar dalam penyampaian pengajaran dan pembelajaran.

Pendahuluan

Kewajipan berdawkwah menjadi tuntutan ke atas setiap individu muslim. Arus perubahan masyarakat, menggesa para pendakwah menggunakan metode yang mampu dicernakan oleh masyarakat dan secara tidak langsung membawa perubahan. Pensyarah pendidikan Islam yang bertindak sebagai *da'i* erlu melengkapkan diri diri dengan pelbagai kemahiran dan kreatif dalam penyampaian supaya mampu memberi pemahaman dan penjelasan yang menyeluruh tentang Islam agar pelbagai masalah keruntuhan dalam masyarakat dapat diselesaikan. Media merupakan alat atau perantara dalam komunikasi atau dalam perhubungan (1). Media adalah alat atau perantara komunikasi am, merujuk kepada pelbagai saluran penyampaian sama ada elektronik atau bercetak. Media pengajaran adalah alat bantu proses pengajaran dan pembelajaran dan segala sesuatu yang dapat dipergunakan untuk meransang fikiran, perasaan, perhatian atau ketrampilan pelajar. Komunikasi dakwah boleh disampaikan dalam pelbagai bentuk saluran. Media komunikasi dakwah merupakan elemen penting dalam usaha pensyarah menyampaikan maklumat, idea, mesej kepada pelajar sama ada melalui lisan, tulisan, al-Quran, jemaah atau organisasi, melalui kesenian, perbuatan atau bahasa badan dan audio-visual. Pada peringkat penggunaan media komunikasi dakwah, pensyarah perlu memilih media yang paling bersesuaian dengan pelajar sama ada berbentuk lisan, tulisan, perbuatan atau audio- visual (2). Keperluan pensyarah dalam penggunaan media yang bersesuaian dengan tujuan membolehkan sesuatu mesej disampaikan dengan tepat, difahami dan mendapat maklum balas (3). Di sini, komunikasi antara pensyarah dan pelajar akan berlaku secara langsung dan tidak langsung. Komunikasi secara langsung akan berlaku ketika penyampaian pensyarah di dalam kelas dengan penggunaan media seperti buku teks, papan tulis, LCD projektor, nota edaran, bahan dari internet dan tayangan interaktif (4). Manakala komunikasi yang berlaku secara tidak langsung di luar kelas dengan perantaraan media yang lebih pantas serta meluas seperti Sistem Pesanan Ringkas (SMS),*facebook, e-learning, whatsapp dan internet,* penulisan artikel dakwah, buletin, ceramah, syarahan, kuliah agama dan program-program agama. Keberkesanan terhadap penggunaan media-media ini oleh pensyarah memberi kelangsungan kepada peningkatan kefahaman pelajar terhadap penyampaian.

Komunikasi Dakwah merupakan suatu proses penyampaian dan pertukaran maklumat dengan menggunakan prinsip dan kaedah yang terdapat dalam al-Quran dan al-Hadith. Proses ini adalah untuk mendidik masyarakat tentang hakikat kebenaran Islam dan meletakkan al-Quran dan al-Hadith sebagai sumber rujukan utama dalam menjalankan segala aktiviti kehidupan sama ada dari aspek akidah, ibadah dan muamalah. Secara umumnya para ilmuan Islam mentakrifkan komunikasi dakwah iaitu menjaga kebenaran tentang mesej yang di bawa, baik dari segi berita, perkhabaran atau perkataan, bersifat realiti iaitu bersesuaian dengan fitrah manusia bagi memenuhi keperluan jasmani dan rohani, menggunakan medium yang sesuai dengan keupayaan intelektual kumpulan sasaran dan merangkumi semua cabang kehidupan manusia sesuai dengan ajaran Islam [5]. Seorang pensyarah yang memiliki kemahiran komunikasi, merupakan nilai tambah dalam proses pengajaran dan pembelajaran. Kelebihan ini dapat membantu pensyarah membina hubungan yang baik dan menggarap segala potensi diri pelajar (6).

Pensyarah bermaksud orang yang mengajar, pendidik, pengajar, pengasuh (1). Menurut Dr. Adli Hj. Yacob dan Khuzaihan Zakaria, guru bermaksud pendidik, pengajar, pengasuh secara formal (7). Menurut Ahmad Mahmood Musanif, guru bermaksud pendidik, pengajar secara formal. Guru mengikut perspektif Islam mempunyai tanggungjawab dalam pembangunan akhlak iaitu sebagai *murabbi* (a trainer of souls and personalities) dan bukan semata-mata sebagai *mu'allim* (a transmitter of knowledge) (8). Pensyarah sebagai *da'i* merupakan golongan profesional yang bertindak sebagai pendidik dan pendakwah dalam masyarakat. Peranan pensyarah adalah untuk menyemai kesedaran tentang kepentingan ilmu, membangunkan ummah, membina akhlak yang baik dan membimbing pelajar supaya menjauhi sifat-sifat *mazmumah* (9).

Pendidikan Islam merupakan modul yang bertindak sebagai alat untuk mengajak manusia ke arah kebaikan. Pendidikan dalam bahasa arab bermaksud *tarbiyyah, tardib, ta'dib, tadris, taklim* dan *riyadah*. Dari aspek istilah pendidikan Islam ialah proses pendidikan untuk mendidik seseorang supaya memiliki akhlak yang mulia, menjauhi sifat terkeji, membimbing manusia ke jalan yang lurus, mengislahkan amal untuk mencapai kebahagiaan kehidupan di dunia dan di akhiratPendidikan Islam merangkumi aspek fardu ain dan fardu kifayah dengan menekankan kepentingan individu dan pembangunan ummah (8,9)

Kajian ini mampu untuk dijadikan sumber informasi penting dalam mengenal pasti kelemahan dan kekurangan peranan media komunikasi dakwah yang gunakan dan penemuan kajian dapat membantu pensyarah merangka kaedah yang lebih dekat dengan jiwa pelajar. Selain itu, kajian ini mampu memberi maklumat awal kepada pihak institusi tentang keperluan meningkatkan prasarana yang berkaitan dengan media pengajaran supaya sejajar dengan kehendak semasa sejajar dengan trasformasi pendidikan kini.

Penyataan Masalah

Pendakwah perlu mempunyai kualiti komunikasi yang mampu mempengaruhi umat Islam kerana keberkesanan dalam penyampaian dapat membawa perubahan yang besar kepada masyarakat. Reliti masyarakat kini sedang menghadapi krisis keruntuhan akhlak yang amat membimbangkan dan media massa yang setiap hari melaporkan berita-berita yang menggugat nilai kebaikan masyarakat seolah-olah masyarakat telah hilang pertimbangan dan pedoman hidup yang berlandaskan lunas-lunas Islam yang sebenarnya. Fenomena ini juga seolah-olah menggambarkan mesej penyampaian ilmu Pendidikan Islam yang berlaku di semua peringkat masyarakat khususnya di sekolah dan Institut Pengajian Tinggi tidak mencapai objektif dan kurang berkesan dalam mengubah masyarakat ke arah kebaikan. Masalah kerutuhan akhlak remaja Malaysia yang saban hari dipaparkan di media massa membuktikan moral remaja begitu kritikal. Dari sudut pendidikan, permasalahan ini berpunca daripada masalah kerohanian yang sakit dan kosong iaitu tidak berupaya mengisi roh mereka dengan rasa nikmat kepada Allah. Para pelajar perlu diberi rawatan kerohanian yang berkesan. Selain itu beliau juga berpendapat proses pengajaran dan pembelajaran dan kurikulum Pendidikan Islam perlu ada inovasi, strategi yang sesuai supaya dapat memberi kesan kepada perubahan minda dan penghayatan pelajar. Guru pendidikan Islam perlu kreatif dalam penyampaian supaya isi pengajaran mudah dicernakan oleh pelajar. Guru Pendidikan Islam sebagai pendakwah perlu meletakkan pelajar sebagai sasaran dakwah. Para guru seharusnya terlebih dahulu membuat perubahan diri dan minda sebelum mengharapkan perubahan pelajar (10)

Objektif Kajian

1.Mengetahui bentuk media komunikasi dakwah pensyarah dalam pengajaran dan pembelajaran.

2.Mengenal pasti faktor-faktor penggunaan media komunikasi dakwah pensyarah dalam pengajaran dan pembelajaran.

3.Mengenal pasti bentuk halangan penggunaan media komunikasi dakwah pensyarah dalam pengajaran dan pembelajaran.

Metodologi Kajian

Pengumpulan data merupakan proses pengumpulan maklumat dengan memilih dan menggunakan kaedah alat pengumpulan data yang bersesuaian dengan permasalahan kajian, strategi penyelidikan di samping jenis dan kewujudan sumber data (11). Kajian perpustakaan digunakan adalah untuk mengumpulkan data-data dan maklumat yang berkaitan dengan kajian, mengetahui dengan lebih mendalam tentang konsep komunikasi dakwah dan penggunaannya dalam penyampaian. Data-data diperolehi daripada bahan-bahan ilmiah seperti buku, jurnal, dokumen, disertasi yang berkaitan dengan kajian. Kajian lapangan iaitu membuat pemerhatian dan mencatat tingkah laku individu atau kumpulan subjek kajian dalam keadaan semula jadi

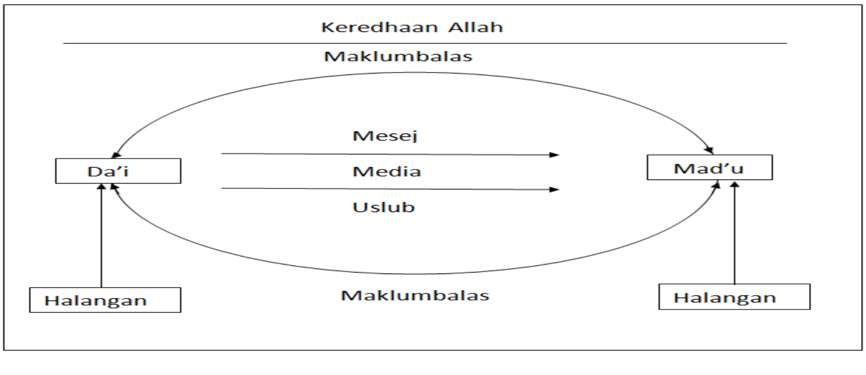
(12). Kajian ini juga bertujuan untuk mendapatkan data-data secara terus daripada responden. Cara ini akan menghasilkan suatu persoalan terkini dan lebih menepati objektif kajian. Kajian ini telah menggunakan dua kaedah kajian lapangan iaitu temubual berstruktur dan observasi berstruktur. Temu bual berstruktur telah dilakukan untuk mendapatkan maklumat tentang penggunaan dan perlaksanaan komunikasi dakwah 16 orang pensyarah Pendidikan Islam dalam kalangan pelajar sama ada di dalam kelas atau di luar kelas.

Observasi berstruktur adalah pemerhatian yang dilakukan untuk membolehkan penyelidik mengumpul data berdasarkan tingkah laku yang diperhatikan bagi memahami secara lebih mendalam tentang perkara yang dikaji dan mencatat dapatan dalam borang pemerhatian (Chua Yan Piaw:2011). Observasi memberi peluang kepada penyelidik melihat sendiri secara langsung dengan situasi yang dikajinya disamping menyokong dapatan soal selidik. Dalam kajian ini observasi telah dilakukan ke atas pelaksanaan dan perjalanan kelas pensyarah dan perjumpaan dengan pelajar secara tidak formal. Kaedah ini dapat membantu penyelidik mendapat maklumat yang lebih mendalam berdasarkan perkara sebenar tentang aplikasi media dalam pelaksanaan komunikasi dakwah pensyarah.

Analisis data adalah proses menghuraikan masalah kajian berasaskan persoalan kajian bagi menjelaskan objektif kajian yang telah disasarkan (13). Semua data yang telah dikumpul akan dianalisis dengan menggunakan kaedah kualitatif . Temu bual secara berstruktur yang dijalankan ke atas 16 orang pensyarah pendidikan Islam melibatkan 3 item yang perlu dijawab. Penganalisaan secara menyeluruh telah dilakukan terhadap hasil jawapan daripada temubual yang dijalankan bagi mendapatkan pengesanan tentang penggunaan media dalam pelaksanaan komunikasi dakwah pensyarah terhadap pelajar.. Proses pengambilan data ini berlaku secara manual sebelum diproses menggunakan perisian *Atlas.t7* iaitu merupakan satu perisian yang membolehkan data kualitatif diproses dalam bentuk kuantitatif. Perisian *Atlas.t7* ini digunakan bagi memproses data adalah untuk kemudahkesanan dan penyusunan ketika menganalisis data.

Kajian ini berdasarkan Model Komunikasi dakwah Pensyarah Terhadap Pelajar. Model komunikasi ini hasil inspirasi daripada Model Retorik Penulisan Dakwah oleh Norrodzoh Hj Siren namun telah diolah mengikut kesesuaian dengan tajuk kajian (14). Model komunikasi ini melibatkan beberapa elemen dalam menjayakan komunikasi. Setiap elemen berhubung kait dalam memberi kesan terhadap komunikasi pensyarah terhadap pelajar.

Rajah 1: Model Komunikasi Dakwah Pensyarah Terhadap Pelajar



Sumber: Pengubahsuaian daripada Model Retorik Penulisan Dakwah oleh Norrodzoh Siren

Rajah 1 menjelaskan tentang hubungan komunikasi dakwah pensyarah terhadap pelajar yang meletakkan pensyarah sebagai da'i dan pelajar sebagai mad'u. Model komunikasi ini meletakkan media sebagai intipati kepada penyampaian mesej dengan penggunaan uslub yang bersesuaian. Keperluan pensyarah dalam penggunaan media yang bersesuaian dengan tujuan membolehkan sesuatu mesej disampaikan dengan tepat, difahami dan mendapat maklum balas.

Skop Batasan Kajian

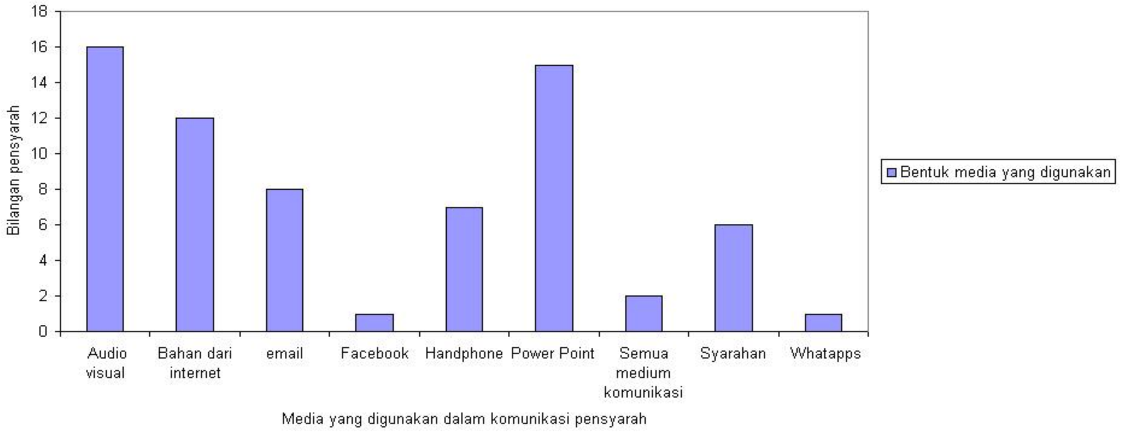
Penyelidikan ini dijalankan terhadap semua pensyarah Pendidikan Islam seramai 16 orang. Kajian yang dilakukan ke atas komunikasi dakwah secara lisan dan bukan lisan dalam proses perlaksanaan pengajaran dan pembelajaran oleh pensyarah pendidikan Islam terhadap pelajar Politeknik Sultan Salahuddin Abdul Aziz Shah. kajian ini kemudian dianalisa bagi memperolehi maklumat dalam membantu penambahbaikan dalam perancangan, penyusunan dan perlaksanaan para pensyarah dalam proses penyampaian pengajaran dan pembelajaran (P&P).

Dapatan Kajian

Dalam proses pelaksanaan komunikasi dakwah, pelbagai saluran media digunakan untuk menyampaikan maklumat. Rajah 2, 3 dan 4 merupakan analisa hasil temu bual bersama pensyarah berkaitan aspek penggunaan media dalam komunikasi dakwah mereka terhadap pelajar.

a) Bentuk media yang digunakan

Rajah 2: Bentuk Media Yang Digunakan



Analisa kajian mendapati 16 orang pensyarah menggunakan audio visual sebagai media utama dalam penyampaian dakwah di dalam kelas atau media lisan di samping media lain turut digunakan iaitu menggunakan bahan daripada internet (12 orang), *power point* (15 orang) dan syarahan (enam orang). Walau bagaimanapun komunikasi terus berlaku semasa pensyarah di luar kelas apabila terdapat (lapan orang) memilih emel sebagai medium komunikasi, penggunaan telefon bimbit sama ada melalui panggilan atau sistem pesanan ringkas (SMS) (tujuh orang), menggunakan medium komunikasi semasa seperti *whatsapp, wechat, blackberry Messenger* (BBM) dan sebagainya (dua orang) dan hanya (seorang) pensyarah menggunakan *facebook* sebagai medium komunikasi bersama pelajar di luar kelas. Menurut Puan Nor Yanie (2013) penggunaan audio visual dan *power point* dapat membantu pensyarah memfokuskan subjek pengajaran. Selain itu, kaedah ini dapat menarik minat pelajar dalam memberi tumpuan semasa pengajaran dan memudahkan proses pemahaman. Manakala bagi komunikasi dakwah bersama pelajar di luar kelas beliau gemar menggunakan emel kerana mudah diakses oleh semua pelajar (Siti Noryanie Yusof:2013). Penggabungan pelbagai media dan memperbanyakkan alat bantu mengajar dapat membantu menarik minat pelajar terhadap pendidikan Islam serta memberi keberkesanan dalam proses pengajaran dan pembelajaran (16).

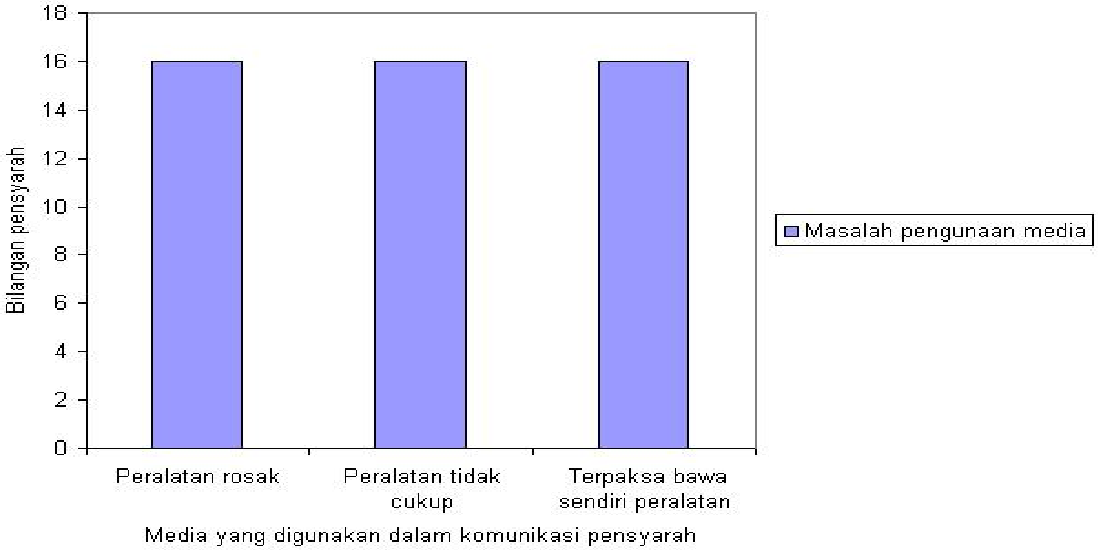
(b) Faktor penentuan media

Rajah 3 Faktor Penentuan Media

Dalam proses komunikasi terdapat pelbagai faktor yang menentukan penggunaan sesuatu media. Berdasarkan Rajah 3 menunjukkan faktor penentuan media dalam komunikasi pensyarah. Hasil temu bual yang dilakukan mendapati (sembilan orang) pensyarah mengatakan kesesuaian topik menentukan bentuk penggunaan media manakala faktor lain ialah keadaan pelajar (lapan orang) pensyarah, suasana kelas (empat orang) dan media yang lebih fokus dan menjimatkan masa dipilih oleh (dua orang) pensyarah. Menurut Masitah (2013), penggunaan media yang tepat dan bersesuaian dengan topik pengajaran membantu pelajar memahami dengan lebih cepat dan menjimatkan masa (17).

(c) Masalah penggunaan media

Rajah 4: Masalah Dalam Penggunaan Media



Media yang baik akan sentiasa berperanan dalam membantu melancarkan proses komunikasi. Oleh itu masalah penggunaan media boleh menjejaskan kualiti komunikasi itu sendiri. Rajah 4 menunjukkan aspek masalah penggunaan media iaitu semua pensyarah (16 orang) mengatakan masalah penggunaan media mengganggu proses komunikasi dalam pengajaran iaitu peralatan rosak, peralatan tidak mencukupi dan terpaksa membawa sendiri ke kelas sebagai permasalahan utama dalam penggunaan media. Faktor-faktor ini sememangnya memberi impak besar dalam proses penyampaian. Menurut Puan Aisyah (2013), pensyarah sentiasa berusaha memberikan penyampaian yang terbaik kepada pelajar, tetapi masalah-masalah yang di luar kawalan seperti hal tersebut telah menjejaskan mutu penyampaian dan melambatkan proses P&P yang telah dirancang (18).

Rumusan dan cadangan

Kajian ini secara umumnya mengupas tentang peranan media dalam perlaksanaan komunikasi dakwah pensyarah terhadap pelajar bagi proses pengajaran dan pembelajaran. Kajian dapat mengenal pasti bahawa majoriti pensyarah menggunakan audio visual sebagai media pilihan utama dalam perlaksanaan pengajaran dan pembelajaran di dalam bilik kuliah manakala emel pula menjadi medium pilihan untuk berinteraksi dengan pelajar di luar kelas kerana mudah diakses oleh pelajar. Penggunaan media pengajaran yang pelbagai adalah didorong oleh beberapa faktor terutamanya kesesuaian topik yang diajar. Walau bagaimana pun, permasalahan kekurangan prasarana yang berkait dengan media komunikasi pensyarah sedikit sebanyak menjejaskan kelancaran proses pengajaran dan pembelajaran yang telah dirancang.

Berdasarkan dapatan kajian yang menunjukkan para pensyarah Pendidikan Islam kurang menggunakan media komunikasi terkini, adalah dicadangkan para pensyarah perlu menghilangkan sedikit *privacy* dengan sentiasa mengaktifkan media komunikasi yang dekat dengan pelajar seperti *whatapps* dan *facebook* demi penambah baikan dalam penyampaian maklumat dan maklum balas yang pantas terhadap permasalahan pelajar.

Kajian juga mendapati *power point* yang digunakan oleh pensyarah merupakan komunikasi sehala yang kurang menarik perhatian pelajar. Oleh yang demikian adalah dicadangkan pensyarah menggunakan *power point* yang berbentuk interaktif yang dapat melibatkan pelajar dalam proses pengajaran dan pembelajaran.

Selain itu, kajian juga mendapati kekurangan prasarana yang dihadapi pihak pensyarah dalam proses penyampaian pengajaran dan pembelajaran, adalah dicadangkan pihak pengurusan Politeknik dapat meningkatkan lagi kemudahan-kemudahan seperti menyediakan LCD projektor dalam setiap bilik kuliah dan sentiasa memastikan media pengajaran berada dalam keadaan yang berfungsi demi kelancaran proses pengajaran dan pembelajaran.

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PEMBANGUNAN MODUL PEMBELAJARAN ‘STEP BY STEP TO BUILD YOUR OWN ROBOT’

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Katakunci: Modul pembelajaran, Mobil robot, mikropengawal

Abstrak: Satu modul pembelajaran bertajuk ‘Step by Step to Build Your Own Robot’ telah dibangunkan untuk menarik minat pelajar untuk mempelajari subjek sains terutamanya bidang robotik. Modul ini dibangunkan menjuruskan kepada penggunaan mikropengawal, penulisan aturcara dan litar asas elektronik bagi menghasilkan mobil robot. Tempoh pembelajaran menggunakan modul ini memerlukan masa sekurang-kurangnya selama 3 hari berbanding kaedah pembelajarankonvesional yang memakan masa yang panjang. Tambahanpula, pembelajaran secara konvesional memerlukan pengguna/ pelajar menguasai bahasa C atau bahasa himpunan untuk menulis aturcara pada mikropengawal. Modul ini menggunakan gambarajah carta alir untuk menulis aturcaranya pada mikropengawal. Penghasilan modul ini turut membangunkan platform asas bagi pembinaan mobil robot. Modul ini telah digunapakai kepada guru-guru pelatih, pensyarah-pensyarah, dan guru-guru sekolah rendah sekitar Kuching di Institut Pendidikan Guru, Kampus Batu Lintang, Kuching Sarawak bagi menjayakan kursus asas robotik sempena Program Kemasains.

Pengenalan

Pendidikan merupakan salah satu keperluan dalam pembangunan sumber manusia yang dinamik dalam mencorakkan perubahan dan kemajuan masyarakat dan Negara. Ia menjadi asas kepada Wawasan 2020 yang bertujuan menjadikan Malaysia sebuah Negara maju sepenuhnya dan mampu bersaing dengan negara maju lain sama ada dari segi ekonomi, teknologi dan pemodenan taraf hidup. (Abd Rahim Abd Rashid, 2002). Maka, bidang pendidikan merupakan bidang yang penting dalam membentuk dan membangunkan sesebuah negara. Ia memerlukan usaha-usaha strategik yang boleh meningkatkan keupayaan dan kemampuan amalannya tertahap kualiti yang tinggi dan cemerlang agar dapat menangani cabaran-cabaran abad ke-21.Modul pembelajaran ini merupakan salah satu bentuk modul yang berkonsepkan memberi kemudahan khususnya kepada pelajar yang ingin menerokai pembelajaran baru dalam pembinaan asas robotik. Modul ini dibina untuk pelajar yang mengikuti kursus secara jangka pendek iaitu selama 3 hari sahaja.. Modul jenis ini adalah modul yang lengkap dan mengandungi semua bahan dari pengenalan sejarah robotik, asas pengaturcaraan, dan asas elektronik termasuk cara-cara pembinaan robot secara terus ke atas platform yang disediakan.

Secara tidak langsung, ini dapat membantu pelajar memperoleh, meningkatkan dan menyebarkan ilmu pengetahuan secara lebih sistematik. Dengan ini, pembelajaran modul asas robotik ini mampu menarik minat pelajar untuk mendalami subjek sains serta mengaplikasikan penggunaannya dalam penghasilkan suatu produk inovasi. Kesimpulannya, penggunaan modul adalah digalakkan dan bersesuaian bagi melahirkan pelajar yang mempunyai pemikiran kreatif dan kritis dalam subjek sains bagi memenuhi keperluan tenaga mahir negara selaras dengan kehendak Falsafah Pendidikan Negara.

Okjektif Kajian

i. Membangunkan satu modul pembelajaran bertajuk '**STEP BY STEP TO BUILD YOUR OWN ROBOT'**
ii. Membina platform asas robot yang bersesuaian dengan modul yang dihasilkan.
iii. Menghasilkan modul pembelajaran yang mampu dipelajari dalam tempoh yang singkat dan menarik minat pelajar/peserta yang tiada latarbelakang teknikal.

Kepentingan Kajian

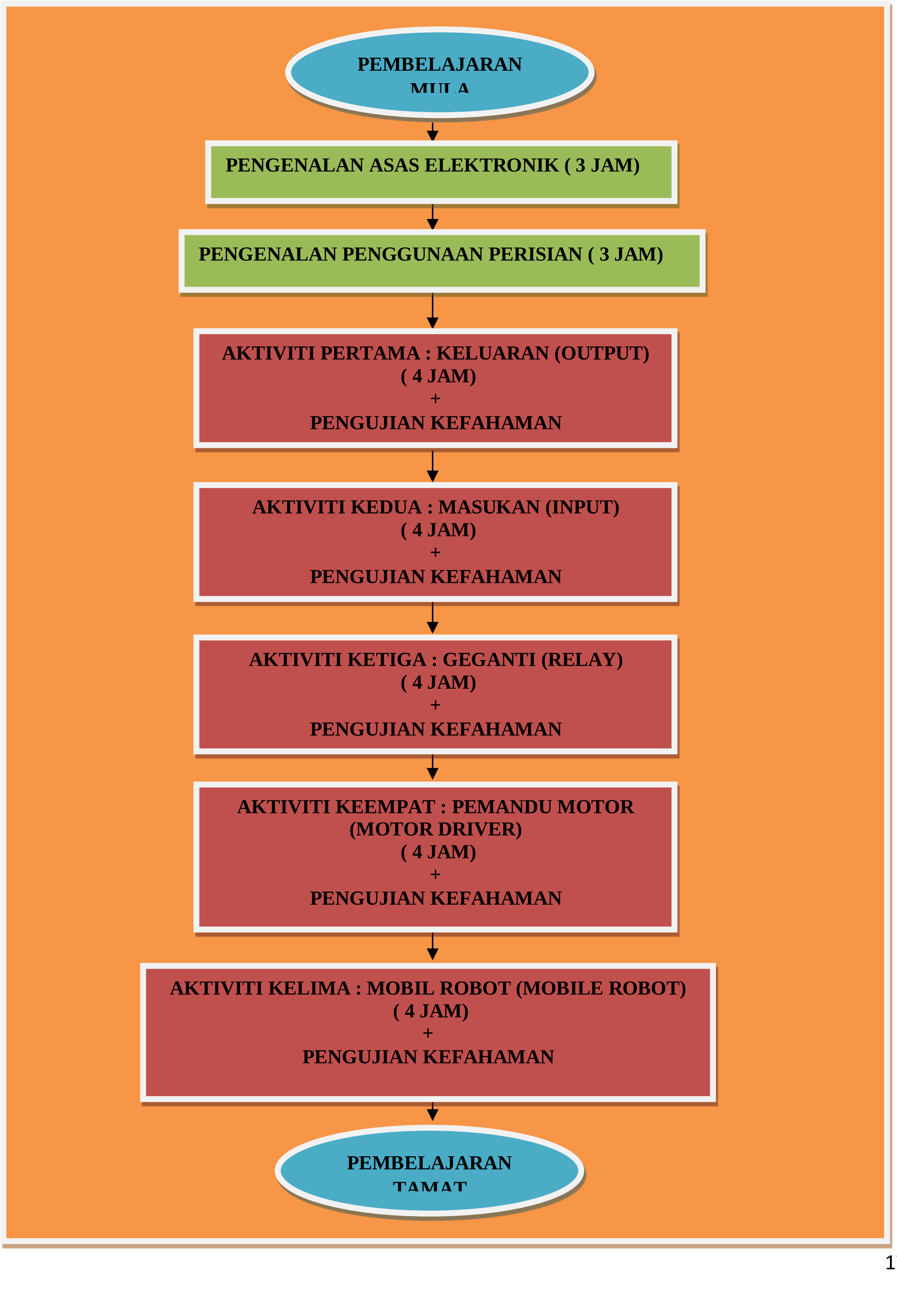
Modul ini dibangunkan mengikut keperluan bagi pembinaan asas robotik yang merangkumi nota sejarah mesin dan robotik, asas pengaturcaraan, dan asas elektronik. Tambahan pula sebuah platform asas robotik telah dihasilkan bagi menjalankan aktiviti yang disediakan dalam modul ini bagi menguji tahan kefahaman pelajar. Maka, pelajar yang mengikuti modul ini mendapat panduan secara khusus bagi membantu mereka dalam menambah pengetahuan dan kemahiran dalam asas pembinaan robotik seterusnya pelajar tersebut mampu mengaplikasikannya dalam kehidupan seharian.

Penyataan Masalah

Di Malaysia khususnya kurang penghasilan modul pembelajaran berkaitan pembinaan asas robot. Tambahan pula, kebanyakan modul pembelajaran yang terdapat dipasaran menggunakan Bahasa C atau himpunan. Maka ia menjadi kekangan pelajar/ pengguna untuk mempelajari dan menguasainya bagi menulis aturcara ke atas robot. Modul pembelajaran turut mewujudkan sebuah platformasas mobil robot yang mudah didapati dari pasaran tempatan maka menjadikan ia murah iaitu dalam lingkungan harga RM 500 seunit berbanding platform robot lain seperti LEGO Mindstorm yang berharga dalam RM1000 – RM 2000 bagi seunit.
SKOP KAJIAN. Modul ini menerangkan tentang pengisian yang padat dan ringkas bagi modul pembelajaran asas robotik yang bertajuk '**STEP BY STEP TO BUILD YOUR OWN ROBOT'.**. Ia juga merangkumi definisi, teori dan dibantu oleh gambar-gambar bagi memudahkan pelajar memahami konsep asas dalam pembinaan robotik asas. Modul ini mengandungi tajuk dan aktiviti yang berkaitan seperti berikut:

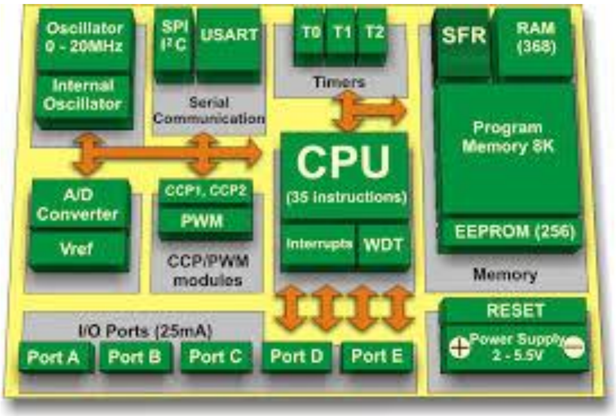
i. Asas elektronik
ii. Asas pengaturcaraan
iii. Aktiviti pertama: penggunaan isyarat keluaran (output)
iv. Aktiviti kedua: penggunaan isyarat masukan (input)
v. Aktiviti ketiga: penggunaan geganti (relay)
vi. Aktiviti keempat:penggunaan motor *driver*
vii. Aktiviti kelima:penghasilan mobil robot

Proses Pembinaan Modul Pembelajaran



Rajah 2: Mikropengawal PIC16F877A

Mikropengawal yang digunakan dalam modul pembelajaran ini adalah PIC (Peripheral Interface Controller) yang dihasilkan oleh Microchip. Mikropengawal adalah sebuah peranti yang mampu mengawal peranti elektronik dan elekro-mekanikal. Mikropengawal banyak digunakan dalam pelbagai poduk seperti sistem kawalan pemanduan kereta, sistem kawalan brek, televisyen, telefon dan lain-lain. Mikropengawal mempunyai unit pemprosesan berpusat (central processing unit (CPU)), ingatan (memory), liang masukan (input ports), dan liang keluaran (output ports).

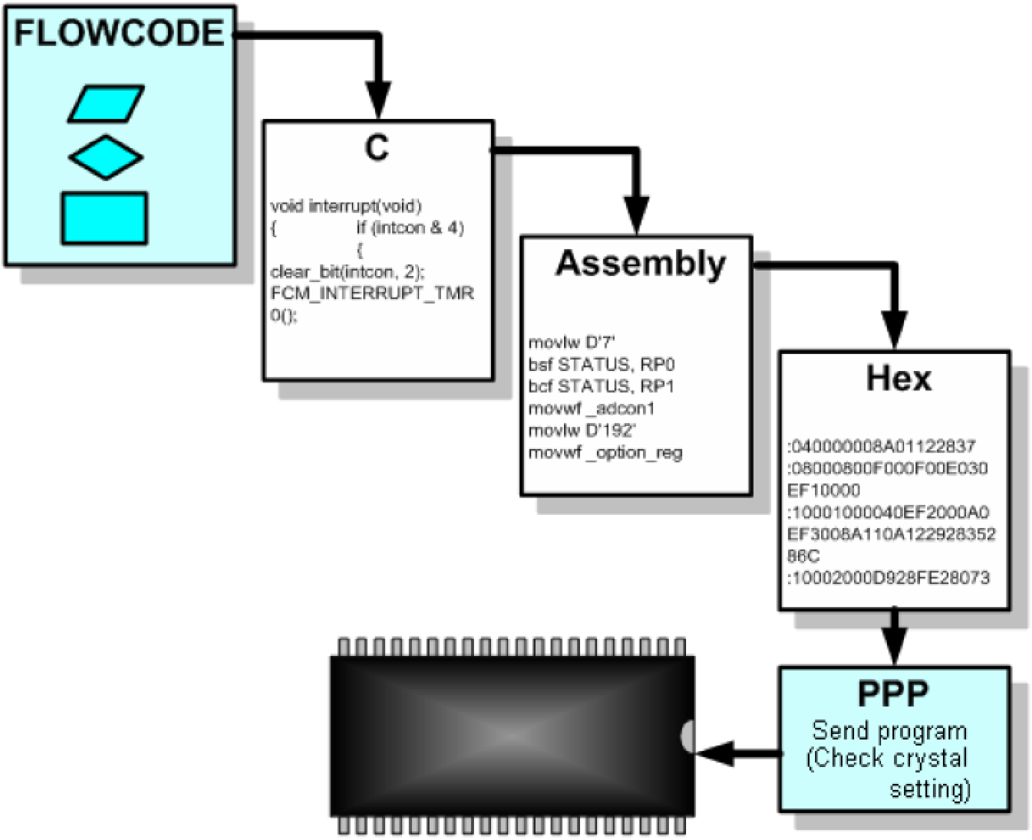


Rajah 3: Binaan Dalaman PIC16F877A

Rajah 3 menunjukkan binaan dalaman mikropengawal yang mengandungi pelbagai tambahan modul dalaman seperti Pulse width modulation (PWM) modul, A/D Converter modul, USART modul, SPI/I^2C modul dan USB modul. Kelebihan ini menjadikan mikropengawal daripada Microchip sebagai pilihan pengguna dan mesra pengguna. Ini akan menjimatkan ruang dan ia boleh diintegrasikan dengan banyak peranti antaramuka. Contohnya seperti litar kawalan pemanduan motor DC, litar kawalan geganti dan litar komunikasi RF.

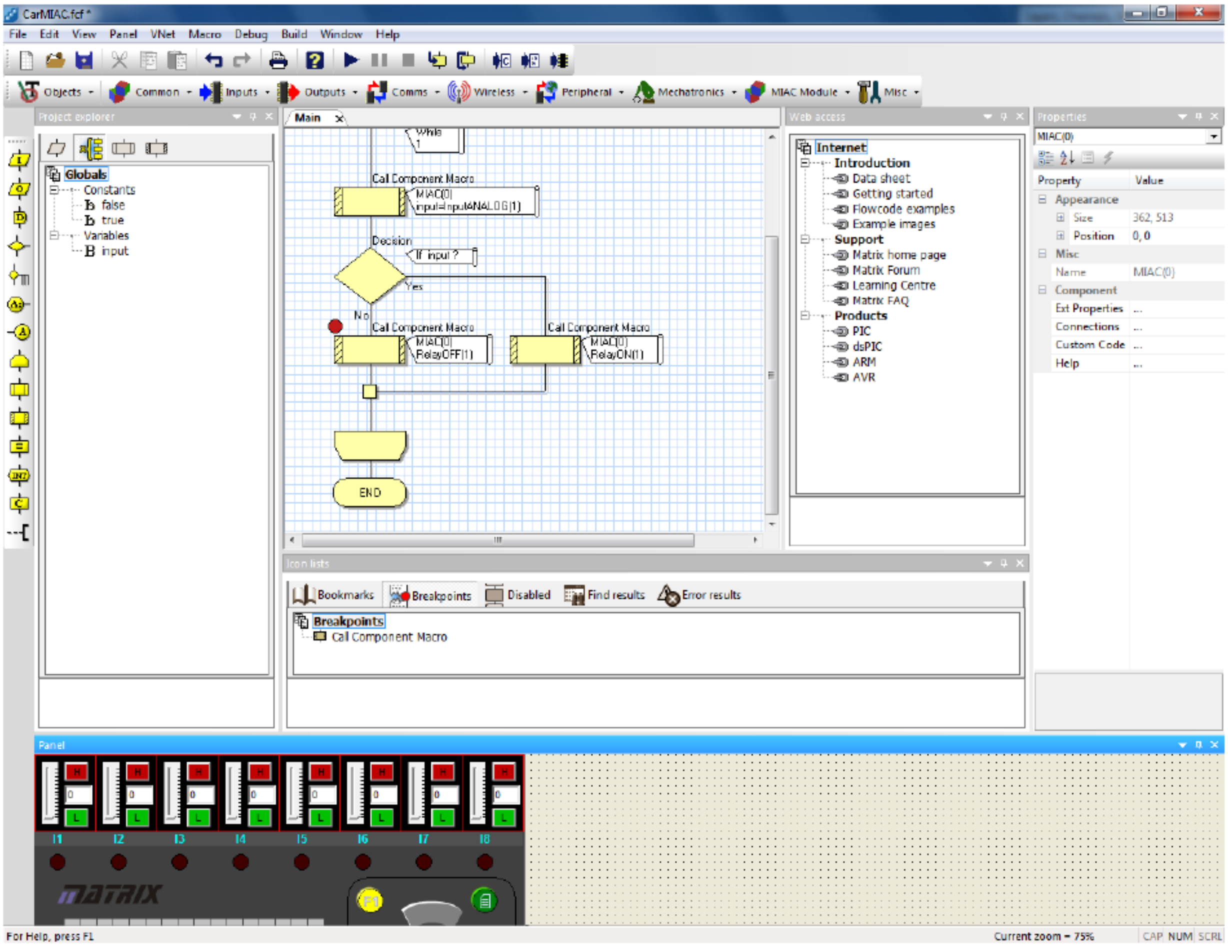
Pengenalan Penggunaan Perisian

Dua perisian yang akan digunakan dalam pembangunan modul pembelajaran ini iaitu Flowcode dan PICKit 2. Pada kebiasaannya mikropengawal penggunaan bahasa C, dan bahasa himpunan mesin (asembly language) dalam pengaturcaraan. Flowcode adalah perisian grafik yang digunakan sebagai bahasa pengaturcaraan di dunia untuk mikropengawal. Kelebihan besar Flowcode ialah ia membolehkan mereka yang mempunyai sedikit pengalaman pengaturcaraan untuk mewujudkan sistem elektronik yang kompleks dalam beberapa minit. Flowcode boleh didapati dalam pelbagai bahasa dan pada masa ini menyokong PICmicro, dsPIC, PIC24, AVR / Arduino dan ARM siri mikropengawal. PICKit 2 digunakan untuk memindahkan program yang dihasilkan oleh Flowcode ke dalam mikropengawal. Rajah 4 menunjukkan carta alir pengunaan Flowcode kepada mikro pengawal.



Rajah 4: Carta Alir Penggunaan Flowcode kepada Mikropengwal

Rajah 5 menunjukan paparan antaramuka Flowcode yang digunakan dalam pembangunan modul pembelajaran ini.



Rajah 5: Paparan antaramuka Flowcode

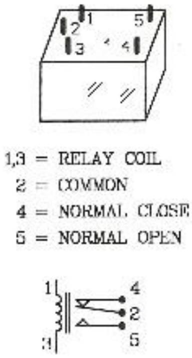
Aktiviti- aktiviti yang dibangunkan

Modul pembelajaran terbahagi kepada lima aktiviti iaitu meliputi pengawalan keluaran menggunakan aplikasi LED, pengawalan menggunakan suis, penggunaan litar geganti (relay), pengawalan litar pemanduan motor DC, dan penghasilan mobil robot. Aktiviti Pertama merupakan aplikasi mikropengawal yang amat berguna dalam modul ini iaitu pengawalan keluaran menggunakan LED. Disamping itu, pengenalan nombor asas dua (binary number) dan asas enambelas (hexadecimal number) serta nombor asas sepuluh (decimal number) kepada pelajar. Jadual 1 menunjukkan hubungan nombor asas sepuluh dan nombor asas dua.

Decimal number	Same number in binary
0	0
1	1
2	10
3	11
4	100
5	101
6	110
7	111
8	1000
9	1001

Jadual 1: Hubungan Nombor Asas Dua dan Nombor Asas Dua

Aktiviti Kedua merupakan penggunaan suis dalam mikropengawal. Ia melibatkan penyambung pelbagai jenis suis dan penderia (sensor) kepada mikropengawal. Aktiviti Ketiga melibatkan penggunaan litar geganti sebagai litar antaramuka mikropengawal. Geganti ialah sejenis suis-elektromekanikal yang dikendalikan pada arus elektrik yang rendah iaitu kira-kira 10 mA. Bertindak sebagai suis kawalan pada litar elektronik yang berarus tinggi seperti pada litar kawalan lampu isyarat. Geganti dikendalikan oleh aruhan magnet. Bahan binaannya terdiri daripada gegelung , plat sesentuh, teras besi dan armatur. Geganti beroperasi apabila arus mengalir melalui gegelung dan aruhan magnet akan terhasil menyebabkan armatur tertarik ke teras besi. Kemudian plat sesentuh bersentuhan dan arus mengalir . Apabila arus elektrik berhenti mengalir, aruhan magnet hilang, armatur terlepas dan plat sesentuh terbuka semula. Geganti dalam litar elektronik bervoltan rendah iaitu 6V, 9V dan 12V. Dua jenis geganti yang biasa digunakan adalah seperti kutub tunggal satu arah (SPST) dan kutub tunggal dua arah (SPDT). Rajah 6 menunjukkan binaan dan sambungan geganti.



Rajah 6: Binaan dan sambungan dalam geganti

Motor DC dijadikan sebagai salah satu pengerak(actuator) bagi aktiviti keempat. Bagi mengaktifkan motor DC, litar antaramuka motor DC perlu digunakan. Terdapat banyak arahan yang boleh dibuat dengan motor DC apabila digabungkan bersama mikropengawal. Sebagai contoh, ia boleh mengawal kelajuan motor, mengawal arah putaran dan melakukan pengekodan putaran yang dibuat oleh motor DC. Dalam aktiviti ini, kita akan mempelajari bagaimana untuk menghubungkan antara motor DC dengan mikropengawal. Biasanya H-jambatan digunakan untuk litar antaramuka motor DC. Hari ini banyak pengeluar IC mempunyai *motor driver* H-jambatan (H-bridge) yang terdapat di pasaran seperti L293D adalah yang paling banyak digunakan. H-jambatan juga boleh dibuat dengan bantuan transistors dan MOSFET. Aktiviti terakhir bagi modul pembelajaran ini adalah menghasilkan mobil robot. Aktiviti penghasilan mobil robot ini merupakan gabungan hasil daripada semua aktiviti yang dilakukan sebelum ini. Kefahaman pelajar akan dinilai berdasarkan kepada penghasilan robot tersebut.

Pembinaan Platform asas robot

Modul pembelajaran ini menghasilkan satu platform robot asas bagi pelajar menjalankan aktiviti-aktiviti yang disediakan . Jadual 2 menunjukkan kos pembinaan platform asas robot bagi modul pembelajaran ini.

Bil.	Peranti/Peralatan	Unit	Harga (RM)
1	PIC Main Board	1	70.00
2	PIC16F877A	1	25.00
3	Breadboard	1	15.00
4	3V Miniature Brush Motor w/o Gear	2	9.00
5	L293D	1	13.00
6	Male to Female Jumper Wire	1	6.00
8	LED 5mm	6	1.20
9	Battery 9V w Cap	1	5.00
10	Mini Wheel	2	10.00
11	Aluminum Plate Mobile Platform	1	98.00
12	PIC Kit2 Programmer	1	70.00
Jumlah Kos			**322.20**

Jadual 2: Senarai kos peranti dan peralatan

TEMPAT KAJIAN

Kajian ini akan dilakukan Institut Pendidikan Guru, Kampus Batu Lintang, Kuching Sarawak. Pemilihan tempat kajian ini adalah bersesuaian dengan kepentingan kajian iaitu menghasilkan modul bagi peserta/pelajar yang tidak mempunyai latar belakang teknikal terutamanya asas robotik serta tempoh masa pembelajaran yang diperlukan.

SAMPEL KAJIAN

Bagi tujuan kajian ini, pengkaji telah memilih peserta seramai 40 orang sebagai responden yang akan menjalani penilaian keberkesanan modul. Tujuan utama pemilihan sampel ini terdiri daripada 13 orang guru sekolah rendah sekitar Kuching, 17 orang guru pelatih dan 9 orang pensyarah termasuk Ketua Jabatan Sains daripada Institut Pendidikan Penguruan Kampus Batu Lintang,Kuching. Pengkaji memilih kesemua responden dipilih kerana tidak mempunyai latarbelakang teknikal dan berbilang tahap umur bagi menjalankan modul pembelajaran ini.

INSTRUMEN KAJIAN

Ujian dalam Aktiviti

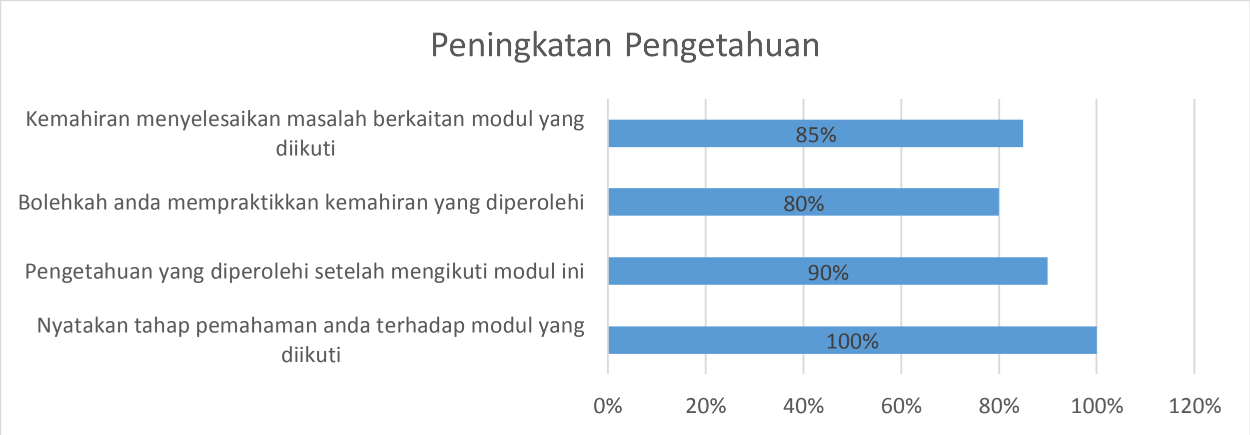
Ujian pasca (dilakukan di akhir kajian). Ujian ini akan dijalankan dengan melihat prestasi peserta menyelesaikan aktiviti yang disediakan. Setiap aktiviti mempunyai tugasan yang berbeza untuk melihat tahap kefahaman peserta yang terlibat. Sebanyak 5 ujian diadakan sepanjang modul ini dijalankan.

Soal selidik

Penyelidik menggunakan borang soal selidik untuk melihat penerimaan responden tentang modul yang dibina. Soal selidik terbahagi kepada 2 bahagian iaitu peningkatan pengetahuaian dan keberkesanan modul yang dijalankan untuk menilai penerimaan modul yang dibina. Kaedah ini digunakan dalam menentukan kesahan dan kebolehpercayaan.

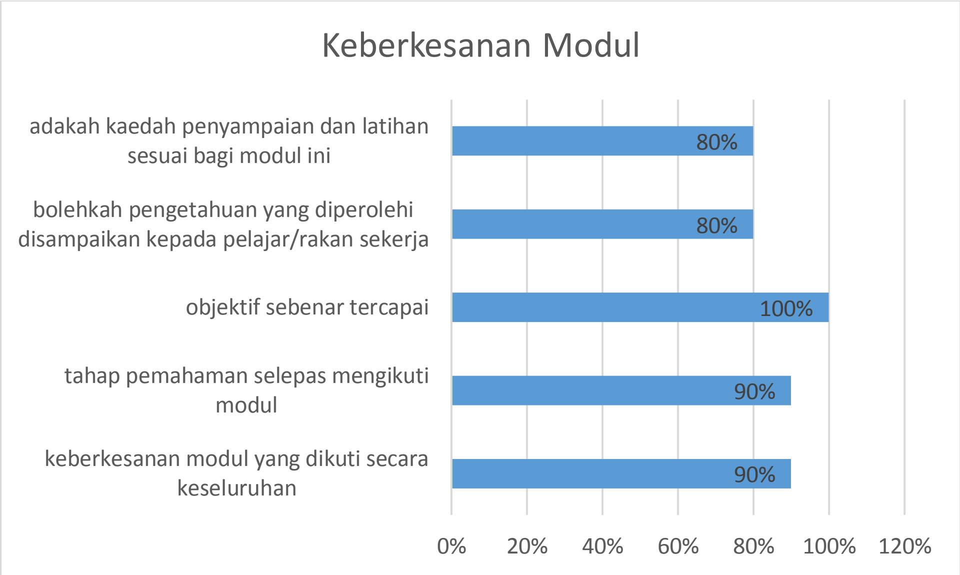
Analisis data

Graf 1 menunjukkan item soalan yang dikemukakan dalam peningkatan pengetahuan. Daripada analisis didapati, secara keseluruhannya peratusan yang diperolehi dalam peningkatan pengetahuan adalah melebihi 80% setelah mengikuti modul yang dijalankan. Item yang mencatat peratusan tertinggi dalam peningkatan pengetahuan adalah penyataan tahap pemahaman yang peserta terhadap modul yang dijalankan. Selain itu, item seperti pengetahuan yang diperolehi setelah mengikuti modul ini juga mencatat peratusan sebanyak 90%. Item yang mencatat peratusan terendah adalah kemampuan peserta mempraktikkan kemahiran yang diperolehi iaitu sebanyak 80%. Ini memberi maksud modul yang dibina mampu meningkatkan pengetahuan dan pemahaman peserta tentang asas robot.



Graf 1:Peratusan Item Peningkatan Pengetahuan

Graf 2 menunjukkan item soalan yang dikemukakan dalam keberkesanan modul. Daripada analisis didapati, secara keseluruhannya peratusan yang diperolehi dalam keberkesanan modul juga adalah melebihi 80% setelah mengikuti modul yang dijalankan. Item yang mencatat peratusan tertinggi dalam keberkesanan modul adalah objektif sebenar modul tercapai. Ini memberi maksud modul yang dibina membolehkan objektif peserta untuk belajar membina robot asas tercapai.



Graf 2: Peratusan Item bagi keberkesanan Modul

Pembincangan

Modul pembelajaran yang dibina mampu dipelajari dalam tempoh yang singkat dan menarik minat pelajar/peserta yang tiada latarbelakang teknikal khususnya untuk mempelajari asas pembinaan robot asas dalam masa yang singkat. Modul '**STEP BY STEP TO BUILD YOUR OWN ROBOT'**yang telah siap ini, merupakan modul pembelajaran yang dibina berdasarkan Model Pembinaan Modul Sidek. Pemilihan model ini adalah bersesuaian dan mudah untuk diikuti kerana ia mempunyai peringkat-peringkat tertentu yang membolehkan modul dihasilkan dengan baik. Modul yang telah dibina telah pun melalui dua peringkat utama yang telah dinyatakan dalam Model Pembinaan Modul Sidek iaitu menyediakan draf serta peringkat mencuba dan menilai modul. (Sidek Mohd Noah dan Jamaludin Ahmad, 2005).

Pada peringkat pertama, setiap langkah yang telah disarankan dalam Model Pembinaan Modul Sidek telah diikuti. Setelah siap disatukan, modul akan dipanggil sebagai draf kerana modul ini belum dibuktikan kesahan dan kebolehpercayaannya. (Sidek Mohd Noah dan Jamaludin Ahmad, 2005). Seterusnya, modul akan dibuktikan melalui kesahan dan kebolehpercayaan modul. Kesahan modul telah dijalankan dengan mengambil 10 orang pensyarah Institut Pendidikan Guru yang pakar dalam pembelajaran sains bagi modul '**STEP BY STEP TO BUILD YOUR OWN ROBOT'** telah dibina memperolehi nilai kesahan yang tinggi. Ini dapat disokong oleh kenyataan yang dibuat oleh Sidek Mohd Noah dan Jamaludin Ahmad (2005), modul yang baik perlulah mempunyai kesahan dan kebolehpercayaan yang tinggi bagi membolehkan ia digunapakai oleh pelajar mahupun pensyarah

Penghasilan modul '**STEP BY STEP TO BUILD YOUR OWN ROBOT'**telah ini, akan memberikan kesan terhadap gambaran dan pemahaman pengguna. Oleh itu, modul seharusnya dibina dalam satu gambaran yang jelas, konsisten dan menarik. Modul dibina menggunakan Teori Beban Kognitif bagi meminimumkan beban ke atas kognitif pengguna. Pendekatan yang digunakan ini penting bagi memudahkan pemahaman pengguna berkenaan pengajaran yang hendak disampaikan. Penggunaan teori yang sesuai adalah sangat penting dalam penyampaian sesuatu isi dalam modul dan selaras dengan matlamat pengasilan modul yang ringkas dan padat. Ini juga bertepatan dengan kenyataan bahawa Teori Beban Kognitif menurut pandangan Sweller (1998) dalam kajian Norzawani (2008), ialah individu akan memperoleh pembelajaran yang optimum apabila beban ingatan kerja (ingatan jangka pendek) dapat diminimumkan. Oleh itu, Teori Beban Kognitif sesuai diaplikasikan dalam bahan pembelajaran seperti modul ini.

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Successful English Language Learners' Strategies in AE101 Communicative English 1 Class

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Keywords: Language Learning Strategies, Good Language Learners

Abstract. Learning strategies are anything done or made by the learners in order for them to improve their own learning. The purpose of this study was to investigate the usage of Language Learning Strategies (LLS) among good language learners (GLL) in semester 1 class. This research is conducted by distributing questionnaires to the students. The questionnaires used were modified from the Language Strategy Use Survey by Cohen, Oxford & Chi (2002) and Cohen & Oxford (2002). The inventory is used to cover the four language skills which are reading, writing, speaking and listening. The respondents were 10 semester 1 students who took AE 101 Communicative English 1 course in Nilai Polytechnic. Based on the research conducted, the successful English language learners used different types of Language Learning Strategies in order for them to improve their English. These strategies would be very useful for other students to improve their English.

1.0 Introduction

According to Scarcella & Oxford (1992), learning strategies are specific actions, behaviours, steps or techniques used by students to enhance their own learning. The examples of these actions or steps are looking out for conversation pairs or giving oneself encouragement to tackle a difficult language task. In other words, it can be said that learning strategies are anything done or made by the students in order for them to improve their own learning. The purpose of language learning strategies is to make sure that the learners are able to accomplish the learning tasks given by the teacher (Richard & Lockhart, 1996) and the main goal is to promote language proficiency (Tudor, 1996) so that the learner can use the language not only inside the classroom but in their everyday lives. Based on the advocates, it is obvious that learning strategies are very important in learning a language as the proverb says: "Give a man a fish and he eats for a day. Teach him how to fish and he eats for a lifetime". By teaching the students the strategies to learn language, the students will have the opportunity to apply the strategies to other situation or context.

1.1 Research Problem

1) The previous semester's result for AE101 show that students might face problems in learning the English language despite the efforts made by the English Language lecturers to use several methods and visual aids in teaching.

1.2 Research Question

1) What are the strategies often used by successful language learners to improve their English?

1.3 Research Objective

This research was carried out to identify the main features of the strategies used by successful language learners in AE 101 class in Nilai Polytechnic by assessing the respondents' learning experience, techniques, actions, attitudes, and strategies used to learn English as a second language in improving their language skills which are reading, speaking, writing and listening. The data collected will explain the strategies used by the good language learners to enhance their language skills.

2.0 Literature Review

This chapter is to provide some background on language learner strategies and the theories of language learning strategies. The relevant theories are cognitive and social cognitive theories. This chapter also exposes the relationship between various definitions of language learning strategies and the characteristics of successful English language learners. By explaining the characteristics, better understanding on the different strategies used by successful language learners while learning English can be developed. Chamot and O'Malley (1990, 1996) proposed a three-part strategy taxonomy based data collection using interviews and think-alouds by ESL young adult learners;

1. Metacognitive strategies: planning (advance organization, organizational planning, selective attention, self-management), monitoring (monitoring comprehension and production), and evaluating (self-assessment)
2. Cognitive strategies: Resourcing (finding and using appropriate resources), grouping, note-taking, elaboration of prior knowledge, summarizing, deduction/induction, imagery, auditory representation and making inferences
3. Social/affective strategies: questioning for clarification, cooperation and self-talk. According to O'Malley and Chamot, their work draws theories in cognitive science, particularly in information processing theory which will be discussed later. It is important to note that their classification was not only theory-based but also has been fairly accepted by both teachers and researchers in the field.

According to Rubin (1994) The good language learner :

- Is a willing and accurate guesser
- Has a strong drive to communicate
- Is uninhibited
- Attends to form
- Practices by seeking out conversations
- Monitors his or her own speech and the speech of others
- Attends to meaning

Thus in order for a student to be a good language learner, that student must be different from the usual poor learner that will make them learn faster and better as compared to poor learner. The use of language learning strategies of EFL learners has been widely investigated over the past 30 years through various elicitation methods and tools. One of the most widely used measures has been the Strategy Inventory for Language Learning (SILL). (Dörnyei 2005, White, Schramm and Chamot 2007) as cited by Kazamia, V. It is a structured questionnaire, aiming to assess how often learners employ specific language learning strategies. It equips teachers with the strategy profile of their students and uncovers to learners the kinds of strategies they resort to when learning English as a second or foreign language (Oxford 1990)

3.0 METHODOLOGY

3.1 Instrumentation

This survey was conducted by distributing questionnaires to the samples. The questionnaire used was modified from the Language Strategy Use Survey by Cohen, Oxford & Chi (2002) and Cohen & Oxford (2002). The inventory is used to cover the four language skills which are reading, writing, speaking and listening. There are 20 items in the questionnaire and the items are modified based on the discussion with other qualified and experienced English lecturers about how polytechnic students learn.

For each skill, 5 questions are asked to the respondents and they will have to choose whether the strategy doesn't fit for them, they have tried the strategy and would use it again, they use and like the strategy or they have never used the strategy but they are interested in using the strategy.

3.2 Respondents

The respondents were 10 semester 1 students taking AE 101 Communicative English 1 course in the polytechnic. The students were selected based on their result in AE 101 Communicative English 1 course whereby all the students obtained A for the course at the end of the semester.

4.0 FINDINGS & DISCUSSION OF FINDINGS

The listening strategy usage

Strategies	This strategy doesn't fit for me	I have tried this strategy and would use it again	I use this strategy and like it	I've never used this strategy but am interested in it
I watch movies and TV shows in English.	-	20% (2)	80% (8)	-
I listen to my favourite songs in English.	10% (1)	20% (2)	60% (6)	10% (1)
I listen for the important words without translating it word-for-word.	40% (4)	20% (2)	40% (4)	-
I ask the person to repeat or explain again in a simpler way.	-	10% (1)	80% (8)	10% (1)
I guess the meaning from what I heard or from my own knowledge	20% (2)	40% (4)	40% (4)	-

Table 1: The listening strategies used by the students.

Based on Table 1, the data collected revealed that 80% of the students watch movies and TV shows in English and they like the strategy. Only 20% or 2 of the respondents agreed that the strategy didn't fit for them. Most of the respondents prefer to improve their English by watching movies and TV shows in English. Most probably because they can understand the shows by reading the subtitle and this can improve their English.

Other than that, 60% of the respondents use and like to listen to their favourite songs in English in helping them to improve their English, 10% said this strategy didn't fit for them, 20% have tried and would use it again and 10% never used but am interested in using this strategy. This strategy is also one of the respondents favourite choice with 60% of them use and like this strategy. The respondents are 18 years old and most of them like to listen to English songs and based on the data received they believed this strategy can help to improve their English. Over 40% of the respondents listen for the important words without translating it word-for-word, 40% agreed this strategy didn't fit for them and 20% have tried this strategy and would use it again. The next strategy is I ask the person to repeat in a simpler way. 80% of the respondents use and like this strategy, both 10% of the respondents thoughts the strategy didn't fit for them and never used this strategy but am interested in using it. This strategy is also used by almost all of the respondents (80%). The students learnt how to ask for clarification and rephrasing sentences in AE 101 course, so for them asking the speaker to repeat is one of the effective ways to improve their English. The last strategy is guessing the meaning from what I heard or from my own knowledge. 40% of the respondents use and like this strategy, another 40% have tried this strategy and would use it again and another 20% of the respondents thought this strategy didn't fit for them. So, in conclusion, it can be deduced that the respondents have different strategies in making themselves better learners, but the most chosen strategies are watching movies and TV shows in English and also asking the speaker to repeat or rephrase. The least used strategy is listen for the important words without translating it word-for-word, but 2 of the respondents have tried it before and would use it again in the future.

The speaking strategy usage

Strategies	This strategy doesn't fit for me	I have tried this strategy and would use it again	I use this strategy and like it	I've never used this strategy but am interested in it
I practice speaking in front of mirror or friends	-	20% (2)	70% (7)	10% (1)
I start conversations in English with my lecturers and friends.	-	40% (4)	60% (6)	-
I ask other person especially	10%	10%	60%	20%

my friends to correct me when I talk.	(1)	(1)	(6)	(2)
I use body and facial gestures when speaking to enhance others' understanding.	10% (1)	20% (2)	50% (5)	20% (2)
I make up new words or guess if I don't know the right ones to use.	30% (3)	20% (2)	40% (4)	10% (1)

Table 2: The speaking strategies used by the students.

Table 2 above shows the data on the speaking strategies used by the good English learners in the class. For the first strategy which is, I practice speaking in front of mirror or friends, 70% of the respondents use and like this strategy, 20% have tried and would use this strategy again and 10% of them never used this strategy but they are interested in using it. Based on the data, this strategy is the most popular strategy among the 10 respondents with 7 of them use and like this strategy. For AE101 course, the students are required to do an oral presentation as one of their assessments. The data received shown that the students are using this strategy to help them to improve their English and presentation skills.

Meanwhile for the second strategy which is, I start conversations in English with my lecturers and friends, 60% of the respondents use and like this strategy and the rest (40%) of the respondents have tried and would use it again. The third strategy is I ask other person especially my friends to correct me when I talk. For this strategy, 60% of the respondents use and like this strategy, 20% never used this strategy but interested in it, and both 10% thought this strategy didn't fit for them and have tried this strategy and would use it again. The second and third strategies have equal number of respondents which are 60%. Some of the students like to ask questions and start a conversation with their friends and lecturers in English. Even though they made mistakes, they still try to speak in order for them to improve themselves. Other than that, some of the students will also ask their friends to correct them when they speak.

The next strategy listed in the inventory for speaking is I use body and facial gestures when speaking to enhance others' understanding. For this strategy, 50% of the respondents use and like this strategy, 20% have tried and would use it again and another 20% never used but interested in it and lastly 10% thought this strategy didn't fit for them. As for this strategy, half of the students use this strategy in improving their English. The students also learn about gestures and movements in this course. So, based on the findings it can be said that the respondents thought this strategy could help them in learning English. The last strategy for speaking is I make up new words or guess if I don't know the right ones to use. Based on the data displayed in Table 2, 40% of the respondents use and like this strategy, 20% thought this strategy didn't fit for them, 20% have tried and would use it again and 10% have never used it before but are interested in it. So, for speaking strategy, it can be concluded that the most preferred strategy is practice in front of mirror or friends and the least chosen strategy is making up new words or guess if the learner doesn't know the right words to use.

The writing strategy usage

Strategies	This strategy doesn't fit for me	I have tried this strategy and would use it again	I use this strategy and like it	I've never used this strategy but am interested in it
I plan what I am going to write in Malay first before writing in English	30% (3)	10% (1)	40% (4)	20% (2)
I ask the lecturer to check my writing.	-	20% (2)	70% (7)	10% (1)
I use dictionary when writing to look for suitable word to use.	10% (1)	30% (3)	50% (5)	10% (1)
I use spell checker in the computer while writing.	30% (3)	30% (3)	30% (3)	10% (1)
I read back what I have written to see if it is good and make necessary corrections.	-	20% (2)	80% (8)	-

Table 3: The writing strategies used by the students.

Table 3 above shows the writing strategies used by the students in becoming good English learner. There are 5 strategies. For the first strategy, only 40% of the respondents plan what they going to write in Malay first before writing in English, another 30% thought this strategy didn't fit for them, 20% have never used this strategy but are interested in it and 10% have tried this strategy and would use it again. For the next strategy, which is, I ask the lecturer to check my writing, 70% of the respondents use and like this strategy, 20% have tried and would use it again and the rest which is only 10% of the respondents have never used this strategy but interested in using it. 7 out of 10 respondents chose this strategy since they prefer to receive comments from their lecturers regarding their writing. Based on the lecturer's comments, they will try to correct the mistakes and improve their writing.

The third strategy is I use dictionary when writing to look for suitable word to use. Half of the respondents (50%) use and like this strategy, 30% have tried and would use it again, 10% thought this strategy didn't fit for them and another 10% have never used this strategy but are interested in it. The next strategy is I use spell checker in the computer while writing. Based on the data collected, 30% of the students use and like this strategy, 30% have tried and would use it again, 30% thought this strategy didn't fit for them and only 1 respondent have never used this strategy but interested in it. For the last strategy, 80% of the students use and like this strategy and the remaining 20% have tried and would use it again. This strategy is the most popular strategy among the respondents in improving their writing skills with 8 of them use and like it. The students would prefer to be given some time for them to check back their writing so that they can make any corrections before submitting it to the lecturer. Overall, the most preferred strategy for the respondents in learning writing is I read back what I have written to see if it is good and make necessary corrections and the least used strategy is I use spell checker in the computer while writing. Other than that, 3 of the respondents have used this strategy and would use it again.

Reading strategy usage

Strategies	This strategy doesn't fit for me	I have tried this strategy and would use it again	I use this strategy and like it	I've never used this strategy but am interested in it
I look for interesting reading materials in English.	-	40% (4)	60% (6)	-
I skim over the reading materials to get the main idea and then go back and read it more carefully.	10% (1)	30% (3)	60% (6)	-

Guess the approximate meaning by using clues from the context of the reading materials.	10% (1)	20% (2)	50% (5)	20% (2)
Use bilingual dictionary to get a sense of what the equivalent word in Malay would be.	20% (2)	10% (1)	40% (4)	20% (2)
Use English-English dictionary to see how words are defined.	10% (1)	20% (2)	60% (6)	10% (1)

Table 4: The reading strategies used by the students.

Based on Table 4 above, there are 5 strategies selected for reading strategies used by the students. For the first strategy which is, I look for interesting reading materials in English, 60% of the respondents use and like this strategy whereas the remaining 40% have tried this strategy and would use it again. As for the second strategy which is, I skim over the reading materials to get the main idea and then go back and read it more carefully, 60% of the respondents use and like this strategy, 30% of them have tried and would use it again and 10% thought this skill didn't fit for them. For the third strategy which is, guess the approximate meaning by using clues from the context of the reading materials, half of the respondents (50%) use and like this strategy, 20% have tried and would use it again and another 20% have never tried it but interested in it and lastly only 10% of the respondents thought this strategy didn't fit for them. Moving on to the next strategy, 40% of the respondents use and like the strategy of using bilingual dictionary to get a sense of what the equivalent word in Malay would be, 20% have never used the strategy before but are interested in it, another 20% of the respondents thought the strategy didn't fit for them. Lastly, the strategy listed in the inventory, is use English-English dictionary to see how words are defined. For this strategy, 60% of the respondents use and like this strategy, 20% have tried this strategy and would use it again, 10% thought this strategy didn't fit for them and another 10% have never tried but interested in it.

Based on the data collected, it can be concluded that most of the respondents use all these strategies when they are reading. This is because 60% of them look for interesting reading materials in English, 60% skim over the reading materials to get the main idea, half of the, guess the approximate meaning using clues, 40% use bilingual dictionary and 60% use English-English dictionary to see how words are defined. So, there is no particular choice of strategy used when they read made by the respondents proven by more than half of the respondents use and like these 5 strategies when they are reading.

5.0 DISCUSSION

After analyzing the overall data, it can be concluded that the findings of this research support the broad language learning strategies used by successful language learners reported by Mohamed Amin Embi (2000) as cited in Mohamed Amin Embi (2010), which are, the learners seek and create opportunities to use the language, they practice, make use of social agents. In this case, the learners prefer to ask help from their friends and lecturers and also ask their friends to correct their mistakes as when they are learning grammar and also for writing strategy, whereby the learners ask help from friends and lecturers.

Other than that, the successful language learners will also try to get the message across and they are willing to try out different ways in order to get their message across. For an example, the learners use bilingual dictionary to look for meaning of words. This shows that a good language learner will not give up easily and will try as best as they could to understand something. A successful language learner also reads extensively. This is proven by the data received in this research. For reading strategy, more than half of the respondents skim over the reading materials to get the main idea and then go back and read more carefully. More than half of the respondents also look for interesting reading materials in English. This attitude is different from a poor language learner whereby they usually depend on textbooks only.

According to the findings, the respondents who happen to be good language learners also monitor their speech and the speech of others. More than half of the respondents practice talking in front of mirror or their friends. They also use facial gestures and body movement to enhance the listeners’ understanding towards the topic they are talking about. They also pay attention to others by giving comments on their friends speech or giving opinion. A successful language learner also tries out different learning strategies. Based on the data received, it can be said that almost all of the 60 strategies have been used by the respondents and that make them successful language learners. Poor language learners, on the other hand, practice only a small range of effective language learning strategies.

6.0 CONCLUSION

In conclusion, the successful English language learners would use different types of Language Learning Strategies in order for them to improve their command of the English language. They would use the three main types of LLS which are metacognitive, cognitive and socioaffective (O’Malley & Chamot 1985) as cited in Mohamed Amin Embi (2010). Based on the findings of this research, the successful English language learners are aware of the various language learning strategies available that can be used to enhance their language learning.

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Persepsi Pekerja Syarikat Kontena Nasional Berhad, Petaling Jaya Terhadap Penggunaan Logistik Halal

(Employee Perceptions of the Kontena Nasional Berhad, Petaling Jaya on the use of halal Logistics)

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Key words: Employee perceptions, Halal Logistics

ABSTRAK: Logistik Halal adalah satu pendekatan untuk mengelakkan pencemaran barang mudah rosak, bahan-bahan mentah dan produk makanan semasa aktiviti pengedaran dengan mengambil kira keperluan untuk produk Halalan Toyibban untuk dimakan oleh pengguna Islam. Piawaian Malaysia Logistik Halal (MS 2400: 2010) menyediakan garis panduan mengenai logistik halal berdasarkan undang-undang Syariah dalam pengangkutan, pergudangan, dan peruncitan. Keperluan logistik halal melibatkan spesifikasi di seluruh pemprosesan, pengendalian, pengedaran, penyimpanan, pameran, berkhidmat, pembungkusan dan pelabelan produk. Terdapat kebimbangan mengenai persepsi pekerja bagi memenuhi standard yang diperlukan pada pelaksanaan logistik halal. Kajian ini bertujuan untuk mengkaji persepsi pekerja syarikat Kontena Nasional Berhad, Petaling Jaya pada penggunaan logistik halal. Kajian ini melibatkan 28 pekerja di Jabatan Pergudangan syarikat Kontena Nasional Berhad, Petaling Jaya. Analisis ini menggunakan statistik deskriptif untuk menerangkan persepsi pekerja terhadap penggunaan logistik halal. Kajian ini mendapati bahawa persepsi pekerja terhadap syarikat Kontena Nasional Berhad, Petaling Jaya mempunyai persepsi yang positif terhadap penggunaan logistik halal di dalam gudang.

ABSTRACT: Halal logistics is an approach to avoid contamination of perishables, raw materials, and food products during distribution activities taking into consideration the need for Halalan Toyibban products for consumption by Muslim consumers. The Malaysian Standard for Halal Logistics (MS 2400:2010) provides the guidelines on halal logistics based on the Shariah law for transportation, warehousing and retailing. The requirements for halal logistics involve specifications throughout processing, handling, distribution, storage, display, serving, packaging, and labelling of the products. There are concerns on employees perception meeting the required standards on halal logistics implementation. This study seeks to examine employees' perception of the company Kontena Nasional Berhad, Petaling Jaya on the use of halal logistics. The study involved 28 employees in the warehouse department of company Kontena Nasional Berhad, Petaling Jaya. The analysis uses descriptive statistics to explain employees' perception on the use of halal logistics. The study found that the perception employees' of company Kontena Nasional Berhad, Petaling Jaya have a positive perception of the use of halal logistics in the warehouse.

Pengenalan

Logistik halal di Malaysia masih lagi diperingkat awal dan tiada syarikat logistik yang berjaya mengakui sebagai model yang menjalankan aktiviti halal secara menyeluruh kerana majoriti pembekal perkhidmatan logistik halal masih lagi kekurangan tenaga pakar dan pengetahuan mengenai kaedah yang betul bagi menguruskan logistik halal (Shafie & Othman, 2006). Melihat permasalahannya bukan hanya timbul dikalangan pengguna tetapi juga dari kalangan pengurusan ataupun pekerja di syarikat itu sendiri. Pekerja khususnya tidak diberi pendedahan tentang bagaimana saluran rantaian bekalan seperti makanan, penyimpanan, penghantaran dan pengurusan halal secara terperinci. Sehubungan dengan itu, masalah utama kajian ini adalah apakah persepsi pekerja terhadap penggunaan logistik halal dibahagian pergudangan.

Objektif kajian ini adalah seperti berikut:

Persepsi pekerja syarikat Kontena Nasional Berhad, Petaling Jaya terhadap penggunaan logistik halal dibahagian pergudangan.

Kajian Literatur

Persepsi: Persepsi adalah proses internal yang memungkinkan kita memilih, mengorganisasikan, dan menafsirkan rangsangan dari lingkungan kita, dan proses tersebut mempengaruhi perilaku kita berdasarkan teori Robert dan Paul.**(Robert a. boron dan Paul b. Pulus, 1991).** Persepsi juga adalah proses dimana kita memilih, menyusun dan mentafsirkan sesuatu input maklumat bagi mewujudkan gambaran yang bermakna. Persepsi tidak hanya bergantung kepada rangsangan fizikal, tetapi ianya juga bergantung kepada rangsangan terhadap persekitaran dan keadaan disekeliling kita (Kotler & Keller, 2012). Dalam kajian ini, pengkaji hanya memfokuskan kepada persepsi pekerja terhadap penggunaan logistik halal.

Logistik Halal: Menurut (Tieman M. , 2008) logistik halal adalah proses menguruskan aliran bahan dan aliran maklumat di sepanjang rantaian bekalan mengikut prosedur halal. Aliran bahan meliputi operasi pengangkutan, penyimpanan dan terminal. Aliran maklumat meliputi pengurusan data didalam rantaian bekalan, seperti maklumat produk, data permintaan, label logistik halal dan kod logistik halal adalah sistem berdasarkan pengasingan bukan pengesanan.

Menurut (Mariam, 2012) logistik halal di Kontena Nasional berpandukan Malaysian Standard (SIRIM, 2010) yang diasaskan dari prinsip Halalan Toyyiban yang bukan saja memberi tumpuan kepada ciri halal tetapi juga bersih dan selamat bagi seluruh keperluan dalam rantaian proses pengangkutan, pergudangan, sehinggalah kepada peruncitan. Selain komponen Syariah, standard MS2400:2010 turut menggabungkan ciri standard dan prinsip pengurusan berkualiti yang diiktiraf antarabangsa seperti Analisis Bahaya Titik Kawalan Kritikal HACCP dan Pertubuhan Antarabangsa bagi Standard ISO 2200.

Isu Pergudangan: Logistik halal adalah industri yang baru berkembang di seluruh dunia dan Malaysia merupakan salah satu perintis bagi sektor ini. Akan tetapi, pembekal perkhidmatan bagi sektor ini masih lagi tidak dapat menjalankan operasi menggunakan kaedah yang betul dan mengikut ketetapan Shariah. Senario yang paling mudah difahami adalah berkaitan proses pengangkutan dan pergudangan. Pengasingan produk halal dan produk tidak halal perlulah dipraktikkan secara meluas oleh pekerja bagi mengelakkan produk halal dicemari oleh produk yang tidak halal (Riaz & Chaudry, 2004).

Peralatan yang digunakan oleh pekerja untuk menguruskan produk halal tidak boleh dikongsi atau digunakan terhadap barangan yang tidak halal kerana perkara tersebut dapat mencemari produk halal (Jaafar, Endut, Faisol, & Omar, 2011). Walaubagaimanapun, amalan ini masih lagi tidak ditekankan oleh majoriti pihak industri kerana produk halal dan tidak halal masih lagi dibawa oleh pengangkutan yang sama atau disimpan digudang yang sama. Aktiviti pengangkutan memainkan peranan yang penting dan selalunya pada peringkat ini, produk halal dan tidak halal boleh bercampur dan dicemari. Selain itu, pada peringkat penghantaran dan pengagihan barangan, rangkaian bekalan halal mudah terjejas (Jaafar, Endut, Faisol, & Omar, 2011).

Kerangka Konseptual Kajian

Penyelidik menggunakan gabungan Model Halal logistik Mohd Syazwan (2013) dan model faktor kesediaan pembekal terhadap Halal Logistik Hazwani, Nitty, Ismail dan Azwani (2014) bagi meneroka persepsi pekerja terhadap halal logistik. Dalam Konteks kajian ini, persepsi pekerja terhadap halal logistik adalah dilihat berdasarkan teori Robert dan Paul (1991) dimana persepsi adalah proses internal yang memungkinkan kita memilih, mengorganisasikan, dan menafsirkan rangsangan dari lingkungan kita, dan proses tersebut mempengaruhi perilaku kita. Sehubungan dengan itu, pemahaman, penggunaan dan kesan implementasi adalah merupakan faktor persepsi pekerja terhadap halal logistik.

Metadologi Kajian

Kajian ini telah menggunakan kaedah tinjauan desktiptif dimana kaedah tinjauan deskriptif merupakan satu kaedah penyelidikan yang dapat memperjelaskan keadaaan semasa (Best dan kahn, 1998). Didalam kajian ini, kaedah yang telah digunakan adalah kaedah kuantitatif untuk pengumpulan maklumat. Data kajian ini diperoleh melalui borang soal selidik yang diedarkan kepada pekerja-pekerja di bahagian gudang syarikat Kontena Nasional Berhad, Petaling Jaya tanpa membataskan jawatan dan jantina mereka. Sampel kajian dipilih berdasarkan kepada teori (Krejcie & Morgan, 1970) iaitu seramai 28 orang. Borang soal selidik yang diterima adalah sebanyak 28 (100%) dan digunakan dalam analisis data peringkat akhir.

Instrumen yang telah digunakan dalam kajian ini adalah menggunakan borang soal selidik yang dibentuk berdasarkan kepada objektif kajian dijalankan. Soal selidik yang disediakan terdiri daripada empat bahagian iaitu bahagian A, bahagian B, bahagian C dan bahagian D. Bahagian A terdiri daripada mengenai latar belakang responden yang terdiri dari jantina, umur, tempoh berkhidmat, dan kelulusan akademik. Bahagian B mengenai pemahaman terhadap logistik halal, manakala bahagian C mengenai tahap penggunaan logistik halal di bahagian gudang dan bahagian D mengenai kesan implementasi logistik halal di bahagian gudang yang menggunakan .

Analisis Data

Keputusan Analisis Min Terhadap Kefahaman Mengenai Logistik halal

No	Item	Min
1.	Logistik halal dikuatkuasakan oleh kerajaan melalui undang-undang	4.42
2.	Pengeluar produk perlu bertanggungajwab terhadap logistik halal	4.57
3.	Kontena Nasional merupakan syarikat yang menitikberatkan tentang logistik halal	4.50
4.	Lembaga halal merupakan badan yang bertanggungjawab dalam logistik halal	4.46
5.	halal bererti makanan yang berkualiti	4.57
6.	halal bererti makanan itu selamat dimakan	4.75
7.	halal menjamin kesihatan pengguna	4.57
8.	halal bererti haiwan yang disembelih mengikut hukum syarak	4.50
9.	Pekerja mendapat penerangan tentang logistik halal dengan mengikut kursus luar	4.50
10.	Pekerja telah diberikan latihan oleh syarikat mengenai logistik halal	4.50
11.	Pekerja telah mendapat latihan melalui pengawasan lembaga halal	4.50
12	Pekerja mengetahui mengenai logistik halal melalui preskripsi tugas masing-masing	4.42
	Min keseluruhan	**4.52**

Jadual 1 Keputusan Analisis Min Terhadap Peratusan Kefahaman Terhadap Logistik Halal

Berdasarkan jadual 1, hasil dapatan bagi min keseluruhan adalah sebanyak 4.52. Secara keseluruhannya responden sangat bersetuju terhadap kefahaman tentang logistik halal sekaligus menjawab persoalan kajian. Daripada keputusan ini jelas menunjukkan bahawa responden dibahagian rumah gudang syarikat Kontena Nasional mengetahui serta faham mengenai logistik halal.

Pengunaan Logistik halal dibahagian pergudangan

Keputusan Analisis Min Terhadap Tahap Penggunaan Logistik halal di Bahagian Rumah Gudang

No	Item	Min
1.	Lokasi penyimpanan sesuatu barangan telah ditetapkan bagi semua jenis produk	4.75
2.	Penyimpanan produk halal memerlukan penjagaan yang lebih berbanding barangan tidak halal	4.42
3.	Kebersihan dan persekitaran merupakan aspek penjagaan penting bagi produk halal	4.42
4.	Terdapat pengasingan produk halal dan tidak halal didalam gudang	4.42
5.	Pengendalian barangan halal lebih merumitkan berbanding barangan tidak halal	2.35
6.	Prosedur penerimaan dan penyimpanan produk halal sentiasa dipatuhi	4.32
7.	Produk halal di dalam gudang di uruskan oleh pekerja yang beragama Islam sahaja	3.78
8.	Tugas untuk menguruskan produk halal adalah mengikut pengkhususan tugasan masing-masing	4.53
	Min keseluruhan	**4.12**

Jadual 2 Keputusan Analisis Min Terhadap Tahap Penggunaan Logistik halal di Bahagian Rumah Gudang

Berdasarkan jadual 2, min keseluruhan bagi persoalan kajian kedua ialah 4.12. Secara keseluruhannya, responden adalah bersetuju terhadap tahap penggunaan logistik halal dibahagian rumah gudang syarikat Kontena Nasional Berhad Petaling Jaya.

Kesan Implementasi Logistik Halal dibahagian Pergudangan

Keputusan Analisis Kesan Implementasi Logistik halal Dibahagian Rumah Gudang

No	Item	Min
1.	Produk halal perlu diletakkan dikawasan khas yang telah ditetapkan didalam gudang	4.85
2.	Masa yang diambil untuk memunggah dan menyimpan produk halal ke dalam gudang mengambil masa yang lebih lama daripada kebiasaan	1.17
3.	Latihan mengurus produk halal membantu saya untuk melaksanakan tugas saya	4.35
4.	Masa bekerja melebihi waktu kebiasaan bekerja	1.42
5.	Prosedur memunggah dan menyimpan produk halal dari kontena dipatuhi	4.32
6.	Semua kontena/palet yang dikhususkan untuk membawa produk halal perlu disamak terlebih dahulu	4.25
7.	Pengangkutan khas digunakan untuk membawa produk halal ke gudang	4.35
8.	Kos pengurusan logistik di syarikat Kontena Nasional meningkat	2.17
	Min keseluruhan	**3.36**

Jadual 1 Keputusan Analisis Kesan Implementasi Logistik halal Dibahagian Rumah Gudang

Merujuk kepada jadual 12, min keseluruhan bagi persoalan kajian ketiga adalah 3.36. Ini jelas menunjukkan bahawa responden kurang bersetuju terhadap kesan daripada implementasi logistik halal dibahagian rumah gudang.

Perbincangan

Secara keseluruhannya syarikat Kontena Nasional Berhad di Petaling Jaya memberi persepsi yang positif terhadap penggunaan logistik halal dibahagian pergudangan. Setelah analisis dilakukan, min keseluruhan mengenai kefahaman terhadap logistik halal ialah sebanyak 4.52 yang menunjukkan responden mempunyai kefahaman yang tinggi mengenai logistik halal. Manakala bagi min keseluruhan bagi penggunaan logistik halal dibahagian pergudangan mendapat min keseluruhan sebanyak 4.12 dan bermakna logistik halal digunakan secara meluas dibahagian pergudang. Diikuti pula dengan nilai min keseluruhan bagi kesan implikasi penggunaan logistik halal adalah sebanyak sebanyak 3.36 dimana implementasi logistik halal tidak mendatangkan perubahan atau kesan yang ketara terhadap syarikat.

Kesimpulan

Kesimpulan bagi objektif utama kajian, majoriti responden dibahagian rumah gudang syarikat Kontena Nasional Berhad di Petaling Jaya mempunyai kefahaman yang mencukupi mengenai logistik halal. Selain itu juga, pemahaman terhadap logistik halal memainkan peranan penting sebelum menguruskan produk halal. Dengan pemahaman yang tinggi, produk halal mudah untuk diuruskan. Walaupun begitu, kesemua pengurusan mengenai produk halal haruslah berlandaskan shariah sepertimana yang dituntut mengikut syariat Islam. Bagi syarikat Kontena Nasional Berhad Petaling Jaya, majoriti pekerja di bahagian rumah gudang adalah beragama Islam iaitu sebanyak 96.4 peratus adalah responden yang beragama Islam. Dengan peratusan responden yang beragama Islam yang tinggi, ia memudahkan lagi dalam perlaksanaan logistik halal kerana responden yang beragama Islam lebih berpengetahuan mengenai aspek halal yang kritikal. Dapatan ini disokong oleh (Mariam, 2012) yang mengatakan logistik halal di Kontena Nasional berpandukan Malaysian Standard (SIRIM, 2010) yang diasaskan dari prinsip halalan Toyyiban yang bukan saja memberi tumpuan kepada ciri halal tetapi juga bersih dan selamat bagi seluruh keperluan dalam rantaian proses pengangkutan, pergudangan, sehinggalah kepada peruncitan. Selain komponen Syariah, standard MS2400:2010 turut menggabungkan ciri standard dan prinsip pengurusan berkualiti yang diiktiraf antarabangsa seperti Analisis Bahaya Titik Kawalan Kritikal HACCP dan Pertubuhan Antarabangsa bagi Standard ISO 2200.

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KEEFISIENAN PENANAMAN JAGUNG (*ZEA MAYS*) MELALUI TEKNIK FERTIGASI

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Kata Kunci: Pertumbuhan jagung, teknik fertigasi, penanaman konversional

Abstrak. Kajian ini dijalankan bertujuan untuk melihat perbandingan kadar pertumbuhan jagung (*Zea Mays*) yang ditanam dengan menggunakan media penanaman konvensional dan media polibeg melalui teknik fertigasi. Anak benih jagung yang berumur 7 hari dipindah kedalam polibeg yang bersaiz 40 cm x 40 cm dengan menggunakan media campuran 3:2:1 (tanah atas : bahan organik: pasir) manakala sebahagiannya dipindah ke atas batas tanah bersaiz 0.5m x 6m dengan jarak tanaman 30 cm antara pokok. Kajian ini menggunakan kaedah pemerhatian bagi melihat proses tumbesaran pokok jagung. Pemerhatian menunjukkan bahawa pada hari ke 60, pertumbuhan jagung di atas tanah menunjukkan kadar pertumbuhan yang lebih cepat dengan mengeluarkan buah berbanding pertumbuhan jagung yang ditanam dalam polibeg yang baru berbunga. Ini menunjukkan bahawa kaedah fertigasi sangat relevan digunakan bagi tanaman jagung kerana ia dapat mempercepatkan proses pengeluaran buah di samping dapat memenuhi kehendak dan keperluan pasaran. Malah, kaedah fertigasi ini juga dapat mengelakkan daripada serangan penyakit dan perosak pada tanaman.

Pengenalan

Jagung manis (Zea mays) adalah diantara tanaman jangka pendek dari keluarga Poaceae yang popular di Malaysia. Jagung manis memiliki rasa yang manis dan mengandungi karbohidrat, protein, vitamin, gula yang tinggi serta kandungan lemak yang rendah (Iskandar, 2008).
Pokok jagung adalah tanaman yang sangat responsif dengan keadaan tanah, cuaca, pembajaan, serangan perosak dan penyakit. Jagung adalah tanaman yang mempunyai batang menegak mempunyai ruas-ruas dan mampu mencapai ketinggian sehingga 1-3 meter. Terdapat lebih dari 50,000 kultivar jagung diseluruh dunia dan sebahagian besar daripadanya telah pun dikomersialkan untuk pengeluaran bijirin. Jagung adalah tanaman semusim yang mempunyai jangka hayat antara 80-150 hari bergantung kepada kultivar.

Penanaman secara fertigasi ialah kaedah penanaman di mana baja lengkap dalam bentuk larutan nutrient diagihkan ke pangkal tanaman. Fertigasi sebenarnya berasal daripada cantuman dua perkataan “*fertilization*” dan “*irrigation*”. Sistem fertigasi ialah satu daripada cabang hidroponik yang antara lain terdiri dari sistem titis mikro. Proses pembajaan dan pengairan terhadap tanaman berjalan serentak (Mahamud Shahid et.Al 2009). Pokok yang ditanam di dalam bekas atau polibeg yang mengandungi media bukan tanah, tidak mengandungi nutrient yang seimbang. Oleh itu, prestasi tanaman sangat dipengaruhi oleh kadar nutrient yang seimbang, kepekatan dan mutu baja yang dibekalkan.

Adam et al. (1984) menyatakan bahawa media memainkan peranan penting untuk penyerapan air dan nutrien oleh akar. Media tanaman 3:2:1 merupakan media tanaman yang seimbang kerana dapat meningkatkan pengudaraan, penyerapan dan penyusupan air serta nutrient. Ini disokong oleh Ni Luh Putu Indriyani et. al (2011) yang menyatakan bahawa media tanaman untuk tumbuhan berbuah merangkumi tanah, bahan organik dan pasir.

Metodologi

Kaedah perpustakaan dan kaedah eksperimen diaplikasikan dalam kajian ini. Kaedah perpustakaan adalah dengan mengumpul maklumat-maklumat melalui jurnal, artikel, buku dan internet. Manakala, kaedah eksperimen dilakukan dengan penanaman jagung di kawasan nurseri Jabatan Agroteknologi & Bio-industri di Politeknik Nilai melalui pemerhatian dan kawalan penyelidik.

Ekperimen ini dilakukan di kawasan persekitaran terbuka dengan menggunakan teknik fertigasi terbuka di mana sampel bagi tanaman yang digunakan dalam kajian ini adalah Jagung (*Zea Mays*) jenis Masmadu Mardi F1. Cara penanaman yang digunakan dalam teknik fertigasi ini adalah kaedah konvensional dengan menggunakan batas tanah dan polibeg. Media tanah yang digunakan adalah nisbah 3:2:1 (3 bahagian tanah atas (*top soil*), 2 bahagian tanah organik, dan 1 bahagian tanah pasir). Kaedah eksperimen diukur berdasarkan kadar pertumbuhan ketinggian pokok jagung yang direkod secara mingguan (7 hari) bagi melihat perbezaan kadar pertumbuhan antara kaedah konvensional dan polibeg.

Rajah 3: Penyediaan batas

Rajah 4: Penanaman benih jagung

Rajah 5: Perbandingan pertumbuhan pokok jagung kaedah konvensional dan kaedah penggunaan polibeg

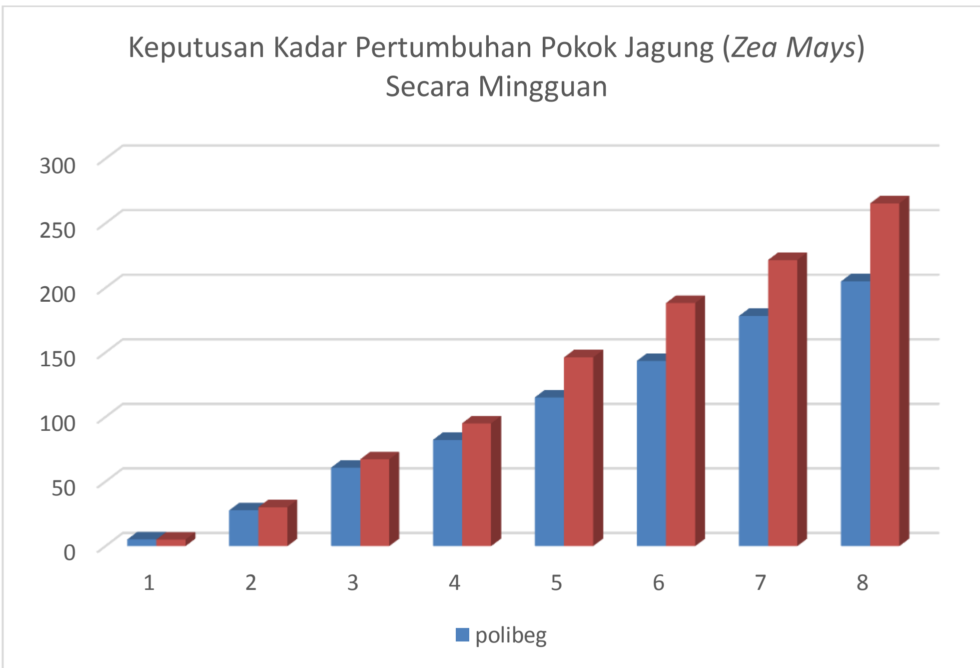
Keputusan dan perbincangan

Jadual 1 di bawah menunjukkan jenis-jenis kaedah yang digunakan dalam kaedah eksperimen ini diantara kaedah konvensional (batas tanah) dan kaedah penggunaan polibeg**.** Kadar pertumbuhan pokok jagung direkod bermula pada hari yang ke-7 hingga hari yang ke-56 iaitu selama 8 minggu.

Kaedah		**Kaedah penggunaan polibeg**	**Kaedah konvensional (batas tanah)**
Nisbah Campuran Tanah		3:2:1	3:2:1
Saiz		50cm x 3m (lebar x panjang)	1 baris = 10 pokok
Jarak tanaman		30cm	30cm
Kadar pertumbuhan (mingguan)	1	5.2	5.1
	2	27.7	30.1
	3	60.8	67.2

	4	82.3	95.1
	5	115.2	146.2
	6	143.5	188.3
	7	178.2	221.6
	8	205	265.4

Rajah 1: Perbandingan kadar pertumbuhan jagung melalui kaedah konvensional dan kaedah penggunaan polibeg



Rajah 2: Perbandingan kadar pertumbuhan jagung melalui kaedah konvensional dan kaedah penggunaan polibeg

Berdasarkan Rajah 2 menunjukkan keputusan perbandingan antara kaedah konvensional dan kaedah penggunaan polibeg adalah kadar pertumbuhan pokok jagung secara konvensional adalah lebih tinggi berbanding menggunakan polibeg. Ini disebabkan faktor pertumbuhan akar pokok jagung secara serabut. Ini kerana melalui kaedah konvensional akar pokok jagung lebih bebas untuk menyerap nutrient berbanding kaedah menggunakan polibeg yang menghadkan pertumbuhan akar. Pertumbuhan akar pokok jagung mempengaruhi ketinggian pokok jagung pada masa yang sama meningkatkan penghasilan buah.

Kesimpulan

Hasil kajian yang diperolehi menunjukkan keefisienan penanaman jagung *(zea mays)* melalui teknik fertigasi yang menggunakan kaedah konvensional adalah lebih sesuai berbanding kaedah penggunaan polibeg. Ini disebabkan kadar pertumbuhan pokok jagung melalui kaedah konvensional lebih cepat berbanding kaedah penggunaan polibeg mengikut ketinggian pokok jagung.

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Modul Kemahiran Insaniah Ke Arah Mentransformasikan Pelajar Politeknik : Satu Cabaran

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Abstrak: Kertas ini membincangkan kepentingan Modul Kemahiran Insaniah (*Soft skills*) di Politeknik Malaysia dalam melahirkan graduan yang bukan sahaja berjaya di bidang akademik tetapi juga memiliki kompetensi interpersonal untuk meningkat kebolehpasaran graduan di dalam dunia pekerjaan. Ini adalah selaras dengan Visi penubuhan Politeknik iaitu "Penjana utama modal insan inovatif melalui pendidikan dan latihan transformasional bagi memenuhi keperluan tenaga kerja global menjelang tahun 2015".Walau bagaimanapun, untuk melahirkan graduan yang lengkap dengan kekuatan peribadi bagi pasaran kerja dan menceburi bidang keusahawanan adalah satu cabaran bagi para pendidik di Politeknik. Disebabkan cabaran ini, Kementerian Pengajian Tinggi telah memperkenalkan kurikulum khas yang berteraskan tujuh kemahiran insaniah yang wajib dimiliki.Pelajar-pelajar di Politeknik menghadapi cabaran dalam menyerap kemahiran generik ini dari segi menyerap budaya belajar yang pro-aktif disamping mengaplikasikan segala kemahiran yang dipelajari dalam bentuk praktikal. Oleh itu, kertas ini mencadangkan agar keberkesanan Modul Kemahiran kemahiran Insaniah di Politeknik diukur dari pelbagai aspek untuk tujuan penambahbaikan agar ianya dapat membantu Politeknik melahirkan graduan yang berkualiti yang berupaya menjadi ikon dalam masyarakat.

PENGENALAN

Universiti atau IPT pada masa kini bukan hanya pusat pengajian yang melahirkan golongan cerdik pandai dan intelektual dalam masyarakat tetapi menzahirkan harapan ibu bapa, memenuhi visi negara ke arah keperluan tenaga mahir dan berkebolehan sekaligus keperluan industri dan pasaran kerja. Oleh sebab itu, peranan dan kepentingan Institusi Pengajian Tinggi sama ada di peringkat pra Ijazah, kelayakan teknikal mahupun bidang akademik (Diploma dan Sarjana Muda) semuanya bertujuan melahirkan golongan pelajar IPT yang dapat memenuhi cabaran masa depan, menjadi generasi berilmu dan berketerampilan. Pelajar di IPT adalah harapan dan tonggak kejayaan sesebuah negara, kerana dengan ilmu, keterampilan dan keyakinan diri yang tinggi, daya usaha yang optimum dapat dijayakan bagi menyumbang ke arah pembangunan negara. Usaha memartabatkan pengajian tinggi negara selari dengan langkah memantapkan bidang kursus dan kurikulum yang ditawarkan.

Dalam era globalisasi masa kini, tuntutan perubahan tidak dapat dielakkan. Institusi Pengajian Tinggi sebagai wadah pemangkin kemajuan bangsa dan teras pembangunan negara perlu beradaptasi dengan perubahan, malah menjana perubahan ke arah nilai-nilai positif agar generasi pelajar yang dididik mewujudkan *outcomes* bagi memenuhi aspirasi negara dan masyarakat sekaligus mencapai matlamat pembelajaran dan keperluan pihak industri.

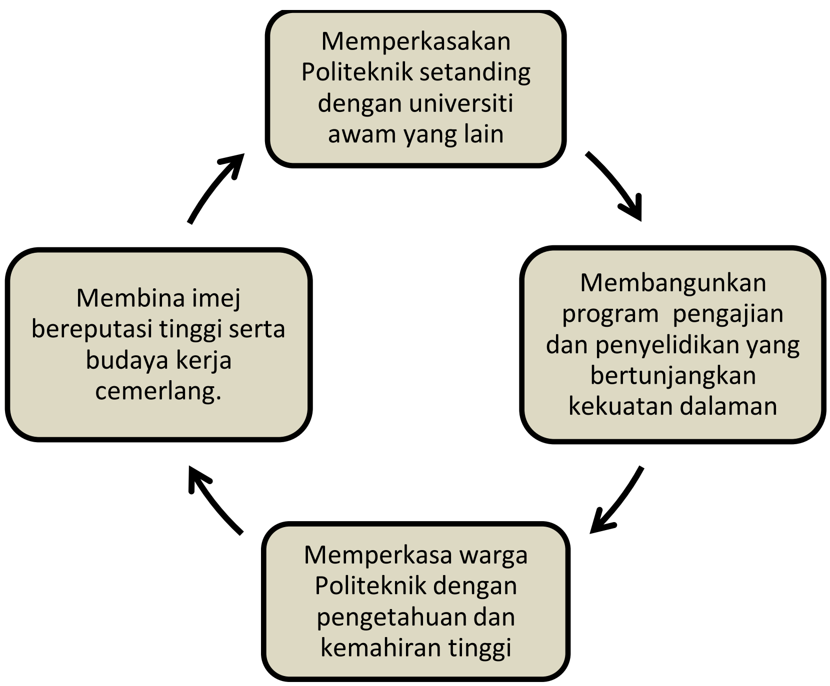
Usaha melahirkan generasi pelajar yang berkualiti menjadi teras falsafah pengajian tinggi. Kualiti yang dimaksudkan merangkumi semua bidang, bukan semata-mata di bidang akademik semata-mata tetapi juga kompetensi interpersonal yang melibatkan kemahiran insaniah. Kecemerlangan seseorang pelajar untuk tujuan pasaran kerja bukan hanya bersandarkan kepada ilmu teori semata-mata tetapi bagaimana dipraktikkan serta kekuatan peribadi yang boleh menjadikan seseorang pelajar unik dan boleh diketengahkan kepada masyarakat terutama dalam memenuhi pasaran kerja dan keperluan masyarakat industri.

Tuntutan pasaran kerja masa kini memerlukan pelajar yang memiliki kebolehan dalam pelbagai segi melibatkan kemahiran interpersonel dan intrapersonel. Elemen kemahiran insaniah merupakan kriteria utama yang diberikan perhatian. Justeru itu, Politeknik sebagai institusi pengajian tinggi dan latihan teknikal telah mengambil inisiatif menggunakan Modul Kemahiran Insaniah ke arah mentransformasikan pelajar Politeknik selaras dengan visi penubuhan Politeknik iaitu: *"Penjana utama modal insan inovatif melalui pendidikan dan latihan transformasional bagi memenuhi keperluan tenaga kerja global menjelang tahun 2015."* Kini Jabatan Pengajian Politeknik telah mentadbir 28 buah Politeknik yang menjalankan program pengajian dan latihan dalam bidang kejuruteraan, teknologi, perdagangan dan perkhidmatan. Lulusan dan lepasan Politeknik diakui menjadi tenaga penggerak ke arah pertumbuhan ekonomi dan industri domestik, sehubungan dengan itu usaha melengkapkan diri pelajar dengan keupayaan mentrasformasi diri sebagai ikon masyarakat amatlah penting dan menjadi teras transformasi pendidikan di Politeknik. Kertas kerja ini akan mengenalpasti keberkesanan langkah transformasi pelajar melalui penggunaan Modul Kemahiran Insaniah dan cabaran-cabaran yang dihadapi.

PELAJAR IPT DAN ERA GLOBALISASI

Menurut Abd Rahim Ramli *et.al.*(2007), tanggungjawab serta peranan institusi pengajian tinggi (IPT) sememangnya besar, terutamanya untuk merealisasikan matlamat dan visi sesebuah negara. Bagi Haslinda *et al.* (2005), tenaga belia keluaran IPT amat bernilai dan perlu dimanfaatkan demi pembangunan negara, kerana mereka merupakan golongan yang terpelajar. Slogan *pemuda harapan bangsa, pemudi tiang negara* memang bertepatan dan amat relevan, kerana belia yang berkualiti merupakan pencetus inovasi, membawa perubahan dan memperkenalkan idea-idea baru ke tengah masyarakat dan dunia kerjaya. Tuntutan perubahan minda kepada lepasan universiti – institusi pengajian tinggi begitu ketara tidak hanya berlandaskan kecemerlangan intelektual tetapi juga kemahiran insaniah.

Bagi memenuhi permintaan sumber tenaga mahir dan separa mahir yang meningkat, pertumbuhan dan perkembangan institusi latihan kemahiran dan teknikal diberikan tumpuan dalam agenda pendidikan negara.Peluang mendapatkan kemahiran dan pembelajaran sepanjang hayat menjadi pemacu penting misi ini melalui institusi latihan teknikal seperti Politeknik, Kolej Universiti dan Kolej Komuniti. Peranan Politeknik dalam menghadapi cabaran globalisasi dan tuntutan industri sebenarnya telah diberikan perhatian sejak tahun 2009 setelah menimbang memorandum dari Menteri Pengajian Tinggi (No. 871/2670/2009) berkaitan hala tuju transformasi Politeknik yang melibatkan empat teras.



Rajah 1 Empat Teras Transformasi Politeknik

Cabaran utama pelajar-pelajar di IPT untuk menyumbang kepada pembangunan negara ialah melengkapkan diri dengan kekuatan peribadi bagi pasaran kerja dan menceburi bidang keusahawanan sebagai pemangkin perubahan dan keterampilan profesional.

ISU DAN PERMASALAHAN PELAJAR DI IPT

Sebagai tonggak negara, pelajar IPT perlu didedahkan dengan pelbagai kemahiran yang dapat menjadikan mereka unik, berdaya saing dan berupaya menonjolkan keistimewaan diri mereka dalam dunia kerjaya. Sehubungan itu, David Clarke (2007) berpendapat:

> Academic achievement cannot be solely relied upon to gauge the potential success of a candidate. Where possible…practical testing…[*is] a very effective filter.*

Menurut Sharifah Hapsah (2005), jaminan kualiti di IPT adalah untuk memastikan graduan yang dilahirkan mempunyai kemahiran teknikal dan praktikal, profesional, kemahiran pengurusan pemikiran teknikal, kemahiran komunikasi dan kemahiran pengurusan maklumat serta pembelajaran sepanjang hayat. Jabatan Pendidikan Tinggi (2003) pula meletak standard bagi semua kurikulum dalam pendidikan tinggi di Malaysia harus mempunyai rekabentuk yang menerapkan kemahiran generik yang meliputi: (1) kemahiran berfikir, bertindak, mengadaptasi, menyelesai masalah dan membuatkeputusan, (2) kemahiran interpersonal dan berkomunikasi, (3) kemahiran ICT, multimedia dan kemahiran pengurusan maklumat, (4) kemahiran kepimpinan dan (5) kemahiran keusahawanan.

Sesuai dengan tuntutan berkenaan, Najib Tun Razak (2004) ada menyentuh tentang proses transformasi yang melibatkan tanggungjawab melahirkan modal insan berkualti, iaitu:

> *"… Saya percaya untuk memastikan aspirasi negara dalam menerapkan budaya pencapaian yang baru melalui pemerkasaan institusi pengajian tinggi tidak hanya berfokus kepada peningkatan intelektual tetapi juga pembangunan holistik modal insan mapan yang memiliki kemahiran yang diperlukan oleh masyarakat".*
>
> (Forum Dialog Majlis Tindakan Ekonomi Negara, 2004)

Langkah transformasi ini melibatkan transformasi budaya ilmu dan komunikasi edukatif yang berlaku dalam konteks pengajaran dan pembelajaran selaras dengan falsafah dan matlamat pengajian tinggi yang dikeluarkan oleh Kementerian Pengajian Tinggi (2010) iaitu:

> *"To develop and put in place a higher education environment that encourages the growth of premier knowledge centers and individuals who are competent, innovative with high moral values to meet national and international needs".*

Kompetensi yang dimaksudkan dalam pernyataan di atas melibatkan kemahiran dan daya saing pelajar institusi pengajian tinggi itu sendiri. Sehubungan dengan itu, menurut Nur Izzati Lojinin (2009) melalui kajiannya, pengajaran dan pembelajaran di IPT perlu berubah selaras dengan perkembangan global bagi membentuk kemahiran pelajar secara holistik melalui pembelajaran berasaskan penyelesaian masalah (*problem based learning (PBL)*) iaitu:

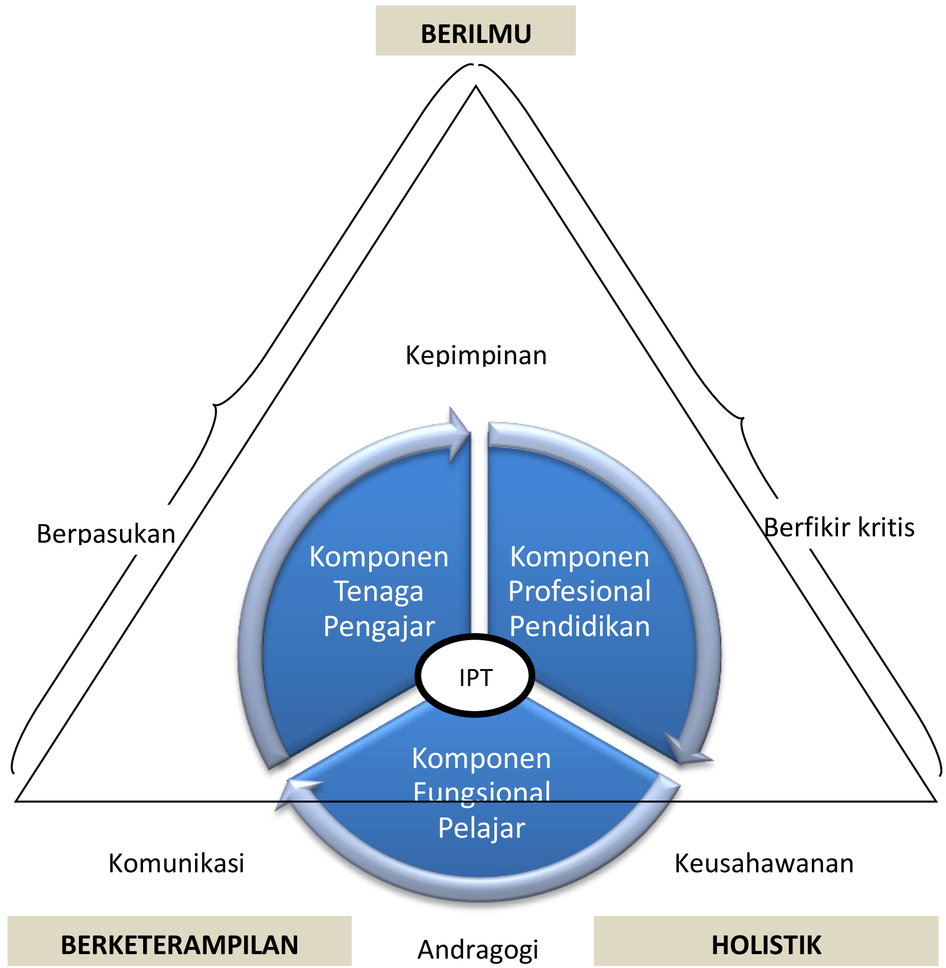
"Strategi pengajaran menarik di mana pelajar diberikan 'pencetus' atau simulasi masalah yang kurang jelas dan kabur sebelum mempelajari isi kandungan sesuatu pelajaran. Kajian-kajian lepas menunjukkan pembelajaran secara PBL dapat melatih pelajar untuk berfikir secara kritis, mudah menyerap perubahan, berdikari, menunjukkan kemahiran berkomunikasi serta mengamalkan pembe-lajaran berterusan".

Penyertaan pelajar dalam kegiatan *out door* seperti kembara, kegiatan luar dan latihan jasmani, program kebudayaan dan warisan serta penyertaan dalam pelbagai bentuk pertandingan serta seminar secara tidak langsung membentuk keperibadian pelajar.Walau bagaimanapun keadaan ini tidak sebagaimana yang diharapkan, kebanyakan pelajar tidak mengambil peluang ini untuk membina keperibadian dan keyakinan diri mereka.

PEMBELAJARAN MODUL KEMAHIRAN INSANIAH

Antara fokus dan fungsi IPT sebagaimana yang telah digariskan oleh Kementerian Pengajian Tinggi (KPT) ialah: (1) menyediakan individu yang dapat berfungsi dalam tenaga kerja yang pelbagai, (2) meletakkan pengajaran dan pembelajaran sebagai , misi utama dengan menyediakan individu untuk kehidupan memuaskan melalui pendidikan sepanjang hayat serta (3) menyediakan peluang yang baik dan pelbagai kepada pelajar bagi memenuhi keperluan individu, masyarakat dan negara.

Antara kemahiran generik yang dikembangkan dalam konteks pembelajaran di IPT dan membentuk transformasi kendiri pelajar dalam menceburi bidang pekerjaan dan sosial kemasyarakatan sebagaimana yang dikemukakan oleh UTM iaitu : kemahiran komunikasi, kemahiran berpasukan, penyelesaian masalah, penyesuaian kendiri, pembelajaran sepanjang hayat, esteem kendiri serta etika dan integriti. Ketujuh-tujuh kriteria ini merupakan kemahiran insaniah yang perlu dikembangkan dalam diri pelajar di IPT.Termasuk juga dalam konteks ini ialah pelajar-pelajar di Politeknik agar mempunyai persediaan yang lengkap untuk menceburi dunia pekerjaan.Kesemua kemahiran di atas perlu diterapkan dalam kurikulum pembelajaran di IPT samada secara langsung ataupun tidak langsung.Kurikulum dan sillabus perlu diubahsuai agar kemahiran generik dapat diterapkan dalam konteks pembelajaran bagi mencapai kemahiran yang dikehendaki dalam subjek teknikal atau bukan teknikal. Dalam konteks pendidikan tinggi, yang bertujuan mendidik pelajar dalam kategori usia 20 tahun ke atas, tentu sekali pendekatan pedagogi tidak lagi berkesan sebaliknya pendekatan yang menjurus kepada kaedah-kaedah dan elemen pendidikan dewasa lebih sesuai diterapkan melalui pendekatan elemen andragogi dalam pengajaran dan pembelajaran.



Rajah 2 Model Konseptual Kemahiran Insaniah

Sumber : Kementerian Pengajian Tinggi (KPT), Nur Izzati Lojinin (2009)

Keperluan pembelajaran sepanjang hayat ini ada dikemukakan dalam Model Konseptual Kemahiran Insaniah oleh Kementerian Pengajian Tinggi (Nur Izzati Lojinin, 2009) sebagai asas panduan dalam menggerakkan kegiatan pembelajaran dan mengelolakan aktiviti bagi menyediakan pengalaman pembelajaran yang holistik dan memenuhi visi serta matlamat untuk melahirkan modal insan unggul yang berpengetahuan, berketerampilan, berkemahiran dan berdaya saing dengan pelbagai bidang keupayaan dan kebolehan.

Merujuk kepada Model Konseptual Kemahiran Insaniah, kurikulum pengajian tinggi digubal secara holistik bagi menggambarkan keperluan dan kehendak masyarakat kepada lepasan universiti yang dapat menabur bakti secara bermakna, berdaya saing dan mempunyai kemahiran tertentu yang unik dan memberi kelebihan. Penerapan kemahiran generik dalam pengajaran dan pengembangan kurikulum di IPT boleh dibandingkan antara dua pendekatan iaitu *indoctrinational* dan *democratic*. Pendekatan demokratik merujuk kepada pernyataan berikut:

> *"…raise students consciousness about values, attitudes and worker responsibilities…pedagogical strategies such as role playing simulation, problem solving, and group discussion are democratic in nature because they encourage students to explore their attitudes and do not advocate one particular out comes."*

Manakala pendekatan pengajaran *indoctrinational* pula merujuk kepada:

> *"… a process by which students are given information in such a manner that they are discouraged or prevented from questioning its validity [and] includes pedagogical strategies that minimize student input."*

Bagi memperkembangkan kemahiran insaniah atau kemahiran generik, pendekatan pengajaran perlu menggunakan mode aktif dan kooperatif supaya pengajaran menjadi kondusif dan dapat diserap oleh para pelajar. Pensyarah perlu mempunyai kemahiran komunikasi yang tinggi serta jangkaan yang positif terhadap keupayaan pelajar dalam menerima dan membentuk kemahiran. Chickering dan Gamson (2010), menekankan jangkaan positif pensyarah amat penting dalam membentuk sikap dan membentuk kemahiran dalam kalangan pelajar di IPT. Bagi menerapkan kemahiran insaniah secara berkesan dalam pengajaran, Woods *et al.* (1999), mencadangkan 8 aktiviti berasaskan kepada kajiannya tentang pengajaran kemahiran insaniah kepada pelajar pengajian tinggi, iaitu :

1. Kenalpasti kemahiran yang ingin dikembangkan dalam diri pelajar, termasuk juga silabus kursus agar dapat diberikan penekanan yang dikehendaki.

2. Lakukan penyelidikan bukan hanya bersandarkan pemikiran bagi menentukan kemahiran yang disasarkan kepada pelajar.

3. Berikan dorongan terhadap kesepaduan antara tingkahlaku implisit dan aplikasi kemahiran agar dapat dipraktikkan.

4. Keperluan terhadap latihan berterusan dan amali bagi aplikasi kemahiran melalui aktiviti berstruktur yang memerlukan maklumbalas konstruktif untuk menggerakkan usaha pelajar mencapai objektif

5. Meningkatkan langkah pemantauan berkaitan proses meta kognitif dan cara memudahkan penerimaan pelajar.

6. Meningkatkan proses refleksi bagi mengenalpasti penerimaan, pemahaman dan perubahan tingkahlaku pelajar

7. Berikan nilai kepada proses bukan hanya melihat kepada produk (*out comes*) semata-mata bagi mengenalpasti kelemahan dan keperluan membuat penambahbaikan.

8. Gunakan penilaian yang piawai dan borang maklum balas.

Sistem penyampaian pensyarah merupakan bahagian yang paling penting dalam pengajaran kemahiran insaniah, disamping menyediakan pengalaman yang mencabar dan menonjolkan kemahiran boleh guna yang dapat dipraktikkan ketika berhadapan dengan masyarakat.

1.1 KEPENTINGAN MODUL KEMAHIRAN INSANIAH TERHADAP PELAJAR-PELAJAR DI POLITEKNIK

Kemahiran insaniah atau disebut juga kemahiran generik (*soft skill*) merupakan kemahiran penting yang perlu ada pada lepasan Politeknik sebagai asas lonjakan personaliti dan kriteria utama dalam menonjolkan kelebihan dan keistimewaan seseorang individu, kerana kemahiran ini dapat membentuk keyakinan diri dan memberi kelebihan untuk berdaya saing bagi pasaran kerja.Pembangunan bakat merupakan kemahiran softskill yang perlu diberikan perhatian dalam melahirkan generasi pelajar yang berkualiti ditunjang dengan kemahiran khusus.

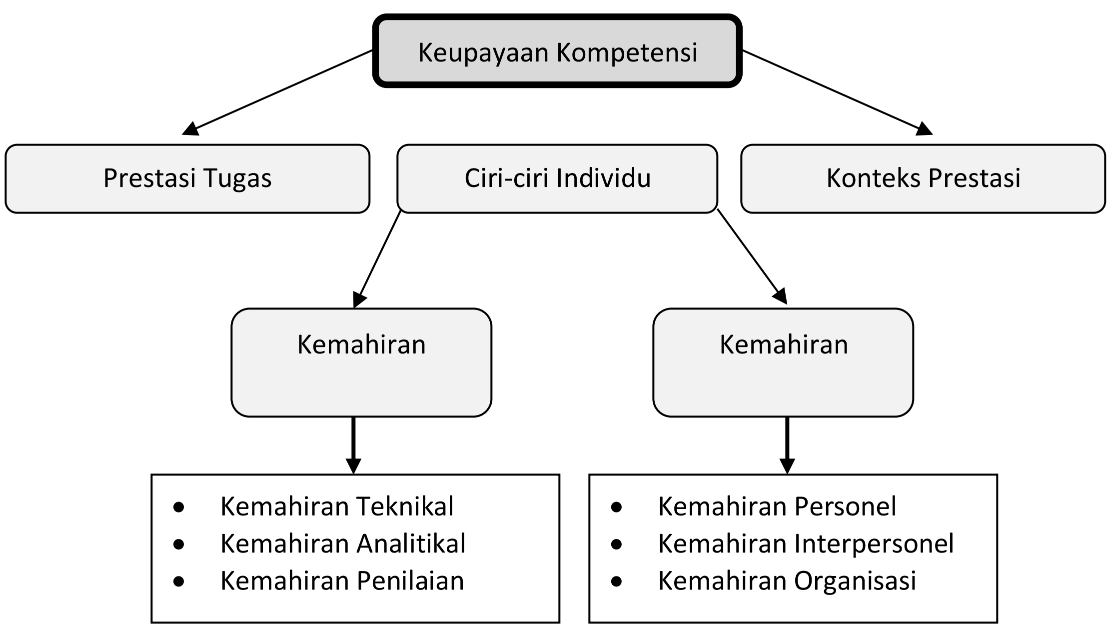
Rajah 3 Kemahiran Insaniah di IPT

Sumber: Modul Pembangunan KI di IPT

Melalui cabaran negara yang memerlukan penghasilan sumber manusia yang kreatif dan inovatif ini, Kementerian Pengajian Tinggi (KPT) telah memperkenalkan kurikulum kursus yang menerapkan unsur kemahiran berfikir melalui pendekatan pembelajaran berasaskan masalah (Problem based-learning). Berteraskan tujuh kemahiran insaniah yang wajib dimiliki, KPT menggariskan beberapa pendekatan penerapan kemahiran insaniah sama ada melalui pendekatan gabungjalin antara disiplin ilmu ataupun mewujudkan secara khusus kursus Kemahiran Insaniah itu sendiri. Secara lebih meluas, kemahiran insaniah juga dibangunkan melalui penyediaan persekitaran yang kondusif, perancangan dan pelaksanaan program pembangunan pelajar. (Kementerian Pengajian Tinggi, 2006). Menurut Ahmad Esa et.al., (2005) pelaksanaan Kemahiran Insaniah ini boleh dilaksanakan dengan baik di Politeknik kerana hasil tinjauan yang dibuat, kebanyakan pensyarah di Politeknik memberikan respons yang cukup positif terhadap penerapan Kemahiran Insaniah dalam membentuk dan membangunkan pelajar menjadi insan yang berkualiti.

1.2 CABARAN PELAKSANAAN MODUL KEMAHIRAN INSANIAH

Kompetensi kendiri merupakan *out comes* penting bagi Modul kemahiran insaniah yang diterapkan iaitu kemahiran asas, kemahiran generik,kemahiran utama, kemahiran boleh pindah dan kemahiran personal melibatkanpengetahuan serta sikap yang menjadi asas kepada prestasiserta merentasi semua bidang (Rylatt dan Lohan,1995).Menurut Parry (1998), kompetensi boleh ditingkatkan dan dibentuk melaluiprogram pembangunan dan latihan.Rainsburry *et.al* (2000), telah membentuk model keupayaan kompetensi yang menekankan kepada ciri-ciri individu, sepertimana rajah berikut.



Rajah 4 Model Keupayaan Kompetensi

Sumber : Rainsburry *et. al* (2000)

Menurut kajian Stasz (1990), pelajar jarang menggunakan kemahiran berfikir aras tinggi untuk menjana idea menyebabkan pelajar menghadapi masalah untuk menyelesaikan tugasan kerja kursus. Justeru, pelajar harus mempelajari dan menggunakan kemahiran berfikir kritis dalam penjanaan idea supaya tugasan kerja kursus dapat diselesaikan dengan lebih berkesan. Pemikiran aras tinggi mencabar pelajar untuk menginterpretasi, menganalisis atau memanipulasikan maklumat (Newmann, 1990). Pelajar-pelajar di Politeknik menghadapi cabaran dalam menyerap kemahiran generik terutamanya dari segi menyerap budaya belajar yang pro aktif disamping mengaplikasi segala kemahiran yang dipelajari dalam bentuk yang praktikal dan amali.

CADANGAN MENINGKATKAN KEBERKESANAN MODUL KEMAHIRAN INSANIAH

Keberkesanan pelaksanaan Modul Kemahiran Insaniah di Politeknik dapat ditingkatkan dan membawa perubahan tingkahlaku yang positif kepada pelajar kerana kebanyakan program yang direka bentuk adalah berasaskan atribut yang ditetapkan oleh badan profesional. Salah satu program yang dilihat memberi kesan yang positif dalam membolehkan pelajar memahami dan mengaplikasikan kemahiran yang telah diajar iaitu Program Latihan Industri. Pelajar-pelajar juga perlu membuka minda mengenai operasi dan aktiviti sebenar di tempat kerja selain mengaplikasikan ilmu pengetahuan, kemahiran yang telah diperolehi di Politeknik serta mendapat sesuatu yang baru bagi kemajuan diri.

Menurut Abdul Rahim (2007), mana-mana IPT (termasuk juga Politeknik) perlu memainkan peranan penting menjadi pusat latihan dan penerapan kemahiran generik dalam kalangan pelajar. Keberkesanan Modul Kemahiran Insaniah yang digunakan juga boleh diukur melalui kajian tindakan bagi mengenalpasti mana-mana aspek kelemahan dan keperluan membuah pengubahsuaian dan penambahbaikan. Segala komponen kemahiran insaniah yang diterapkan dan diaplikasikan perlu dipantau dan dilakukan refleksi dari segi kandungan kurikulum dan sillabus. Kesemua komponen kemahiran insaniah perlu dikembangkan secara bersepadu, berintegrasi dan merentas disiplin dengan penekanan aplikasi teori dan keterampilan pelajar. Cara pengajaran dan latihan kemahiran yang diterapkan juga perlu memberi perhatian terhadap keperluan pelajar.

PENUTUP

Ilmu teori dan amali serta kemahiran-kemahiran amaliyah yang berbentuk hubungan interpersonal amat penting dalam melahirkan golongan pelajar IPT yang berani kedepan dan menyumbang ke tengah masyarakat disamping kemahiran intrapersonal yang berupa kekuatan dan keistimewaan keperibadian yang menyerap budaya dan nilai-nilai positif sebagai insan intelektual yang menjadi ikon dalam masyarakat. Untuk menjayakan matlamat mewujudkan generasi pelajar yang serba boleh dan berkualiti, kemahiran insaniah (kemahiran generik) telah di tawarkan sebagai satu kursus di Politeknik melalui penggunaan Modul Kemahiran Insaniah yang dikeluarkan oleh Kementerian Pengajian Tinggi. Modul ini menekankan tentang aspek teori,aplikasi dan pendekatan pengajaran yang menerapkan unsur andragogi bagi mewujudkan penyesuaian kendiri dan iklim kondusif dalam kegiatan pengajaran.

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Peranan Media Dalam Pelaksanaan Komunikasi Dakwah Pensyarah Pendidikan Islam Terhadap Pelajar Di Politeknik Sultan Salahuddin Abdul Aziz Shah

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Kata Kunci: Peranan media, komunikasi dakwah, pensyarah Pendidikan Islam

Abtrak: Kajian ini memberi tumpuan kepada aspek Peranan Media Dalam Pelaksanaan Komunikasi Dakwah Pensyarah Pendidikan Islam bagi proses pengajaran dan pembelajaran terhadap pelajar. Kajian ini menggunakan metod kajian kepustakaan dan kajian lapangan. Responden terdiri daripada 16 orang pensyarah Pendidikan Islam di Politeknik Sultan Salahuddin Abdul Aziz Shah. Pengumpulan data berdasarkan temu bual bersama pensyarah. Di samping itu, turut dijalankan obsevasi ketika pelaksanaan pengajaran dan pembelajaran dalam kalangan pensyarah. Hasil kajian mendapati 16 orang (100%) pensyarah menggunakan audio visual atau media lisan sebagai medium utama dalam pengajaran dan pembelajaran di dalam kelas dan penggunaan e-mel menjadi pilihan 8 orang (50%) untuk komunikasi di luar kelas. Kepelbagaian penggunaan media oleh pensyarah bertujuan bagi meningkatkan kefahaman pelajar terhadap pengajaran dan pembelajaran yang disampaikan. Walau bagaimanapun kajian juga mendapati penggunaan media komunikasi terkini seperti *facebook*, *whatsapp*, *wechat* dan *blackberry messagger* adalah berkurangan, iaitu 3 orang (19%) dan perlu dipertingkatkan bagi memenuhi keperluan dakwah semasa dalam kepantasan memberi maklum balas maklumat yang diperlukan oleh pelajar. Terdapat pelbagai faktor yang mendorong kepada penggunaan media komunikasi dakwah pensyarah. Namun begitu, masih terdapat kelemahan dan kepincangan yang perlu diperbaiki terutama faktor prasarana yang memberi impak besar dalam penyampaian pengajaran dan pembelajaran.

Pendahuluan

Kewajipan berdawkwah menjadi tuntutan ke atas setiap individu muslim. Arus perubahan masyarakat, menggesa para pendakwah menggunakan metode yang mampu dicernakan oleh masyarakat dan secara tidak langsung membawa perubahan. Pensyarah pendidikan Islam yang bertindak sebagai *da'i* erlu melengkapkan diri diri dengan pelbagai kemahiran dan kreatif dalam penyampaian supaya mampu memberi pemahaman dan penjelasan yang menyeluruh tentang Islam agar pelbagai masalah keruntuhan dalam masyarakat dapat diselesaikan. Media merupakan alat atau perantara dalam komunikasi atau dalam perhubungan (1). Media adalah alat atau perantara komunikasi am, merujuk kepada pelbagai saluran penyampaian sama ada elektronik atau bercetak. Media pengajaran adalah alat bantu proses pengajaran dan pembelajaran dan segala sesuatu yang dapat dipergunakan untuk meransang fikiran, perasaan, perhatian atau ketrampilan pelajar.

Komunikasi dakwah boleh disampaikan dalam pelbagai bentuk saluran. Media komunikasi dakwah merupakan elemen penting dalam usaha pensyarah menyampaikan maklumat, idea, mesej kepada pelajar sama ada melalui lisan, tulisan, al-Quran, jemaah atau organisasi, melalui kesenian, perbuatan atau bahasa badan dan audio-visual. Pada peringkat penggunaan media komunikasi dakwah, pensyarah perlu memilih media yang paling bersesuaian dengan pelajar sama ada berbentuk lisan, tulisan, perbuatan atau audio- visual (2). Keperluan pensyarah dalam penggunaan media yang bersesuaian dengan tujuan membolehkan sesuatu mesej disampaikan dengan tepat, difahami dan mendapat maklum balas (3). Di sini, komunikasi antara pensyarah dan pelajar akan berlaku secara langsung dan tidak langsung. Komunikasi secara langsung akan berlaku ketika penyampaian pensyarah di dalam kelas dengan penggunaan media seperti buku teks, papan tulis, LCD projektor, nota edaran, bahan dari internet dan tayangan interaktif (4). Manakala komunikasi yang berlaku secara tidak langsung di luar kelas dengan perantaraan media yang lebih pantas serta meluas seperti Sistem Pesanan Ringkas (SMS),*facebook, e-learning, whatsapp dan internet,* penulisan artikel dakwah, buletin, ceramah, syarahan, kuliah agama dan program-program agama. Keberkesanan terhadap penggunaan media-media ini oleh pensyarah memberi kelangsungan kepada peningkatan kefahaman pelajar terhadap penyampaian.

Komunikasi Dakwah merupakan suatu proses penyampaian dan pertukaran maklumat dengan menggunakan prinsip dan kaedah yang terdapat dalam al-Quran dan al-Hadith. Proses ini adalah untuk mendidik masyarakat tentang hakikat kebenaran Islam dan meletakkan al-Quran dan al-Hadith sebagai sumber rujukan utama dalam menjalankan segala aktiviti kehidupan sama ada dari aspek akidah, ibadah dan muamalah. Secara umumnya para ilmuan Islam mentakrifkan komunikasi dakwah iaitu menjaga kebenaran tentang mesej yang di bawa, baik dari segi berita, perkhabaran atau perkataan, bersifat realiti iaitu bersesuaian dengan fitrah manusia bagi memenuhi keperluan jasmani dan rohani, menggunakan medium yang sesuai dengan keupayaan intelektual kumpulan sasaran dan merangkumi semua cabang kehidupan manusia sesuai dengan ajaran Islam [5]. Seorang pensyarah yang memiliki kemahiran komunikasi, merupakan nilai tambah dalam proses pengajaran dan pembelajaran. Kelebihan ini dapat membantu pensyarah membina hubungan yang baik dan menggarap segala potensi diri pelajar (6).

Pensyarah bermaksud orang yang mengajar, pendidik, pengajar, pengasuh (1). Menurut Dr. Adli Hj. Yacob dan Khuzaihan Zakaria, guru bermaksud pendidik, pengajar, pengasuh secara formal (7). Menurut Ahmad Mahmood Musanif, guru bermaksud pendidik, pengajar secara formal. Guru mengikut perspektif Islam mempunyai tanggungjawab dalam pembangunan akhlak iaitu sebagai *murabbi* (a trainer of souls and personalities) dan bukan semata-mata sebagai *mu'allim* (a transmitter of knowledge) (8). Pensyarah sebagai *da'i* merupakan golongan profesional yang bertindak sebagai pendidik dan pendakwah dalam masyarakat. Peranan pensyarah adalah untuk menyemai kesedaran tentang kepentingan ilmu, membangunkan ummah, membina akhlak yang baik dan membimbing pelajar supaya menjauhi sifat-sifat *mazmumah* (9).

Pendidikan Islam merupakan modul yang bertindak sebagai alat untuk mengajak manusia ke arah kebaikan. Pendidikan dalam bahasa arab bermaksud *tarbiyyah, tardib, ta'dib, tadris, taklim* dan *riyadah*. Dari aspek istilah pendidikan Islam ialah proses pendidikan untuk mendidik seseorang supaya memiliki akhlak yang mulia, menjauhi sifat terkeji, membimbing manusia ke jalan yang lurus, mengislahkan amal untuk mencapai kebahagiaan kehidupan di dunia dan di akhiratPendidikan Islam merangkumi aspek fardu ain dan fardu kifayah dengan menekankan kepentingan individu dan pembangunan ummah (8,9)

Kajian ini mampu untuk dijadikan sumber informasi penting dalam mengenal pasti kelemahan dan kekurangan peranan media komunikasi dakwah yang gunakan dan penemuan kajian dapat membantu pensyarah merangka kaedah yang lebih dekat dengan jiwa pelajar. Selain itu, kajian ini mampu memberi maklumat awal kepada pihak institusi tentang keperluan meningkatkan prasarana yang berkaitan dengan media pengajaran supaya sejajar dengan kehendak semasa sejajar dengan trasformasi pendidikan kini.

Penyataan Masalah

Pendakwah perlu mempunyai kualiti komunikasi yang mampu mempengaruhi umat Islam kerana keberkesanan dalam penyampaian dapat membawa perubahan yang besar kepada masyarakat. Reliti masyarakat kini sedang menghadapi krisis keruntuhan akhlak yang amat membimbangkan dan media massa yang setiap hari melaporkan berita-berita yang menggugat nilai kebaikan masyarakat seolah-olah masyarakat telah hilang pertimbangan dan pedoman hidup yang berlandaskan lunas-lunas Islam yang sebenarnya. Fenomena ini juga seolah-olah menggambarkan mesej penyampaian ilmu Pendidikan Islam yang berlaku di semua peringkat masyarakat khususnya di sekolah dan Institut Pengajian Tinggi tidak mencapai objektif dan kurang berkesan dalam mengubah masyarakat ke arah kebaikan. Masalah kerutuhan akhlak remaja Malaysia yang saban hari dipaparkan di media massa membuktikan moral remaja begitu kritikal. Dari sudut pendidikan, permasalahan ini berpunca daripada masalah kerohanian yang sakit dan kosong iaitu tidak berupaya mengisi roh mereka dengan rasa nikmat kepada Allah. Para pelajar perlu diberi rawatan kerohanian yang berkesan. Selain itu beliau juga berpendapat proses pengajaran dan pembelajaran dan kurikulum Pendidikan Islam perlu ada inovasi, strategi yang sesuai supaya dapat memberi kesan kepada perubahan minda dan penghayatan pelajar. Guru pendidikan Islam perlu kreatif dalam penyampaian supaya isi pengajaran mudah dicernakan oleh pelajar. Guru Pendidikan Islam sebagai pendakwah perlu meletakkan pelajar sebagai sasaran dakwah. Para guru seharusnya terlebih dahulu membuat perubahan diri dan minda sebelum mengharapkan perubahan pelajar (10)

Objektif Kajian

1. Mengetahui bentuk media komunikasi dakwah pensyarah dalam pengajaran dan pembelajaran.

2. Mengenal pasti faktor-faktor penggunaan media komunikasi dakwah pensyarah dalam pengajaran dan pembelajaran.

3. Mengenal pasti bentuk halangan penggunaan media komunikasi dakwah pensyarah dalam pengajaran dan pembelajaran.

Metodologi Kajian

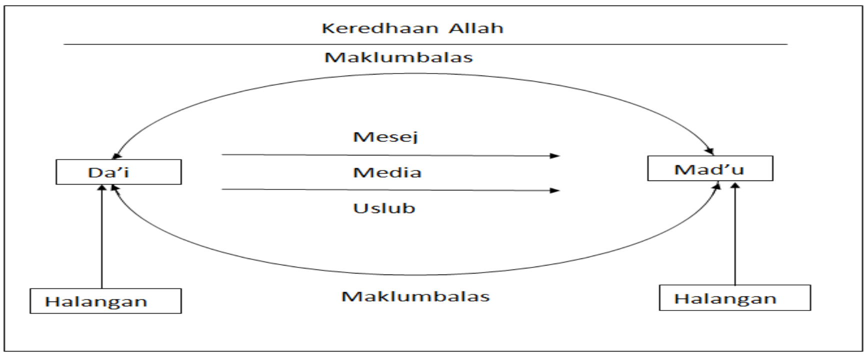
Pengumpulan data merupakan proses pengumpulan maklumat dengan memilih dan menggunakan kaedah alat pengumpulan data yang bersesuaian dengan permasalahan kajian, strategi penyelidikan di samping jenis dan kewujudan sumber data (11). Kajian perpustakaan digunakan adalah untuk mengumpulkan data-data dan maklumat yang berkaitan dengan kajian, mengetahui dengan lebih mendalam tentang konsep komunikasi dakwah dan penggunaannya dalam penyampaian. Data-data diperolehi daripada bahan-bahan ilmiah seperti buku, jurnal, dokumen, disertasi yang berkaitan dengan kajian. Kajian lapangan iaitu membuat pemerhatian dan mencatat tingkah laku individu atau kumpulan subjek kajian dalam keadaan semula jadi (12). Kajian ini juga bertujuan untuk mendapatkan data-data secara terus daripada responden. Cara ini akan menghasilkan suatu persoalan terkini dan lebih menepati objektif kajian. Kajian ini telah menggunakan dua kaedah kajian lapangan iaitu temubual berstruktur dan observasi berstruktur. Temu bual berstruktur telah dilakukan untuk mendapatkan maklumat tentang penggunaan dan perlaksanaan komunikasi dakwah 16 orang pensyarah Pendidikan Islam dalam kalangan pelajar sama ada di dalam kelas atau di luar kelas.

Observasi berstruktur adalah pemerhatian yang dilakukan untuk membolehkan penyelidik mengumpul data berdasarkan tingkah laku yang diperhatikan bagi memahami secara lebih mendalam tentang perkara yang dikaji dan mencatat dapatan dalam borang pemerhatian (Chua Yan Piaw:2011). Observasi memberi peluang kepada penyelidik melihat sendiri secara langsung dengan situasi yang dikajinya disamping menyokong dapatan soal selidik. Dalam kajian ini observasi telah dilakukan ke atas pelaksanaan dan perjalanan kelas pensyarah dan perjumpaan dengan pelajar secara tidak formal. Kaedah ini dapat membantu penyelidik mendapat maklumat yang lebih mendalam berdasarkan perkara sebenar tentang aplikasi media dalam pelaksanaan komunikasi dakwah pensyarah.

Analisis data adalah proses menghuraikan masalah kajian berasaskan persoalan kajian bagi menjelaskan objektif kajian yang telah disasarkan (13). Semua data yang telah dikumpul akan dianalisis dengan menggunakan kaedah kualitatif . Temu bual secara berstruktur yang dijalankan ke atas 16 orang pensyarah pendidikan Islam melibatkan 3 item yang perlu dijawab. Penganalisaan secara menyeluruh telah dilakukan terhadap hasil jawapan daripada temubual yang dijalankan bagi mendapatkan pengesanan tentang penggunaan media dalam pelaksanaan komunikasi dakwah pensyarah terhadap pelajar.. Proses pengambilan data ini berlaku secara manual sebelum diproses menggunakan perisian *Atlas.t7* iaitu merupakan satu perisian yang membolehkan data kualitatif diproses dalam bentuk kuantitatif. Perisian *Atlas.t7* ini digunakan bagi memproses data adalah untuk kemudahkesanan dan penyusunan ketika menganalisis data.

Kajian ini berdasarkan Model Komunikasi dakwah Pensyarah Terhadap Pelajar. Model komunikasi ini hasil inspirasi daripada Model Retorik Penulisan Dakwah oleh Norrodzoh Hj Siren namun telah diolah mengikut kesesuaian dengan tajuk kajian (14). Model komunikasi ini melibatkan beberapa elemen dalam menjayakan komunikasi. Setiap elemen berhubung kait dalam memberi kesan terhadap komunikasi pensyarah terhadap pelajar.

Rajah 1: Model Komunikasi Dakwah Pensyarah Terhadap Pelajar



Sumber: Pengubahsuaian daripada Model Retorik Penulisan Dakwah oleh Norrodzoh Siren

Rajah 1 menjelaskan tentang hubungan komunikasi dakwah pensyarah terhadap pelajar yang meletakkan pensyarah sebagai da'i dan pelajar sebagai mad'u. Model komunikasi ini meletakkan media sebagai intipati kepada penyampaian mesej dengan penggunaan uslub yang bersesuaian. Keperluan pensyarah dalam penggunaan media yang bersesuaian dengan tujuan membolehkan sesuatu mesej disampaikan dengan tepat, difahami dan mendapat maklum balas.

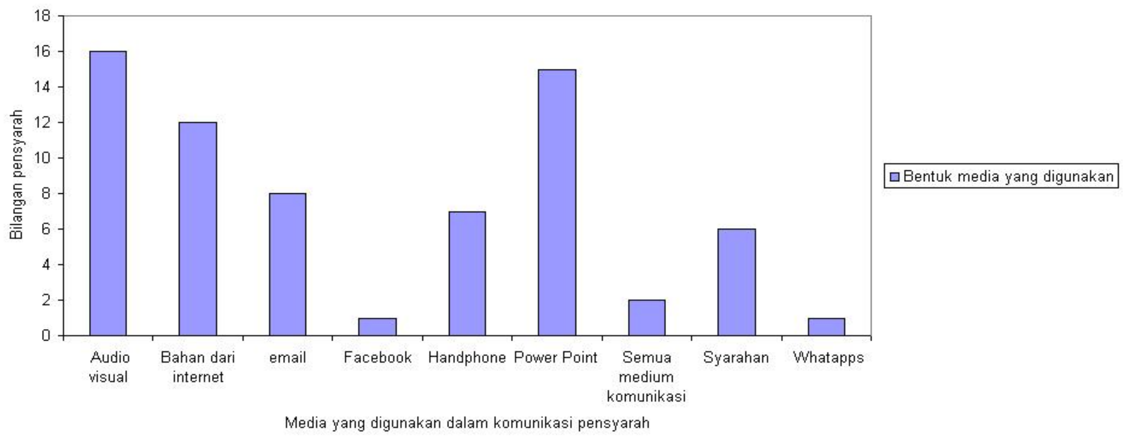
Skop Batasan Kajian

Penyelidikan ini dijalankan terhadap semua pensyarah Pendidikan Islam seramai 16 orang. Kajian yang dilakukan ke atas komunikasi dakwah secara lisan dan bukan lisan dalam proses perlaksanaan pengajaran dan pembelajaran oleh pensyarah pendidikan Islam terhadap pelajar Politeknik Sultan Salahuddin Abdul Aziz Shah. kajian ini kemudian dianalisa bagi memperolehi maklumat dalam membantu penambahbaikan dalam perancangan, penyusunan dan perlaksanaan para pensyarah dalam proses penyampaian pengajaran dan pembelajaran (P&P).

Dapatan Kajian

Dalam proses pelaksanaan komunikasi dakwah, pelbagai saluran media digunakan untuk menyampaikan maklumat. Rajah 2, 3 dan 4 merupakan analisa hasil temu bual bersama pensyarah berkaitan aspek penggunaan media dalam komunikasi dakwah mereka terhadap pelajar.

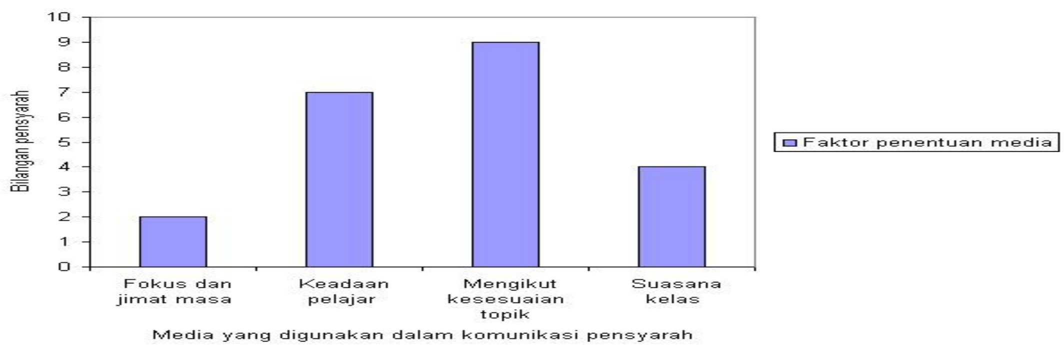
a) Bentuk media yang digunakan



Rajah 2: Bentuk Media Yang Digunakan

Analisa kajian mendapati 16 orang pensyarah menggunakan audio visual sebagai media utama dalam penyampaian dakwah di dalam kelas atau media lisan di samping media lain turut digunakan iaitu menggunakan bahan daripada internet (12 orang), *power point* (15 orang) dan syarahan (enam orang). Walau bagaimanapun komunikasi terus berlaku semasa pensyarah di luar kelas apabila terdapat (lapan orang) memilih emel sebagai medium komunikasi, penggunaan telefon bimbit sama ada melalui panggilan atau sistem pesanan ringkas (SMS) (tujuh orang), menggunakan medium komunikasi semasa seperti *whatsapp*, *wechat*, *blackberry Messenger* (BBM) dan sebagainya (dua orang) dan hanya (seorang) pensyarah menggunakan *facebook* sebagai medium komunikasi bersama pelajar di luar kelas. Menurut Puan Nor Yanie (2013) penggunaan audio visual dan *power point* dapat membantu pensyarah memfokuskan subjek pengajaran. Selain itu, kaedah ini dapat menarik minat pelajar dalam memberi tumpuan semasa pengajaran dan memudahkan proses pemahaman. Manakala bagi komunikasi dakwah bersama pelajar di luar kelas beliau gemar menggunakan emel kerana mudah diakses oleh semua pelajar (Siti Noryanie Yusof:2013). Penggabungan pelbagai media dan memperbanyakkan alat bantu mengajar dapat membantu menarik minat pelajar terhadap pendidikan Islam serta memberi keberkesanan dalam proses pengajaran dan pembelajaran (16).

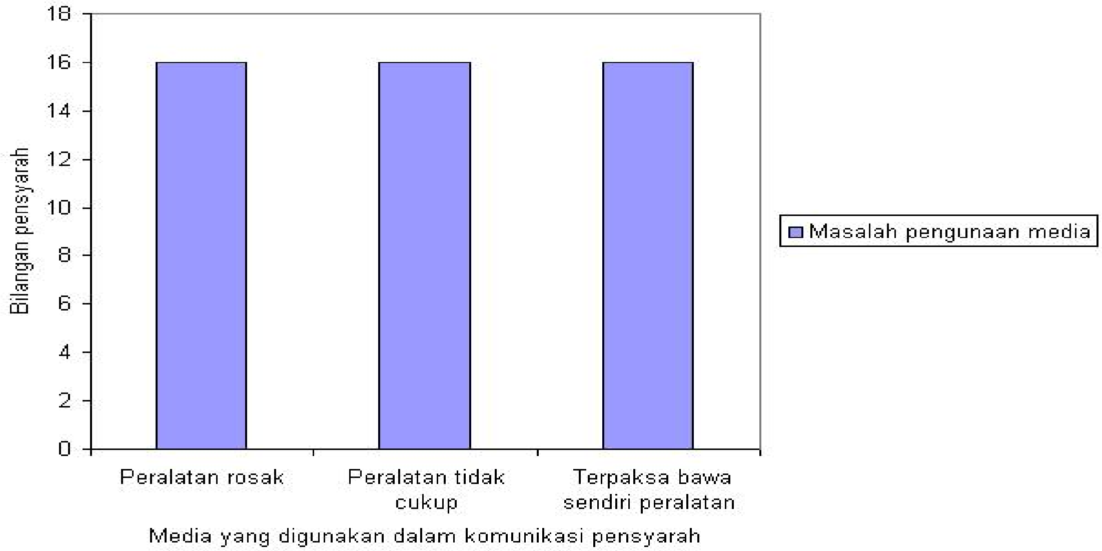
(b) Faktor penentuan media



Rajah 3 Faktor Penentuan Media

Dalam proses komunikasi terdapat pelbagai faktor yang menentukan penggunaan sesuatu media. Berdasarkan Rajah 3 menunjukkan faktor penentuan media dalam komunikasi pensyarah. Hasil temu bual yang dilakukan mendapati (sembilan orang) pensyarah mengatakan kesesuaian topik menentukan bentuk penggunaan media manakala faktor lain ialah keadaan pelajar (lapan orang) pensyarah, suasana kelas (empat orang) dan media yang lebih fokus dan menjimatkan masa dipilih oleh (dua orang) pensyarah. Menurut Masitah (2013), penggunaan media yang tepat dan bersesuaian dengan topik pengajaran membantu pelajar memahami dengan lebih cepat dan menjimatkan masa (17).

(c) Masalah penggunaan media



Rajah 4: Masalah Dalam Penggunaan Media

Media yang baik akan sentiasa berperanan dalam membantu melancarkan proses komunikasi. Oleh itu masalah penggunaan media boleh menjejaskan kualiti komunikasi itu sendiri. Rajah 4 menunjukkan aspek masalah penggunaan media iaitu semua pensyarah (16 orang) mengatakan masalah penggunaan media mengganggu proses komunikasi dalam pengajaran iaitu peralatan rosak, peralatan tidak mencukupi dan terpaksa membawa sendiri ke kelas sebagai permasalahan utama dalam penggunaan media. Faktor-faktor ini sememangnya memberi impak besar dalam proses penyampaian. Menurut Puan Aisyah (2013), pensyarah sentiasa berusaha memberikan penyampaian yang terbaik kepada pelajar, tetapi masalah-masalah yang di luar kawalan seperti hal tersebut telah menjejaskan mutu penyampaian dan melambatkan proses P&P yang telah dirancang (18).

Rumusan dan cadangan

Kajian ini secara umumnya mengupas tentang peranan media dalam perlaksanaan komunikasi dakwah pensyarah terhadap pelajar bagi proses pengajaran dan pembelajaran. Kajian dapat mengenal pasti bahawa majoriti pensyarah menggunakan audio visual sebagai media pilihan utama dalam perlaksanaan pengajaran dan pembelajaran di dalam bilik kuliah manakala emel pula menjadi medium pilihan untuk berinteraksi dengan pelajar di luar kelas kerana mudah diakses oleh pelajar. Penggunaan media pengajaran yang pelbagai adalah didorong oleh beberapa faktor terutamanya kesesuaian topik yang diajar. Walau bagaimana pun, permasalahan kekurangan prasarana yang berkait dengan media komunikasi pensyarah sedikit sebanyak menjejaskan kelancaran proses pengajaran dan pembelajaran yang telah dirancang.

Berdasarkan dapatan kajian yang menunjukkan para pensyarah Pendidikan Islam kurang menggunakan media komunikasi terkini, adalah dicadangkan para pensyarah perlu menghilangkan sedikit *privacy* dengan sentiasa mengaktifkan media komunikasi yang dekat dengan pelajar seperti *whatapps* dan *facebook* demi penambah baikan dalam penyampaian maklumat dan maklum balas yang pantas terhadap permasalahan pelajar.

Kajian juga mendapati *power point* yang digunakan oleh pensyarah merupakan komunikasi sehala yang kurang menarik perhatian pelajar. Oleh yang demikian adalah dicadangkan pensyarah menggunakan *power point* yang berbentuk interaktif yang dapat melibatkan pelajar dalam proses pengajaran dan pembelajaran. Selain itu, kajian juga mendapati kekurangan prasarana yang dihadapi pihak pensyarah dalam proses penyampaian pengajaran dan pembelajaran, adalah dicadangkan pihak pengurusan Politeknik dapat meningkatkan lagi kemudahan-kemudahan seperti menyediakan LCD projektor dalam setiap bilik kuliah dan sentiasa memastikan media pengajaran berada dalam keadaan yang berfungsi demi kelancaran proses pengajaran dan pembelajaran.

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KEJUTAN DASAR KEWANGAN DALAM DWI SISTEM PERBANKAN DI MALAYSIA MENGIKUT SEKTOR EKONOMI

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Katakunci: Dasar kewangan dan pinjaman bank

Abstrak. Kajian ini bertujuan untuk mengkaji pengaruh kejutan dasar kewangan terhadap pinjaman bank mengikut sektor ekonomi dalam sistem dwi perbankan iaitu perbankan Islam dan konvensional yang diamalkan di Malaysia. Model vektor auto regresi berstruktur (*structural vector auto regressive-SVAR*) dalam bentuk tidak recursif (non-recursive) diaplikasikan dalam kajian ini untuk mengenal pasti *(identify)* kejutan dasar kewangan. Oleh kerana Malaysia adalah sebuah ekonomi kecil terbuka, kajian ini juga mengambil kira peranan beberapa pemboleh ubah asing seperti harga minyak dunia dan dasar kewangan asing ke atas ekonomi negara. Analisis fungsi tindak balas *(impulse response function-IRF)* telah digunakan untuk melihat tindak balas dinamik antara pinjaman sektor ekonomi di perbankan Islam dan konvensional dengan kejutan dasar kewangan. Berdasarkan hasil kajian, pinjaman mengikut sektor ekonomi menunjukkan terdapatnya kesan ketidak selarasan (*heterogeneity*) terhadap kejutan dasar kewangan.

***Keywords**: Monetary policy and bank loan*

The paper aims to examine the effect of monetary policy shocks upon the bank loans by economic sector in a dual banking system of conventional and Islamic banking practices in Malaysia.. This study applied a structural vector auto regressive-SVAR model in non-recusive structure to identify the monetary policy shocks. Since Malaysia is a small open economy the study takes into account several foreign variables such as world oil price and foreign monetary policy. Analysis of the impulse response function(IRF) has been used to examine the dynamic response of loans in the Islamic and conventional banking to monetary policy impulses. While analysis of the variance decomposition (VDC) has been used to describe the influence of other variables in the model to shocks of loans in the Islamic and conventional banking system. The results showed that loans by economic sectors has inconsistency effect (heterogeneity) of the monetary policy shock

Pengenalan

Perkembangan sistem perbankan Islam semakin penting seiring dengan perbankan konvensional yang mana ianya merupakan satu alternatif kepada perbankan konvensional yang mengamalkan kadar bunga. Pada 4 Mac 1993 Skim Perbankan Tanpa Faedah (SPTF) dilaksanakan untuk membenarkan institusi kewangan konvensional menawarkan perkhidmatan perbankan Islam yang kini dikenali sebagai Skim Perbankan Islam (SPI). Sehingga tahun 2013 terdapat 43 buah bank perdagangan tempatan dan asing di Malaysia, daripada jumlah tersebut 27 buah adalah bank konvensional dan 16 buah bank Islam. Perkembangan SPI di Malaysia terus rancak berkembang seiring dengan perbankan konvensional yang sedia kukuh, yang mana sehingga akhir Julai 2010 aset sistem perbankan Islam meningkat kepada RM337.6 bilion yang merupakan 20.1 peratus daripada jumlah aset sistem perbankan negara. Manakala deposit SPI berkembang 20.6 peratus kepada RM263.4 bilion yang merangkumi 21.6 peratus daripada jumlah deposit sistem perbankan dan pembiayaan meningkat sebanyak 25.1 peratus daripada jumlah pinjaman sistem perbankan (Laporan ekonomi 2010/2011).

Sistem dwi perbankan di Malaysia banyak disokong oleh pelaksanaan dasar oleh Bank Negara Malaysia (BNM) terutama sari segi dasar kewangan. Bermula April 2004 BNM memperkenalkan rangka kerja baru kadar bunga iaitu menjadikan kadar dasar semalaman (OPR) sebagai petunjuk kepada teras dasar kewangan. OPR berperanan sebagai isyarat untuk mempamerkan teras dasar kewangan dan sebagai kadar sasaran operasi mudah tunai harian Bank Pusat dan bertindak sebagai kadar rujukan utama dalam penentuan kadar bunga pasaran yang lain. Maka, dijangkakan pinjaman di dwi sistem perbankan juga dipengaruhi oleh sebarang perubahan dalam dasar kewangan negara.

Dasar kewangan yang dilaksanakan oleh BNM dengan mengawal kadar bunga pasti memberi kesan kepada pinjaman sistem perbankan, namun sejauh mana kejutan dasar ini mempengaruhi pinjaman mengikut sektor ekonomi dalam sistem perbankan Islam dan konvensional masih tidak terdapat banyak kajian yang dilakukan terutama dalam konteks Malaysia. Justeru, kajian ini memberikan sumbangan yang bermakna kepada literatur dalam bidang dasar kewangan. Kajian ini ingin mengesan kejutan dasar kewangan terhadap pinjaman mengikut sektor ekonomi di antara bank Islam dan bank konvensional. Adalah dijangkakan tindak balas bank konvensional dan Islam terhadap dasar kewangan adalah berbeza. Pada umumnya, struktur pembiayaan Islam memerlukan perkongsian risiko dan keuntungan dalam nisbah yang di persetujui lebih awal, memandangkan kos bagi sebahagian besar pembiayaan Islam sedia ada tidak berkait secara langsung dengan perubahan dalam kos dana, dari segi teorinya, perubahan dasar kewangan mempunyai kesan yang terbatas atas kos pinjaman sedia ada (laporan tahunan BNM 2006).

Hasil kajian dapat diringkaskan kepada terdapat fungsi tindak balas yang berbeza dalam kejutan dasar kewangan terhadap pinjaman di antara sistem perbankan Islam dan konvensional.

Untuk memudahkan perbincangan, kertas kerja ini dibahagikan kepada beberapa bahagian. Bahagian kedua membincangkan tinjauan literatur, manakala bahagian ketiga memberikan tumpuan kepada kaedah penganggaran dengan memberi tumpuan kepada model VAR berstruktur

(SVAR). Bahagian keempat membincangkan keputusan empirikal kajian dan bahagian akhir sekali membincangkan rumusan serta implikasi dasar.

Kajian lepas

Terdapat banyak kajian lepas yang mengkaji kejutan dasar kewangan yang dikaitkan dengan saluran kredit bank dan juga kesan terhadap pemboleh ubah makroekonomi seperti output, inflasi, kadar pertukaran dan kadar bunga. Antaranya kajian oleh Ramirez (2004) mendapati saluran kredit mempunyai pengaruh yang besar dalam dasar kewangan bagi ekonomi terbuka yang mana ia mempengaruhi output. Selain itu kajian oleh Sun et al. (2010) mengesahkan pinjaman bank mempunyai pengaruh yang signifikan dalam transmisi dasar kewangan untuk mempengaruhi aktiviti ekonomi di China. Kajian yang dilakukan oleh Etem Hakan & Bengul Gulumser (2011) dengan mengambil sampel di Turki dapat menyangkal andaian bahawa perbankan Islam adalah lebih stabil terhadap perubahan kadar bunga oleh sebab ia berasakan pembahagian keuntungan yang mana kejutan dalam kadar bunga bukan sahaja memberi kesan kepada pinjaman dan deposit perbankan konvensional tetapi juga dalam perbankan Islam di Turki.

Di Malaysia, terdapat beberapa kajian mengenai kesan dasar kewangan terhadap pemboleh ubah makroekonomi dan juga pemboleh ubah pinjaman bank yang melibatkan sistem perbankan konvensional. Kajian yang mengambil kira data di Malaysia oleh Salina dan M. Shabri (2009) bagi tempoh sebelum krisis kewangan Asia (1989:01-2006:12); semasa krisis (1989:01-1996:12); dan selepas krisis (1999:01-2006:12) mendapati deposit dan pinjaman bank mempunyai peranan yang penting dalam transmisi dasar kewangan. Dapatan empirikal membuktikan terdapat hubungan yang kuat antara deposit dan pinjaman bank dengan aktiviti ekonomi semasa di Malaysia. Manakala kajian oleh Noor Azlan dan Aisyah (2005) telah mengkaji tentang kesan sebab menyebab dasar kewangan sama ada mempengaruhi saluran kredit atau penciptaan wang dengan melihat aset dan liabiliti bank perdagangan. Kajian ini mengandaikan dasar kewangan adalah exogenous iaitu dengan hanya mengambil kira pemboleh ubah makroekonomi domestik seperti inflasi, indeks pengeluaran industri, kadar bunga 3 bualan antara bank dan indeks komposit pasaran saham Kuala Lumpur yang mempengaruhi aset dan liabiliti bank. Keputusan kajian menyokong saluran kredit mempunyai kesan sebab menyebab yang signifikan dalam mempengaruhi pemboleh ubah ekonomi. Dengan menggunakan VAR berstruktur Azali dan Matthews (1999) telah mengkaji peranan wang dan kredit dalam transmisi dasar kewangan sebelum dan selepas liberalisasi kewangan dengan mengambil kira enam pemboleh ubah dalam ekonomi tertutup. Hasil kajian mendapati sebelum liberalisasi kewangan kejutan kredit bank memberi kesan lebih tinggi terhadap perubahan output berbanding kejutan kewangan. Selepas liberalisasi peranan wang dan inovasi kredit memberikan kesan kejutan output yang signifikan. Selain itu kajian oleh Ibrahim (2005) juga mengandaikan Malaysia sebuah negara ekonomi tertutup dalam kajiannya terhadap kesan output sektor ekonomi dan kejutan dasar kewangan. Kajian ini menggunakan pengenalpastian skim recursif (*recursive*) VAR dan mendapati terdapat beberapa sektor seperti pembuatan, pembinaan, kewangan, insurans, hartanah dan perkhidmatan menunjukkan penurunan dalam agregat pengeluaran akibat daripada kejutan kadar bunga. Model VAR juga telah digunakan oleh Mohd Zaini et al. (2006) bagi mengkaji kesan dasar kewangan yang ketat yang dilaksanakan oleh Malaysia selepas krisis kewangan 1997 dengan melihat kesan terhadap pinjaman beberapa sektor ekonomi di bank perdagangan. Terdapat tujuh sektor ekonomi yang diambil kira dalam kajian ini hasil kajian ini mendapati kesemua pinjaman sektor ekonomi seperti sektor pertanian, pembinaan, perkilangan, harta tanah, perlombongan, perkhidmatan dan perdagangan mempunyai kesan negatif dengan penguncupan dasar kewangan. Kajian lain oleh Domac (1999), menggunakan model VAR untuk melihat kesan dasar kewangan menguncup dan saluran kredit terhadap industri kecil dan sederhana (IKS). Penemuan empirikal mendapati dasar kewangan menguncup memberikan kesan yang lebih besar kepada pengeluaran industri kecil dan sederhana (IKS).

Terdapat beberapa kajian lain juga yang telah mengaitkan dasar kewangan dengan perbankan Islam dan perbankan konvensional. Seperti kajian oleh Salina et al. (2009) mengkaji kesan kejutan dasar kewangan terhadap sistem dwi perbankan di Malaysia. Kajian ini mengambil kira data bulanan dari tahun 1999 hingga 2006 dan menggunakan model VAR. Empat model telah dibentuk untuk membezakan kesan kejutan dasar kewangan terhadap pinjaman dan deposit di dalam sistem perbankan Islam dan konvensional. Didapati bahawa pinjaman dan deposit perbankan Islam lebih sensitif terhadap perubahan kadar bunga berbanding perbankan konvensional. Kajian oleh Raditya & Salina (2010) mengkaji peranan perbankan Islam dalam proses transmisi dasar kewangan di Malaysia dengan menggunakan pemboleh ubah indeks perindustrian, pembiayaan dan deposit perbankan Islam serta kadar dasar semalaman sebagai indikator dasar kewangan. Kajian ini mendapati hasil fungsi tindak balas dasar kewangan yang ketat akan mengurangkan keupayaan bank Islam menawarkan pembiayaan dan seterusnya menguncupkan aktiviti ekonomi. Salina & M. Shabri (2010) meneruskan kajian berkaitan kesan kejutan kewangan terhadap perbankan Islam semasa krisis kewangan 1997 dan 2007. Kajian ini mendapati sistem perbankan konvensional dan perbankan Islam terdedah kepada kejutan dasar kewangan dan pemboleh ubah makroekonomi.

Kajian-kajian ini boleh dikritik kerana Malaysia adalah sebuah ekonomi kecil terbuka maka dasar kewangan asing perlu diambil kira dalam melihat kesan dasar kewangan terhadap pemboleh ubah domestik. Kajian yang mengambil kira Malaysia sebagai ekonomi kecil terbukan telah dilakukan oleh Tang (2006) dengan menggunakan dua belas pemboleh ubah termasuk empat pemboleh ubah asing iaitu indeks harga komoditi, indeks harga pengguna, pendapatan benar dan kadar dana persekutuan bagi Amerika Syarikat yang diandaikan tidak exogenous terhadap pemboleh ubah domestik, yang mana pemboleh ubah domestik boleh menerima kesan daripada pemboleh ubah asing dengan lat masa tetapi tidak dengan serta merta. Kajian oleh M. Azlan & Fisher (2010) yang menggunakan model VAR berstruktur telah mengambil kira pemboleh ubah domestik di samping pemboleh ubah asing iaitu harga indeks komoditi, output, inflasi dan kadar bunga bagi negara rakan dagang utama Malaysia iaitu Amerika Syarikat dan Jepun dalam kajian mereka. Hasil kajian mengesahkan kejutan faktor asing dominan mempengaruhi pencapaian makroekonomi Malaysia.

Oleh itu kertas kerja ini berhasrat untuk melakukan inovasi dari segi pemilihan pemboleh ubah dengan mengambil kira pemboleh ubah endogenous bagi keterbukaan ekonomi Malaysia. Dari segi penggunaan model VAR berstruktur (SVAR) untuk mengkaji kesan kejutan dasar kewangan terhadap sistem dwi perbankan di Malaysia juga berbeza dengan kajian sebelum ini yang dilakukan oleh Salina et al. (2009), Salina & M. Shabri (2010) dan Raditya & Salina (2010) yang mana telah menggunakan model vektor auto regresi (*vector auto regresion-VAR*). Kertas kerja ini juga dapat memberikan sumbangan kajian dalam teori dasar kewangan dan saluran kredit bank berkaitan sistem dwi perbankan di Malaysia dengan mengambil kira peranan sektor ekonomi akibat kejutan dasar kewangan.

Metodologi kajian

Kajian ini menggunakan model VAR berstruktur (SVAR) untuk melihat kesan kejutan dasar kewangan terhadap pinjaman dalam sistem dwi perbankan di Malaysia dengan mengambil kira data dari bulanan dari bulan Januari 1999 hingga bulan Disember 2010. Pemboleh ubah endogenous dibahagikan kepada dua blok iaitu asing dan domestik. Blok asing terdiri daripada harga minyak dunia dan dasar kewangan asing. Manakala blok domestik pula terdiri daripada pemboleh ubah kadar dasar semalaman, pinjaman bank Islam dan bank konvensional, pendapatan negara dan inflasi. Model VAR berstruktur di gunakan dalam kajian ini kerana ia boleh mengenal pasti kesan kejutan dasar kewangan melalui analisis fungsi tindak balas (IRF) dan penguraian varian (VDC).

Malaysia adalah sebuah ekonomi kecil terbuka dalam pembentukan model VAR berstruktur. Hubungan dinamik dalam sistem persamaan model VAR struktur adalah seperti di bawah:

$$A_0 Y_t = \Gamma_0 D_0 + A(L) Y_t + \epsilon_t \tag{1}$$

Yang mana A_0 adalah matriks segi empat sama yang menunjukkan pekali yang berinteraksi secara struktur serta merta di antara pemboleh ubah di dalam sistem, Y_t adalah matriks (7 x 1) iaitu vektor bagi pemboleh ubah ataupun $[\Delta OIL \;\; FFR \;\; \Delta IPI \;\; INF \;\; IBOR \;\; \Delta LOAN \;\; \Delta NEER]$ yang mana LOAN akan dipecahkan mengikut model seperti pinjaman mengikut sektor perkilangan (iKILANG), pembinaan (iBINA) dan kewangan (iWANG), harta tanah (iHARTA), perdagangan dan borong (iBROG), pengangkutan (iANGKUT), elektrik, gas dan air (iELEK), perlombongan (iLOM) dan pertanian (iTANI) di perbankan Islam dan sektor yang sama di perbankan konvensional iaitu sektor perkilangan (kKILANG), pembinaan (kBINA), kewangan (kWANG), harta tanah (kHARTA), perdagangan dan borong (kBROG), pengangkutan (kANGKUT), elektrik, gas dan air (kELEK), perlombongan (kLOM) dan pertanian (kTANI). D_0 adalah vaktor berketentuan (malar, trend dan pemboleh ubah dummi), $A(L)$ adalah turutan k^{th} matriks polimial dalam operator lat $L\,[A(L) = A_1 L - A_2 L^2 - \cdots - A_k L^k]$, $\varepsilon_t = [\varepsilon_t^{\Delta \mathrm{OIL}} \;\; \varepsilon_t^{FFR} \;\; \varepsilon_t^{\Delta IPI} \;\; \varepsilon_t\, \varepsilon^{INF} \;\; \varepsilon_t^{\mathrm{IBOR}} \;\; \varepsilon_t^{\Delta LOAN} \;\; \varepsilon_t^{\Delta\, NEER}]$ adalah vektor kejutan struktur yang mana ia mematuhi $E(\varepsilon_t) = 0$, $E(\varepsilon_t \varepsilon_s) = \Omega_\varepsilon = I$ (matriks identiti) untuk semua $t = s$. Persamaan [1] tidak dapat dianggarkan secara terus untuk memperoleh nilai A_0 , A_k dan ε_t. Walau bagaimanapun, persamaan [1] boleh dianggarkan dengan mengubahnya dalam bentuk terturun (*reduced form)* seperti berikut :

$$Y_t = A_0^{-1} \Gamma_0 D_0 + A_0^{-1} A(L) Y_t + A_0^{-1} \varepsilon_t \qquad \text{atau} \tag{2}$$

$$Y_t = \Pi_0 D_0 + \Pi_1(L) Y_t + \mu_t \tag{3}$$

yang mana, $\Pi_0 = A_0^{-1}\Gamma_0, \Pi_1 = A_0^{-1}A(L), \mu_t = A_0^{-1}\varepsilon_t$ dan $\mathrm{E}(\mu_t\mu_t) = A_0^{-1}\Omega A_0^{-1} = \Sigma$

[4]

Kajian ini telah menggunakan model VAR berstruktur-A untuk membuat pengenalpastian di kalangan parameter semasa (*contemporaneous parameter*). Model persamaan VAR berstruktur yang digunakan untuk mengenal pasti kesan kejutan dasar kewangan terhadap pinjaman mengikut sektor dalam perbankan Islam dan konvensional adalah seperti berikut;

$$\begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ a_{21} & 1 & 0 & 0 & 0 & 0 & 0 \\ a_{31} & a_{32} & 1 & 0 & 0 & 0 & 0 \\ a_{41} & 0 & a_{43} & 1 & 0 & 0 & 0 \\ 0 & 0 & a_{53} & a_{54} & 1 & a_{56} & 0 \\ a_{61} & a_{62} & 0 & a_{64} & 0 & 1 & a_{67} \\ a_{71} & a_{72} & a_{73} & a_{74} & a_{75} & a_{76} & 1 \end{bmatrix} \begin{bmatrix} \mu_t^{\Delta OIL} \\ \mu_t^{FFR} \\ \mu_t^{\Delta IPI} \\ \mu_t^{INF} \\ \mu_t^{\Delta LOAN} \\ \mu_t^{IBOR} \\ \mu_t^{\Delta NEER} \end{bmatrix} = \begin{bmatrix} \varepsilon_t^{\Delta OIL} \\ \varepsilon_t^{FFR} \\ \varepsilon_t^{\Delta IPI} \\ \varepsilon_t^{INF} \\ \varepsilon_t^{\Delta LOAN} \\ \varepsilon_t^{IBOR} \\ \varepsilon_t^{\Delta NEER} \end{bmatrix}$$

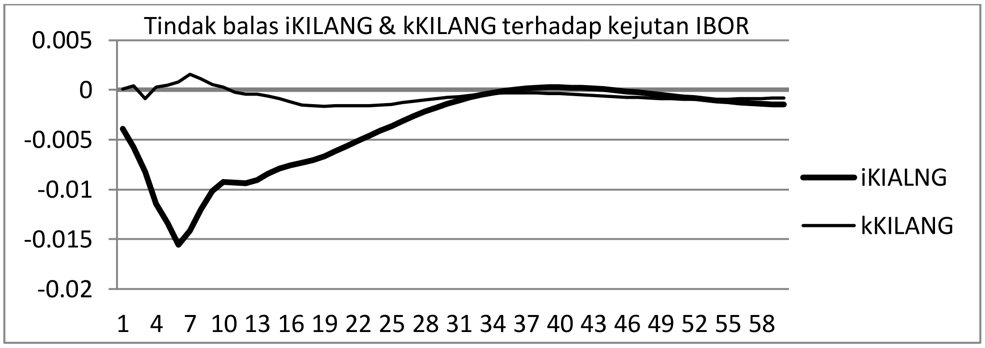
[5]

Terdapat sembilan model yang telah dibentuk bagi membezakan kesan kejutan terhadap pinjaman mengikut sektor ekonomi.

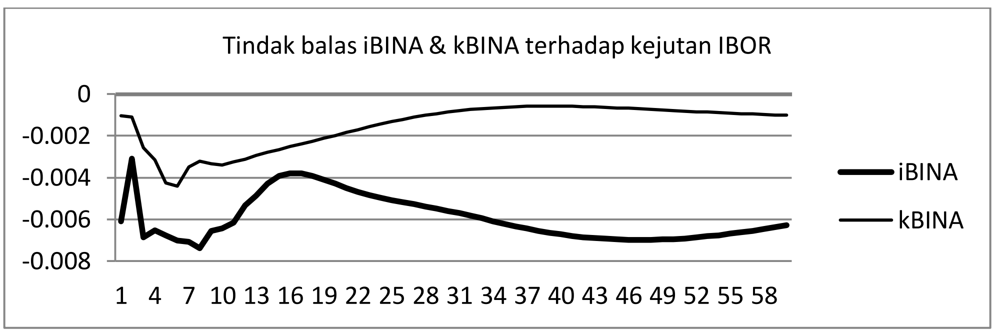
Keputusan kajian

RAJAH 1 hingga RAJAH 9 menunjukkan struktur fungsi tindak balas bagi pemboleh ubah endogenous dalam kajian ini. Fokus utama kajian ini adalah untuk menganalisis perbezaan kesan kejutan dasar kewangan terhadap pinjaman dalam sektor perkilangan, pembinaan, kewangan, harta tanah, perdagangan dan borong, pengangkutan, elektrik, gas dan air, perlombongan dan pertanian di perbankan Islam dan konvensional. Berdasarkan rajah tersebut, garisan yang lebih gelap menunjukkan jangkaan tindak balas bagi pinjaman di perbankan Islam manakala garisan yang lebih nipis menunjukkan jangkaan tindak balas bagi pinjaman di perbankan konvensional.

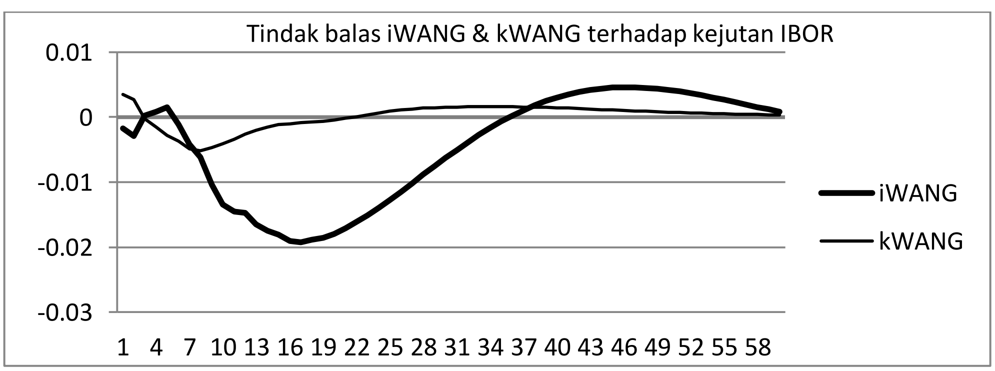
Pinjaman mengikut sektor ekonomi menunjukkan terdapatnya kesan ketidak selarasan (*heterogeneity*) terhadap kejutan dasar kewangan. Pinjaman di perbankan Islam jatuh lebih rendah berbanding pinjaman perbankan konvensional dalam sektor perkilangan, pembinaan, kewangan, harta tanah, perdagangan dan borong, elektrik, gas dan air, perlombongan dan pertanian terhadap kejutan dasar kewangan. Manakala pinjaman di perbankan Islam dan konvensional dalam sektor pengangkutan jatuh dalam kadar yang lebih kurang sama.



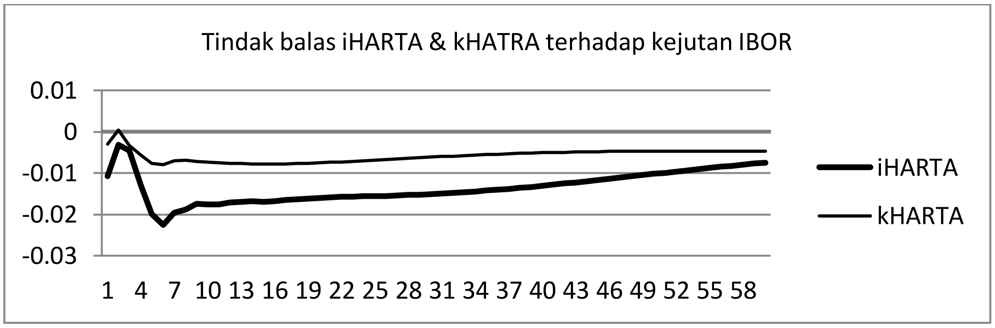
Rajah 1 Analisis fungsi tindak balas pinjaman sektor perkilangan bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan



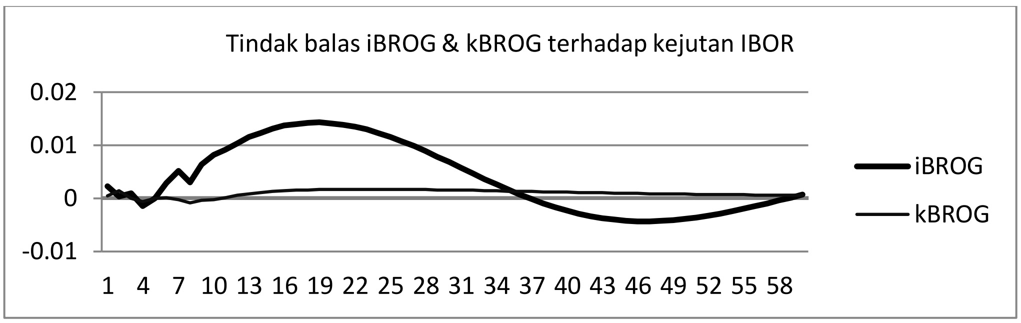
Rajah 2 Analisis fungsi tindak balas pinjaman sektor pembinaan bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan



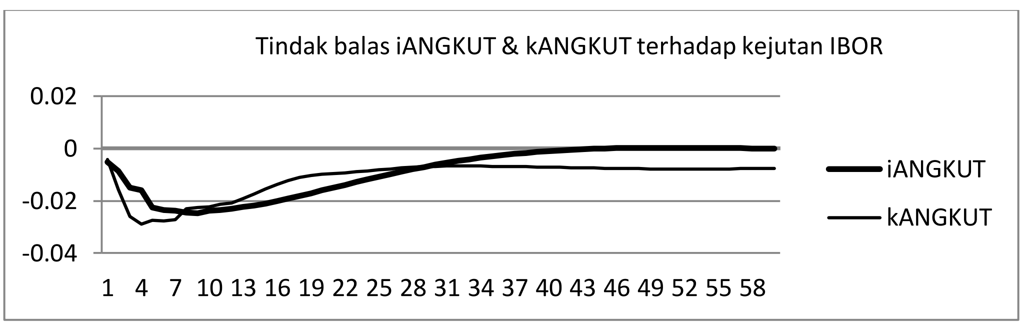
Rajah 3 Analisis fungsi tindak balas pinjaman sektor perkhidmatan kewangan dan insurans bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan



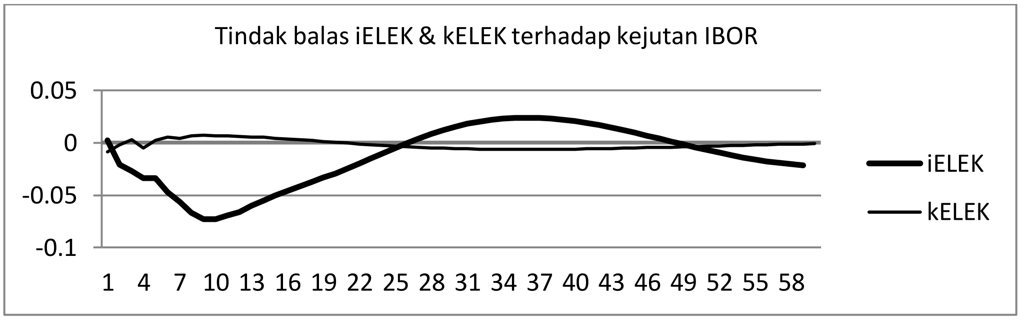
Rajah 4 Analisis fungsi tindak balas pinjaman sektor harta tanah bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan



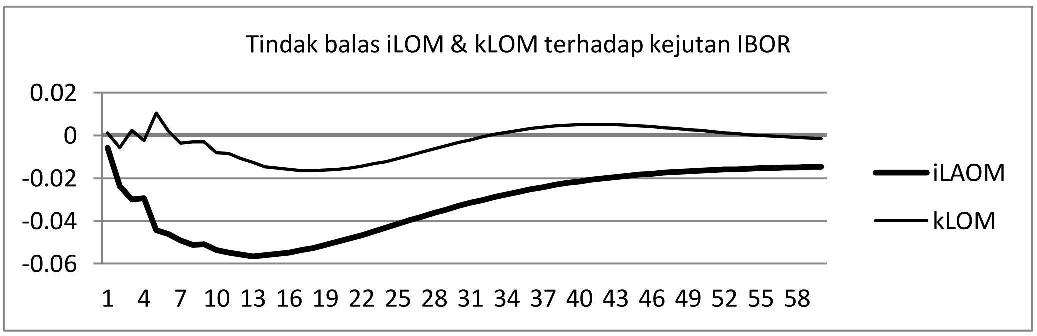
Rajah 5 Analisis fungsi tindak balas pinjaman sektor perdagangan dan borong bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan



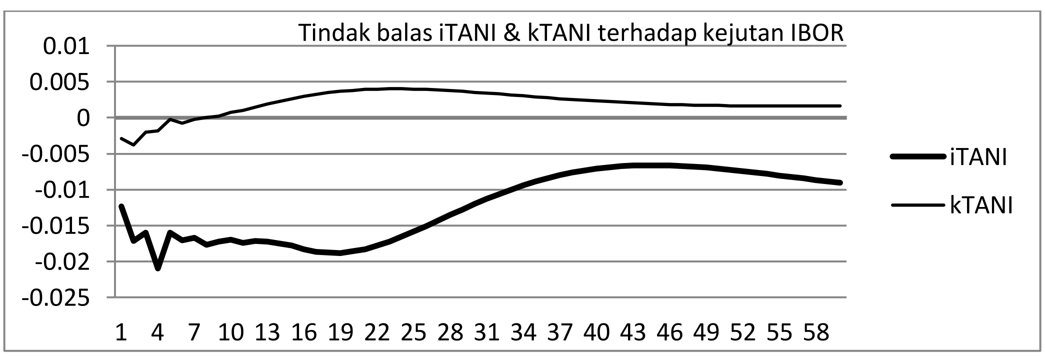
Rajah 6 Analisis fungsi tindak balas pinjaman sektor pengangkutan bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan



Rajah 7 Analisis fungsi tindak balas pinjaman sektor elektrik, gas dan air bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan



Rajah 8 Analisis fungsi tindak balas pinjaman sektor perlombongan dan kuari bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan



Rajah 9 Analisis fungsi tindak balas pinjaman sektor pertanian bagi perbankan Islam dan perbankan konvensional terhadap kejutan dasar kewangan

Kesimpulan

Berdasarkan hasil kajian, menunjukkan bahawa terdapatnya ketidak selarasan (*heterogeneity*) kejutan dasar kewangan terhadap pinjaman sektor ekonomi di dalam sistem perbankan Islam dan konvensional. Kesan kejutan di perbankan konvensional adalah lebih sedikit berbanding perbankan Islam yang menerima kesan kejutan yang besar bila dasar kewangan menguncup memandangkan industri perbankan Islam ini masih dalam peringkat perkembangan di samping penglibatan pasaran yang terhad iaitu hanya boleh terlibat dalam pasaran wang secara Islam sahaja.

Kajian yang dilakukan oleh Salina et al. (2009), Salina & M. Shabri (2010) dan Raditya & Salina (2010) sebelum ini turut mengesahkan bagi kes di Malaysia terdapatnya kesan tindak balas yang lebih besar dalam perbankan Islam bila berlaku kejutan dasar kewangan. Menurut, Zaheer et al. (2011) yang membandingkan aset bank Islam dan bank konvensional mendapati dasar kewangan yang ketat mengurangkan pertumbuhan pinjaman bank kecil iaitu bank Islam tetapi boleh meningkatkan kredit yang diberikan oleh bank-bank yang besar dalam jangka pendek, hasil kajiannya ini sama seperti kajian oleh Kashyap dan Stein (1995). Bagi kes di Malaysia pada akhir Julai 2010 aset sistem perbankan Islam hanyalah RM337.6 bilion yang merupakan 20.1% daripada jumlah aset sistem perbankan negara dan selebihnya 79.9% adalah aset sistem perbankan konvensional, maka boleh dikatakan industri perbankan Islam adalah masih kecil, maka ada rasionalnya pinjaman dalam perbankan Islam di Malaysia menerima kesan yang lebih besar akibat kejutan dasar kewangan.

Hasil kajian ini akan memberi petunjuk kepada pembuat dasar bahawa kejutan dasar kewangan akan memberi pengaruh yang besar dalam sistem perbankan Islam yang mengamalkan konsep tanpa kadar bunga. Maka telah tiba masanya untuk pembuat dasar merangka teknik pengurangan risiko yang berkenaan bagi membolehkan bank Islam untuk mengharungi kejutan dasar kewangan dalam infrastruktur kewangan semasa. Jika sistem perbankan Islam yang tidak melibatkan kadar bunga dalam semua instrumen kewangannya lebih stabil terhadap kejutan dasar kewangan maka dengan kadar penyerapan yang berbeza ini dapat menangani kesan kejutan positif dan negatif dengan berkesan. Jika berlaku kejutan dasar kewangan yang positif, perubahan kadar bunga dapat bertindak balas dengan cepat di perbankan konvensional untuk menangani inflasi atau menangani struktur kredit. Apabila kejutan dasar kewangan negatif seperti kesan krisis kewangan, sistem perbankan Islam sepatutnya dapat menampan kejutan yang serta merta tersebut kerana pinjamannya tidak berasaskan kadar bunga dan dapat menyeimbangkan pasaran kewangan negara. BNM perlu juga melaksanakan polisi lain sewaktu dasar kewangan ketat seperti mengurangkan paras rizab berkanun, membeli semula bil perbendaharaan, kawalan kredit terpilih dan pujukan moral bagi menangani kesan kejutan dasar kewangan yang lebih besar dialami oleh sistem perbankan Islam. Polisi kawalan kredit terpilih dan juga pujukan moral dapat memberi sasaran kepada mengurangkan kesan kejutan dasar kewangan terhadap sektor ekonomi tertentu terutama sektor yang banyak bergantung pada pinjaman sektor perbankan.

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TAHAP PENGETAHUAN TENTANG KESELAMATAN DAN KESIHATAN PEKERJAAN DI KALANGAN PEKERJA SEKTOR LOGISTIK: KAJIAN KES DI NORTHPORT MALAYSIA BHD & PKT LOGISTIK SDN BHD

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Keywords: OSH, Logistics, hazards, healthcare

Abstract. Awareness of occupational safety and health (OSH) plays an important role in the prevention of occupational injuries and diseases. Following the enactment of the Occupational Safety and Health Act (OSHA) in 1994, various programmers have been implemented by different agencies to increase awareness and knowledge of OSH in the workplace, including among industrial workers. The objective of this study was to determine the level of OSH awareness and knowledge among 268 industrial workers in Northport Malaysia Berhad & PKT Logistics Sdn Bhd. A cross-sectional study was conducted using a self-administered questionnaire addressing information on demographics, general OSH issues, OSH legislations, occupational hazards in the healthcare setting and personal protective equipment (PPE). The overall level of knowledge on OSH was moderate for PKT Logistics and very low for Northport. Most of the respondents in Northport were less knowledgeable about general OSH, legislations and occupational hazards, and PPE with a lowest mean score of 2.05. Although the OSHA1994 has existed in Malaysia for more than ten years, awareness of OSH remains relatively poor. This warrants a greater effort to promote OSH knowledge and principles among the workers and this study can be a future reference for lecturers to create awareness on OSH knowledge in the workplace among all logistics students in Politeknik Nilai.

Pengenalan

Faktor keselamatan pekerja dalam sesebuah industri adalah satu perkara yang diambil berat dalam bidang ini untuk memastikan kelancaran dan pembangunan dalam industri tersebut. Perkara ini diakui sendiri oleh Jabatan Keselamatan dan Kesihatan Pekerjaan (JKKP), yang bertanggungjawab dalam pentadbiran dan perlaksanaan undang-undang berkaitan dengan keselamatan pekerjaan dalam negara. Kemalangan dikatakan berlaku akibat kecuaian pekerja atau kerosakan daripada alatan dan jentera. Kesedaran keselamatan diri adalah kriteria utama untuk mengelak daripada berlaku kemalangan pekerjaan dan jika sikap ini diketepikan kemalangan dan kecederaan pekerjaan mungkin meningkat. Kesedaran juga akan mengurangkan perbelanjaan organisasi yang berpunca daripada pembiayaan tuntutan pampasan yang disebabkan oleh bencana pekerjaan.

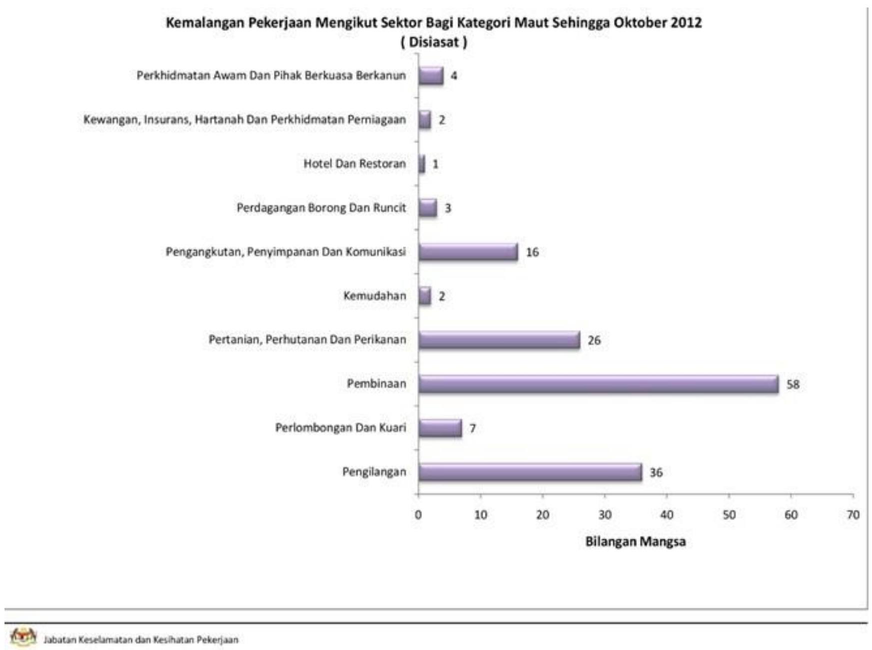
Latar Belakang Kajian

Akta Keselamatan dan Kesihatan Pekerjaan 1994 (Akta 514) ialah sebuah Akta yang telah diwartakan menurut Parlimen Malaysia (1994). Tujuan utama AKKP 1994 ialah untuk memastikan keselamatan orang-orang yang sedang bekerja terhadap risiko kepada keselamatan atau kesihatan yang berbangkit daripada aktiviti-aktiviti orang- orang yang sedang bekerja, melindungi orang-orang di tempat kerja selain daripada orang-orang sedang bekerja terhadap risiko kepada keselamatan atau kesihatan yang berbangkit daripada aktiviti-aktiviti orang-orang yang sedang bekerja serta menggalakkan suatu persekitaran pekerjaan bagi orang-orang yang sedang bekerja yang disesuaikan dengan keperluan fisiologi mereka.

Jika dilihat dari sudut definisi, kesihatan ialah perlindungan tubuh dan fikiran dari penyakit yang berpunca dari proses, bahan atau prosedur yang digunakan di tempat kerja. Manakala keselamatan ialah perlindungan individu dari kecederaan fizikal. Kedua-dua perkataan ini digabungkan bagi menggambarkan betapa pentingnya kedua-dua aspek ini ditekankan dalam persekitaran tempat kerja. Akta Keselamatan dan Kesihatan Pekerjaan 1994 (Akta 514) dilihat sebagai satu akta yang wajib diketahui oleh semua pekerja agar keselamatan dan kesihatan pekerja ditempat kerja terpelihara.

Penyataan Masalah

Menurut Lee Lam Thye, (1999). Kesedaran keselamatan diri adalah kriteria utama untuk mengelak daripada berlaku kemalangan pekerjaan dan jika sikap ini diketepikan, kemalangan dan kecederaan pekerjaan mungkin meningkat. Kesedaran juga akan mengurangkan perbelanjaan organisasi yang berpunca daripada pembiayaan tuntutan pampasan yang disebabkan oleh bencana pekerjaan. Jadual 1.0 menunjukkan pekerjaan di bidang pergudangan turut menyumbang kepada bilangan kemalangan di seluruh Malaysia dengan enam belas orang mangsa, iaitu keempat tertinggi daripada sepuluh bidang pekerjaan manakala jadual 2.0 menunjukkan statistik kemalangan industri di Malaysia pada tahun 2012. Amalan keselamatan dan kesihatan pekerjaan penting kepada pekerja bagi mengelakkan kemalangan yang berlaku. Pengurusan logistik melibatkan pengendalian kontena dan barang-barang berat boleh mendatangkan bahaya kepada pekerja. Menurut Ahmad Zaidi Safuan dalam Sinar Harian (2013), kemalangan ditempat kerja berlaku disebabkan kecuaian pekerja itu sendiri. Pertubuhan Buruh Antarabangsa (ILO), menganggarkan antara 1.9 hingga 2.3 juta pekerja di seluruh dunia meninggal, dimana 354000 kematian adalah berpunca dari kemalangan di tempat kerja. Benua Asia catat peratusan paling tinggi (84.45%). Menurut Ab. Aziz dan Intan (2002), keselamatan pekerjaan merupakan salah satu aktiviti pengurusan sumber manusia yang penting dan berperanan untuk memberikan perlindungan kepada pekerja daripada kemalangan semasa menjalankan kerja. Untuk mencegah daripada berlakunya kecederaan, aspek keselamatan pekerjaan merupakan tanggungjawab semua pihak termasuklah majikan dan pekerja. Pekerja mestilah berwaspada semasa menjalankan tugas seharian bagi mengelakkan berlakunya kemalangan, dan majikan pula perlu memastikan persekitaran pekerjaan adalah selamat dan mematuhi undang-undang yang ditetapkan.



Jadual 1.0: Statistik Kemalangan Industri Di Malaysia Bagi Tahun 2012

Bil	TAHUN	BILANGAN KEMALANGAN	KEMATIAN
1.	199	114,13	952
2.	199	106,50	120
3.	199	86,58	130
4.	199	85,33	104
5.	199	92,07	909
6.	200	36,85	454

Jadual 2.0: Statistik Kemalangan Industri Di Malaysi a Bagi Tahun 1995-2000

Berdasarkan data yang dibincangkan di atas, dianggarkan Malaysia menanggung kehilangan dalam tenaga kerja bernilai sebanyak RM1.2 bilion akibat daripada kemalangan dalam tahun 1995 (Jabatan Keselamatan dan Kesihatan Pekerjaan, 2000). PERKESO telah membuat pembayaran akibat daripada kemalangan untuk tujuan faedah hilang supaya sementara berjumlah RM 289 juta dalam tahun 1995, RM 316 juta dalam tahun 1996 dan RM 383 juta dalam tahun 1997. Mengikut kajian PERKESO unjuran pembayaran pada tahun 2020 ialah RM 5 bilion dan dengan jumlah dana yang ada padanya, PERKESO mungkin tidak mempunyai dana yang mencukupi untuk membuat pembayaran jika keadaan sebegini berterusan. Untuk mencegah daripada berlakunya kecederaan, aspek keselamatan pekerjaan merupakan tanggungjawab semua pihak termasuklah majikan dan pekerja. Pekerja mestilah berwaspada semasa menjalankan tugas seharian bagi mengelakkan berlakunya kemalangan, dan majikan pula perlu memastikan persekitaran pekerjaan adalah selamat dan mematuhi undang-undang yang ditetapkan. Kajian ini dilakukan untuk melihat sejauhmana tahap pengetahuan pekerja-pekerja sektor logistik tentang amalan keselamatan dan kesihatan ditempat kerja di NorthPort (M) Bhd dan PKT Logistics Sdn Bhd

Berdasarkan data yang dibincangkan di atas, dianggarkan Malaysia menanggung kehilangan dalam tenaga kerja bernilai sebanyak RM1.2 bilion akibat daripada kemalangan dalam tahun 1995 (Jabatan Keselamatan dan Kesihatan Pekerjaan, 2000). PERKESO telah membuat pembayaran akibat daripada kemalangan untuk tujuan faedah hilang supaya sementara berjumlah RM 289 juta dalam tahun 1995, RM 316 juta dalam tahun 1996 dan RM 383 juta dalam tahun 1997. Mengikut kajian PERKESO unjuran pembayaran pada tahun 2020 ialah RM 5 bilion dan dengan jumlah dana yang ada padanya, PERKESO mungkin tidak mempunyai dana yang mencukupi untuk membuat pembayaran jika keadaan sebegini berterusan. Untuk mencegah daripada berlakunya kecederaan, aspek keselamatan pekerjaan merupakan tanggungjawab semua pihak termasuklah majikan dan pekerja. Pekerja mestilah berwaspada semasa menjalankan tugas seharian bagi mengelakkan berlakunya kemalangan, dan majikan pula perlu memastikan persekitaran pekerjaan adalah selamat dan mematuhi undang-undang yang ditetapkan. Kajian ini dilakukan untuk melihat sejauhmana tahap pengetahuan pekerja-pekerja sektor logistik tentang amalan keselamatan dan kesihatan ditempat kerja di NorthPort (M) Bhd dan PKT Logistics Sdn Bhd

Objektif Kajian

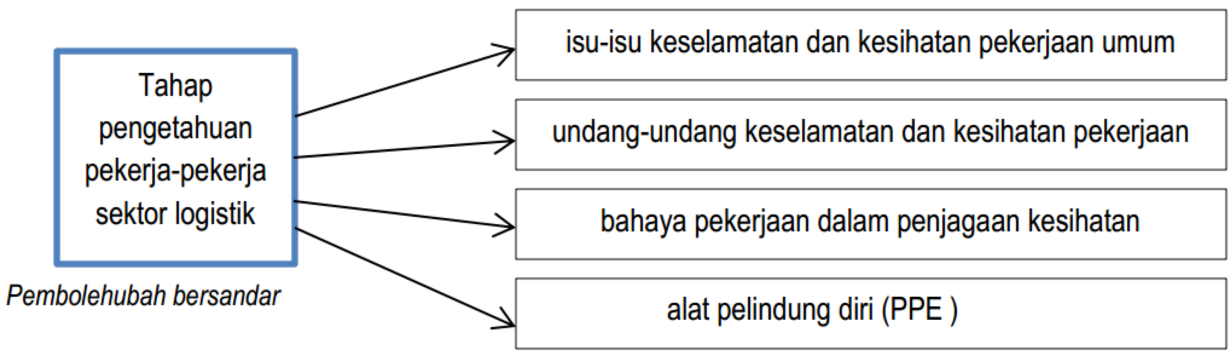
i. Mengetahui tahap pengetahuan pekerja tentang amalan keselamatan dan kesihatan pekerjaan.

ii. Mengenalpasi tahap pematuhan amalan pekerja dalam mempraktikkan langkah-langkah keselamatan ditempat kerja.

Kepentingan Kajian

Kajian ini dilakukan adalah berdasarkan kepentingan dan keutamaan yang diterima oleh pelajar-pelajar. Diharapkan agar hasil daripada dapatan kajian ini dapat dijadikan panduan kepada pelajar-pelajar di Politeknik Nilai khususnya daripada Program Diploma in Logistics & Supply Chain Management (DLS), Jabatan Perdagangan. Kajian ini juga boleh dijadikan rujukan kepada penyelidik-penyelidik akan datang yang akan membuat kajian dalam bidang ini.

Kerangka Kajian



Rajah 3.0

Metodologi

Bahagian ini merujuk kepada kaedah yang sesuai untuk menjalankan penyelidikan dan menentukan tatacara yang yang efektif untuk mencapai objektif kajian iaitu mengkaji mengenai tahap pengetahuan pekerja PKT Logistics Sdn Bhd dan NorthPort (M) Bhd terhadap keselamatan dan kesihatan pekerja di tempat kerja. Satu set borang soal selidik telah diedarkan kepada para responden untuk mengetahui persepsi mereka mengenai isu-isu keselamatan dan kesihatan pekerjaan. Menurut Tuckman (1988), soal selidik adalah instrumen yang mudah mendapat kerjasama daripada responden kerana responden bebas menyatakan pendapat serta menilai persoalan yang dikemukakan. Selain itu, pemerhatian juga dijalankan bagi mengetahui keadaan dan persekitaran yang berlaku dikedua-dua kawasan yang dikaji. Kajian ini telah dijalankan pada bulan Januari hingga November 2014 ke atas 132 orang pekerja Northport dan 136 orang pekerja PKT Logistics yang telah dipilih secara rawak. Bagi menguji kebolehpercayaan dan kesahan soal selidik, penyelidik telah menggunakan pekali

Cronbach Alpha. Nilai keseluruhan bagi setiap item didalam borang soal selidik yang diedarkan kepada pelajar menunjukkan nilai Alpha Cronbach (α) yang diperolehi adalah 0.758. Ini jelas menunjukkan item-item yang terdapat didalam borang soal selidik diterima dan boleh dipercayai.

Dapatan & Analisis

Penemuan dan analisis telah dijalankan menggunakan kaedah utama dan sekunder. Pemerhatian dan soal selidik yang merupakan kaedah utama telah dilakukan untuk mendapatkan maklumat mengenai kawasan kajian. Proses pemerhatian dijalankan di kalangan kakitangan PKT Logistics Sdn Bhd & Northport (M) sdn Bhd untuk membantu penyelidik memahami bentuk soal selidik, menyelesaikan masalah dan memastikan responden memahami soalan yang dikemukakan. Sebahagian data yang diperlukan adalah terkawal dan tidak boleh diakses oleh penyelidik.

Persoalan Kajian 1: Adakah tahap pengetahuan pekerja tentang amalan keselamatan dan kesihatan pekerjaan berada pada tahap yang tinggi ?

Bil	Item-Item	NorthPort		PKT Logistics	
		Mean	Tahap	Mean	Tahap
1	Saya menggunakan tangga untuk memanjat ke atas kontena.	2.39	Rendah	3.62	Tinggi
2	Saya akan mengikut arahan yang ditetapkan oleh pegawai atasan saya.	2.30	Rendah	3.89	Tinggi
3	Saya memakai topi keselamatan apabila perlu.	2.75	Sedarhana	3.28	Sedarhana
4	Saya tidur dalam kawasan operasi.	1.68	Rendah	2.04	Rendah
5	Saya akan menelefon pihak keselamatan dengan segera jika berlaku kejadian yang tidak diingini.	3.89	Tinggi	3.85	Tinggi

Rajah 4

Berpandukan rajah 4.0, disimpulkan bahawa tahap pengetahuan pekerja-pekerja Northport (M) Bhd berada pada tahap yang rendah. Ini berlaku mungkin disebabkan bilangan pekerja yang ramai sehinggakan majikan tidak dapat memantau tahap pengetahuan mereka mengenai aspek keselamatan dan kesihatan pekerjaan. Mereka juga tidak didedahkan dengan kursus atau latihan dalaman serta kurang penekanan terhadap isu keselamatan di tempat kerja. Berbanding dengan pekerja-pekerja di PKT Logistics Sdn Bhd, mereka sering didedahkan dengan kursus dan latihan mengenai aspek keselamatan tetapi tahap pengetahuan mereka berada pada tahap sedarhana. Kesimpulannya, semua pekerja di kedua-dua syarikat ini perlu didedahkan dengan ilmu keselamatan dan kesihatan supaya kejadian yang tidak diingini dapat dielakkan. Kursus atau taklimat yang berkenaan perlu diberikan kepada semua pekerja seiring dengan perkembangan syarikat dalam sektor logistik ini.

Persoalan Kajian 2: Adakah pekerja-pekerja mematuhi amalan dan mempraktikkan langkah-langkah keselamatan ditempat kerja?

Bil	Item-Item	NorthPort		PKT Logistics	
		Mean	Tahap	Mean	Tahap
1	Saya menggunakan tangga untuk memanjat ke atas kontena.	2.39	Rendah	3.62	Tinggi
2	Saya akan mengikut arahan yang ditetapkan oleh pegawai atasan saya.	2.30	Rendah	3.89	Tinggi
3	Saya memakai topi keselamatan apabila perlu.	2.75	Sedarhana	3.28	Sedarhana
4	Saya tidur dalam kawasan operasi.	1.68	Rendah	2.04	Rendah
5	Saya akan menelefon pihak keselamatan dengan segera jika berlaku kejadian yang tidak diingini.	**3.89**	Tinggi	**3.85**	Tinggi

Rajah 5

Berpandukan rajah 5.0, disimpulkan bahawa pekerja-pekerja Northport (M) Bhd berada pada tahap yang rendah. Walaupun peraturan telah diberikan kepada pekerja, hasil kajian mendapati bahawa majoriti daripada pekerja di Northport (M) Bhd tidak mengamalkan arahan yang telah ditetapkan dan tidak mempraktikkan amalan keselamatan ditempat kerja. Mereka lebih suka mengikut jalan pintas untuk memudahkan kerja seharian tanpa mempedulikan keselamatan diri sendiri. PKT Logistics pula dilihat sebagai satu organisasi yang memberi penekanan terhadap aspek pematuhan amalan keselamatan ditempat kerja dimana pekerja-pekerjanya telah mempraktikkan hampir semua amalan yang telah ditetapkan oleh majikan. Mereka lebih peka terhadap keselamatan diri sendiri dan sering mengikuti latihan dan kursus yang telah disediakan oleh majikan.

Kesimpulan Dan Cadangan

Sebagai kesimpulan, tahap pengetahuan mengenai keselamatan dan kesihatan pekerjaan adalah sederhana untuk PKT Logistics Sdn Bhd dan sangat rendah untuk Northport (M) Bhd. Kebanyakan responden di Northport kurang pengetahuan tentang keselamatan dan kesihatan pekerjaan, undang-undang dan bahaya pekerjaan, serta alatan perlindungan diri dengan skor terendah min 2.05. Walaupun OSHA 1994 telah wujud di Malaysia selama lebih dari sepuluh tahun, kesedaran keselamatan dan kesihatan pekerjaan tetap yang lemah. Usaha yang lebih besar diperlukan untuk meningkatkan pengetahuan dan prinsip-prinsip keselamatan dan kesihatan pekerjaan di kalangan pekerja. Kajian ini juga dilihat dapat menjadi rujukan masa hadapan untuk mewujudkan kesedaran terhadap pengetahuan tentang aspek keselamatan dan kesihatan pekerjaan di tempat kerja dalam kalangan pelajar-pelajar logistik di Politeknik Nilai. Hasil kajian ini harus didedahkan kepada pelajar-pelajar supaya mereka lebih peka dengan kepentingan amalan keselamatan dan kesihatan di tempat kerja lebih-lebih lagi kepada mereka yang terlibat dengan aktiviti pembelajaran dan pengajaran dikawasan makmal dan bengkel dalam Politeknik Nilai. Kajian yang lebih menyeluruh perlu dilaksanakan bagi mendapatkan hasil kajian yang lebih tepat agar hasil kajian dapat dijadikan panduan kepada pelajar-pelajar yang ingin membuat penyelidikan dalam bidang ini khususnya dalam bidang logistik.

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Development Vibro-acoustics Signal Analysis To caharacterisation Of Metallic Material

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Abstract This paper present the implementation of an alternative statistical signal analysis method is called Mesokurtosis Zonal Nonparametric (M-Z-N) method for characterising material property based on the non-destructive testing concept using vibration and acoustics signal. Experimental procedure was performed by triggering a specimen elastically using an impact hammer in accordance with ASTM E1876 within the specific range of impact force. The experimental curves obtained by the determination of M-Z-N coefficient for various impact forces and metallic materials found that the results are statistically significant and can be successfully used for determining the correlation between the characteristic of the curves and the relevant elastic properties of the metallic materials. Experimental test of this analysis method on four metallic materials shows only three material have good agreement between the linear -quadratic coefficients with the metallic materials properties.

Introductıon

Research of material characterization is a factor to the development of new materials and improving the quality of the material the structure of materials, material properties and performance of materials. In materials science engineering, the study of the characterization and properties of materials depend on the process and structure of the material. In other words, there is a relationship between process and material structures with features or materials. This condition will affect the performance of the material[3]. Ties all of the above components will give engineers and materials new discovery. Idea from scientists and engineers in the field of materials include mechanical, civil, chemical and electrical is prone to problems in materials design. Among the problems in engineering is in gear manufacturing machine components, development and construction of building structures on the chip electrical circuit. Conventional experimental methods can only measure the properties of certain materials only for each testing machine. For example, testing machine universe can only measure the mechanical properties of certain materials such as Young's modulus, yield strength, tensile strength and maximum bending strength. Measurement of material properties such as hardness others, density and impact strength cannot be made with the tool and the machine requires a variety of experiments. The difference between each engine operating performance also contributed to the inaccuracy of the results. Impact testing on a specimen by using an impact hammer will cause the specimen to experience vibration at a certain period of time until the dynamic response is reduced after the maximum vibration occurs. In the field of materials engineering, the application of vibration and acoustic resulting from impact testing are used in characterization of materials, thickness gauge, identifying defects and typical damage such as cracks and voids, layer dated, inconsistency of material, deviation toughness, the defects in the microstructure, shrinkage cavities, fragments of material and nodular iron casting breakdown [2]. Research done by Nuawi et al [5] used alternative methods of statistical analysis M-Z-N to determine the natural frequency coefficient of vibration or acoustic signal obtained from experimental curve. The impact force testing is run on several types of metal. The study found that there is a good correlation between the resulting quadratic coefficient and elastic properties of the metal materials.I- kazTM analysis method or also known as Integrated Kurtosis-based Algorithm for Z-Notch Filter. This method is an alternative statistical analysis approach introduced by Nuawi et al [4]. This approach encompasses two important statistical characteristics of descriptive statistics and inferential statistics. Its descriptive statistics involves calculating the coefficient I-kaz, Ƶ ∞. Representatives of three-dimensional graphics of I-kaz also summarize sprinkling frequency based range frequencies graphically. Representatives of Ikaz graph is used to model the data pattern, by taking random guess characteristics and so on inference made to interpret the data being analyzed. These properties meet inference statistical characteristics. This inference is very useful for prediction purposes and interpretation of data for the observation of the future. Development of statistical analysis methods I-kazTM scattering data is based on the concept of a scattering center called the centroid [4]. The test method to be executed is non-destructive testing methods which impact experiments carried out by tapping the specimen using impact wrenches. This study is to develop a method to characterize materials by applying a statistical analysis of the vibration-signals obtained from this experiment. The advantage of this method is used specimens can be tested repeatedly without affecting the properties of the specimen material.

Methodology

The experimental set-up for this study is shown in Fig. 1. This set-up consists of rectangular bars, low carbon steel S50C, stainless steel AISI 304, FCD 500 cast iron and aluminum 6061-T6. with a size of 250 x 50 x 10 mm (length x width x thickness). an impact hammer as an impactor, microphone and its power module, piezofilm and two signal pickup systems to measure force, and vibration and acoustic signals. The elastic properties of the specimens are obtained from CES EduPack 2011 and are given in Table 1. The experiment was conducted in a semi anechoic room and the procedure is in accordance with ASTM E1876-07. Piezo film was placed in contact with the test specimen only as far from the nodal point as necessary to pickup the desired vibration. Microphone was located over an antinode point and closes enough to the test specimen to measure the acoustic waveform. The specimen was impacted using an impact hammer at the center of the specimen. The resultant force, vibration and acoustic readings were recorded simultaneously.

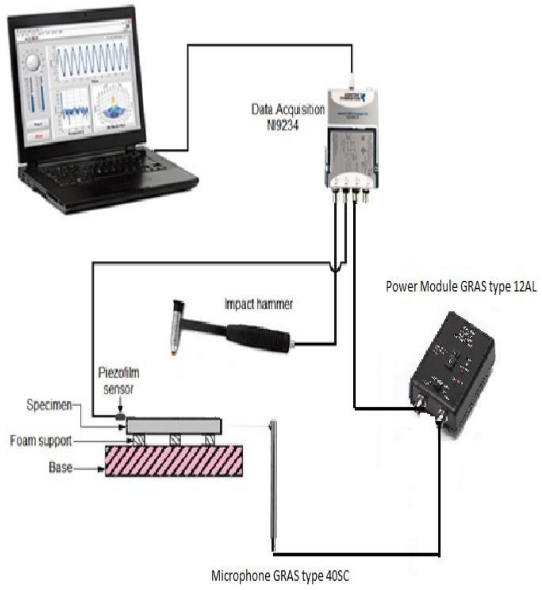


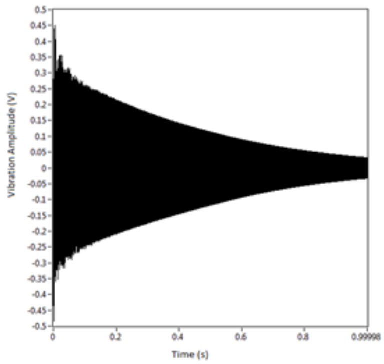
Figure 1 : Schematics of experimental design

Table 1: The elastic properties of the specimens (CES EduPack 2011)

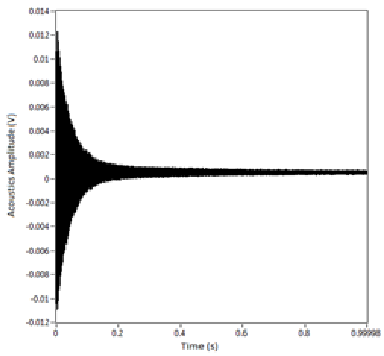
Properties Of Material	Carbon Steel S50C	Stainles Steel AISI 304	Cast iron FCD 500	Aluminium 6061-T6
Young's Modulous (Gpa)	213.90	196.31	90.5	70.73
Shear Modulus (Gpa)	82.56	77.56	35.53	26.02
Specific Heat (KJ/kg.^{0}C)	0.485	0.509	0.31	0.896
Themal Conductivity (W/m.^{0}C)	51.01	15.46	61.01	160.66

Result and Dicussion

Impact force generating process is done by using an impact hammer. Therefore, it is very difficult to generate the impact force according to a certain value impact force. To overcome this problem, the impact experiment conducted in a certain range within a predetermined impact. The impact force range is 400-500N, 600-700N, 800-900N, 1000-1100N, 1200-1300N, 1400-1500N and 1600-1700N. The magnitude of minimum impact force prescribed in this study was within the range of 400-500N. Vibration and acoustic signals for each type of material and the magnitude of impact force measured simultaneously in each set of experiments. Dynamic response of the specimen when subjected to the impact force is measured using piezo film and microphones, and both signals are recorded in the form of an electrical signal time domain. Signal amplitude is in units of volts obtained through the use LabView software. Figure 2 shows the vibration and acoustic signal for cast iron FCD 500, while Figure 3 was for stainless steel AISI 304. Figure 4 shows vibration and acoustic signals for carbon steel S50C and Figure 5 for aluminum 6061 - T6.

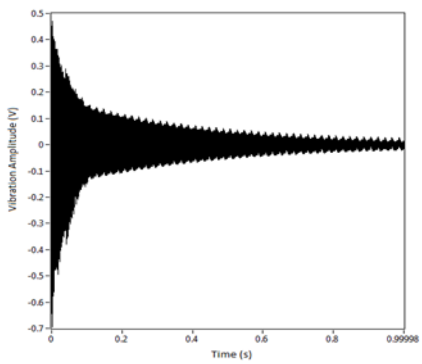


(a)

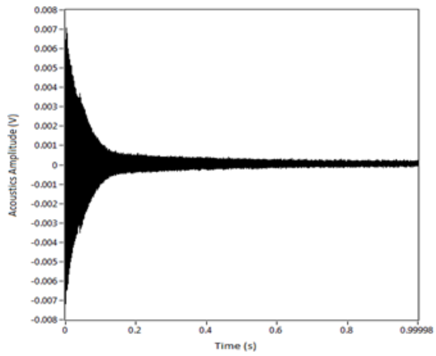


(b)

Figure 2: (a)Vibration and (b) acoustic signals for Cast Iron FCD 500 at 431.13N

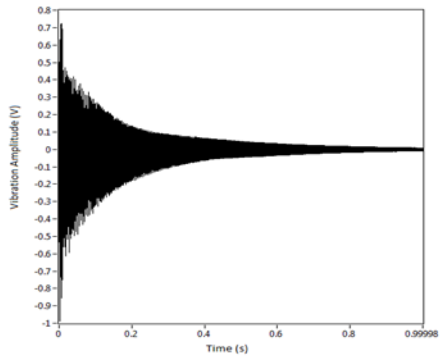


(a)

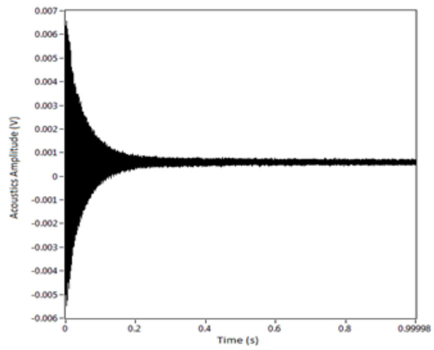


(b)

Figure 3: (a)Vibration and (b) acoustic signals Stainless Steel AISI 304 at 455.75N

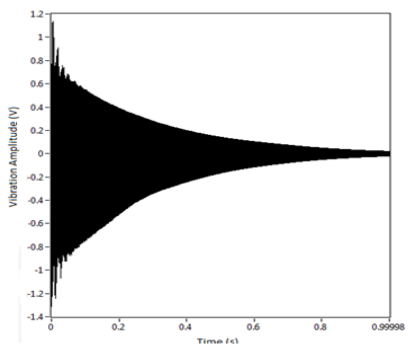


(a)

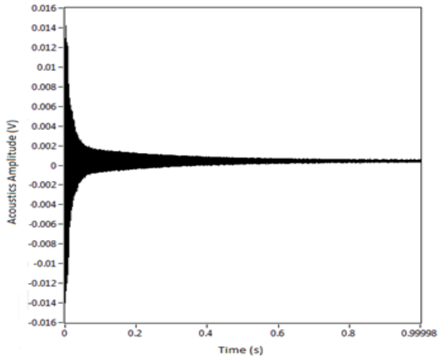


(b)

Figure 4: (a)Vibration and (b) acoustic signals for Carbon Steel S50C at 481N



(a)



(b)

Figure 5: (a)Vibration and (b) acoustic signals for Aluminum 6061 - T6 at 485N

Based on Figure 2 to Figure 5 it can be noted that the experimental impact on each type of material will produce vibration and acoustic signal in transient nature. This phenomenon happens because of the effect of dynamic response of the material after subjected to the impact force [6]. Amplitudes for two types of signals will increase faster than the initial amplitude when the impact force exerted on the specimen. When the maximum amplitude of the signal has been reached, the signal amplitude depreciates rapidly. Enhancement and depreciation amplitude of vibration and acoustic signals for each type of material and the magnitude of the impact force has certain characteristics. Table 2 to Table 5 summarizes the maximum amplitude of vibration and acoustic signals for each of the impact force and type of material. Based on the results, it can be concluded that for each type of material, the maximum amplitude increase in both vibration and acoustic signal generated is in line with the appreciation of the impact force exerted on the material. For example, for simple cast iron materials (Table 2), the maximum amplitude of the vibration signal on power 431.13N is 3.584mV. The maximum amplitude value increased to 4.525 mV, 13.488 mV, 19.193 mV, 26.439 mV, 39.505 mV, and 42.325 mV when the impact force exerted on the specimen increased to 664.51N, 879.96N, 1088.89N, 1242.52N, 1487.46N and 1640.5N.

Table 2: Maximum amplitude of vibration and acoustic signals for Cast Iron

Table 3: Maximum amplitude of vibration and acoustic signals for Carbon Steel

Impact Force(N)	Vibration Signal (mV)	Acoustics signal (mV)
481	2.292	0.434
605	11.745	0.492
870	13.246	0.514
1072	14.251	0.528
1233	50.525	0.547
1436	63.476	0.555
1655	65.432	0.573

Table 4: Maximum amplitude of vibration and acoustic signals for Stainless Steel

Impact Force(N)	Vibration Signal (mV)	Acoustics signal (mV)
455.75	2.292	0.577
679.03	11.745	0.612
883.48	13.246	0.695
1016.02	14.251	0.701
1242.45	20.525	0.728
1406.78	33.476	0.739
1665.35	45.432	0.743

Table 5: Maximum amplitude of vibration and acoustic signals for Aluminum

Impact Force(N)	Vibration Signal (mV)	Acoustics signal (mV)
485	18.24	0.59
693	20.505	0.622
878	26.146	0.697
1003	35.823	0.702
1244	48.509	0.718
1464	54.698	0.849
1634	64.707	0.922

Fast Fourier Transform (FFT) method was used to obtain the natural frequency component in each acoustic and vibration signals. This FFT method are able to transform the signals obtain in time domain into frequency domain. The example of natural frequency in frequency domain for acoustic signals are shown in Figure 5 for Carbon Steel, Figure 7 for Cast Iron, Figure 9 for Stainless Steel and Figure 11 for Aluminum. While The example of natural frequency in frequency domain for vibration signals for each material are shown in Figure 6 for Carbon Steel, Figure 8 for Cast Iron, Figure 10 for Stainless Steel and Figure 12 for Aluminum.

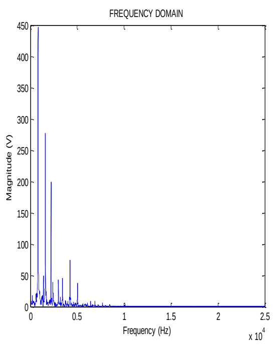


Figure 5: Acoustic frequency domain for Low Carbon Steel (481N)

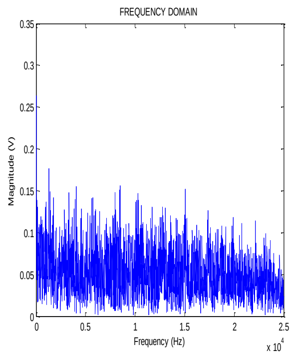


Figure 6: Vibration frequency domain for Carbon Steel (481N)

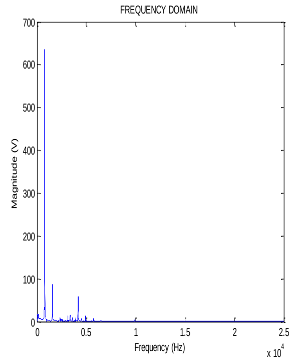


Figure 7: Acoustic frequency domain for cast iron (431.13 N)

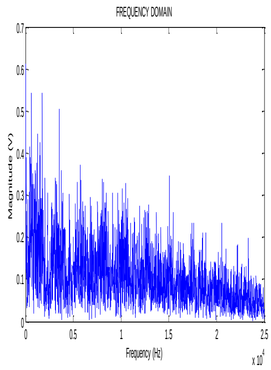


Figure 8: Vibration frequency domain for cast iron (431.13 N)

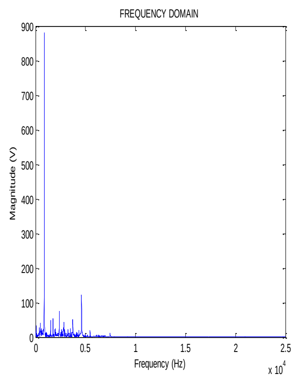


Figure 9: Acoustic frequency domain for Stainless Steel (455.75N)

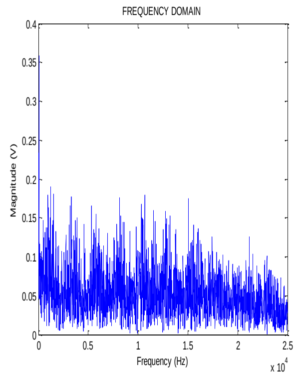


Figure 10: Vibration frequency domain for Stainless Steel (455.75N)

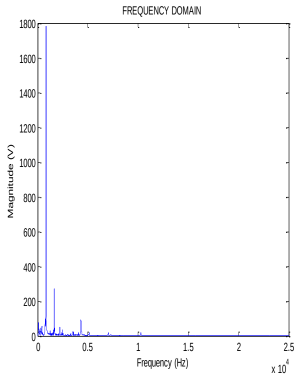


Figure 11 : Acoustic frequency domain for Aluminum (485 N)

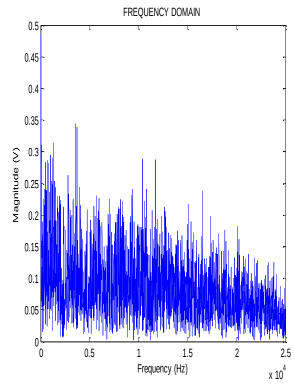


Figure 12: Vibration frequency domain for Aluminum (485 N)

Correlation between Acoustic Signal & Young Modulus

Vibration and acoustic signals that have been filtered using a Z-stem filter algorithm based on the frequency all components in order to remove the unwanted noise. This analysis produced coefficient of MZN which is shown in Figure 13 for vibration of each different material and impact force involved in the experiment.

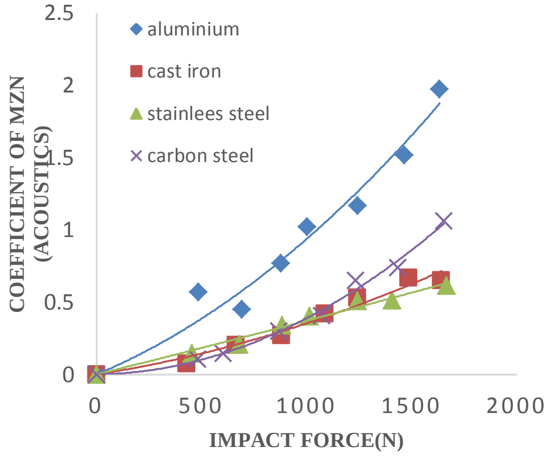


Figure 13: Acoustic M-Z-N Coefficient Vs. Impact Force

From the Figure 13 above, the curve form for each material is quadratic polynomial. The general equation of quadratic polynomial for the curve is $\boldsymbol{y = ax^2 + bx}$. This polynomial quadratic curve is choosen due to the high correlation coefficient, $\mathbf{R^2}$ value which between 0.9681 until 0.9906. The value of correlation coefficient, $\mathbf{R^2}$ of each material is shown in Table 6.

Table 6: Correlation coefficient, $\boldsymbol{R^2}$ for quadratic polynomial acoustic M-Z-N coefficient

Material	Correlation Coefficient, $\mathbf{R^2}$
Carbon Steel S50C	0.9906
Stainless Steel AISI 304	0.9815
Cast Iron FD500	0.9719
Aluminium 6061-T6	0.9681

Table 7 : Equatian for quadratic polynomial acoustic M-Z-N coefficient

Material	Equation for the quadratic polynomial
Carbon Steel S50C	$\mathbf{y = 1 \times 10^{-8}x^2 + 8 \times 10^{-4}x}$
Stainless Steel AISI 304	$\mathbf{y = 4 \times 10^{-7}x^2 + 2 \times 10^{-5}x}$
Cast Iron FD500	$\mathbf{y = 1 \times 10^{-7}x^2 + 2 \times 10^{-4}x}$

Aluminium 6061-T6	$\mathbf{y = 3 \times 10^{-7}x^2 + 2 \times 10^{-4}x}$

Based on Table 7 above, the difference between the equations are influence by quadratic polynomial coefficient, a from the quadratic polynomial equation $\boldsymbol{y = ax^2 + bx}$. This quadratic coefficient was used to get the relation between acoustic signal and Young modulus characteristics. Table 8 show the quadratic coefficient and Young Modulus for each material.

Table 8: Quadatic coefficient and Young Modulus

Material	Quadratic Coefficient	Young Modulus (GPa)
Carbon Steel S50C	$\mathbf{6 \times 10^{-7}}$	213.90
Stainless Steel AISI 304	$\mathbf{4 \times 10^{-7}}$	196.31
Cast Iron FD500	$\mathbf{1 \times 10^{-7}}$	90.05
Aluminium 6061-T6	$\mathbf{3 \times 10^{-7}}$	70.73

Based on the Table 8 above, the material with high Young Modulus will produce high quadratic coefficient. Aluminium 6061 was not consider in this analysis. Among another three materials, the highest Young Modulus will gives the highest value of quadratic coefficient. The experiment proved that Carbon Steel has highest Young Modulus which is 213.90GPa that produced the highest quadratic coefficient which is $\mathbf{6 \times 10^{-7}}$ followed by Stainless Steel and Cast Iron.

3.2 Correlation between Vibration Signal & Thermal Conductivity

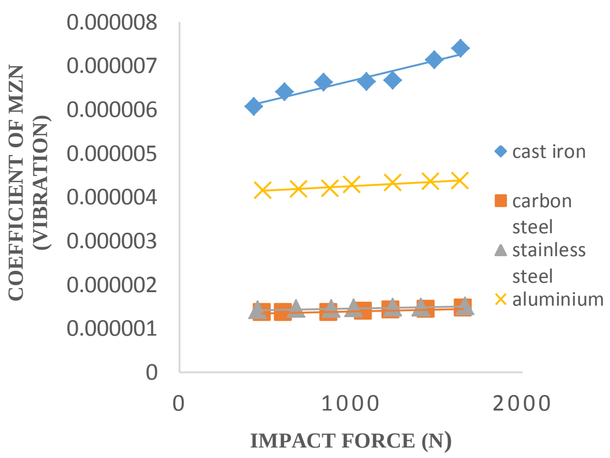


Figure 14: Vibration M-Z-N coefficient Vs. Impact Force

Based on the figure shown, the curve for each material is a linear and the equation is equal to $\boldsymbol{y = ax + b}$. This linear curve is choosen due to the high correlation coefficient, $\mathbf{R^2}$ value which between 0.9082 until 0.9804. The value of correlation coefficient, $\mathbf{R^2}$ of each material is shown in Table 9.

Table 9: Correlation coefficient, $\boldsymbol{R^2}$ for linear vibration M-Z-N coefficient

Material	Correlation Coefficient, $\mathbf{R^2}$
Low Carbon Steel S50C	0.9400
Stainless Steel AISI 304	0.9804
Cast Iron FD500	0.9082
Aluminium 6061-T6	0.9429

Table 10 : Equatian for quadratic polynomial vibration M-Z-N coefficient

Material	Equation for the quadratic polynomial
Low Carbon Stee	$\boldsymbol{y = 9 \times 10^{-11}x + 1 \times 10^{-6}}$
Stainless Steel A	$\boldsymbol{y = 6 \times 10^{-11}x + 1 \times 10^{-6}}$
Cast Iron FD500	$\boldsymbol{y = 9 \times 10^{-10}x + 6 \times 10^{-6}}$
Aluminium 6061	$\boldsymbol{y = 2 \times 10^{-10}x + 6 \times 10^{-6}}$

Based on Table 10 above, the difference between the equations are influence by linear coefficient, *a* from the linear equation $\boldsymbol{y = ax + b}$. This linear coefficient was used to get the relation between vibration signal and Thermal conductivity. Table 11 show the linear coefficient and Thermal conductivity for each material.

Table 11: Linear coefficient and Thermal Conductivity

Material	Linear Coefficient	Thermal Conductivity $W/_{m.}$℃
Low Carbon Steel S50C	$\mathbf{9\times10^{-11}}$	51.01
Stainless Steel AISI 304	$\mathbf{6\times10^{-11}}$	15.49
Cast Iron FD500	$\mathbf{9\times10^{-10}}$	61.01
Aluminium 6061-T6	$\mathbf{2\times10^{-10}}$	160.66

Based on the Table 11 above, the material with high Thermal conductivity will produce higher linear coefficient. Aluminium 6061 was not consider in this analysis. Among another three materials, the highest thermal conductivity will gives the higheststst value of linear coefficient. The experiment proved that Cast Iron has highest thermal conductivity which is 61.01$W/_{m.}$℃ that produced the highest linear coefficient which is $\mathbf{9\times10^{-10}}$ followed by Low Carbon Steel and Stainless Steel.

CONCLUSION

In this paper, the presented observations and discussions have shown the applicability of the developed alternative statistical signal analysis method known as Mesokurtosis Zonal Nonparametric (M-Z-N) to characterize the relevant elastic properties of metallic material. The procedure requires the measurement of transient vibration response and acoustic radiation using microphone and piezo film from the impact-excited specimen by means of impact hammer. The basic analysis function has been applied to extract the frequency components. The main factors affecting the use of raw impact acoustic signal has been eliminated by using an alternative Z-stem filtering technique to remove the noise component. The development of an alternative signal analysis method has been described in detail and the experimental curves of the M-Z-N coefficient for different metallic materials have been plotted to determine the correlation between the M-Z-N coefficient and elastic properties of metallic material. Experimental test of this method on four metallic materials shows only three material have a good agreement between the quadratic coefficients with the elastic properties of the metallic material.

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Determinant of demand for Takaful Cash Waqf

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Keywords: Takaful, Cash Waqf, Consumer awareness, Consumer behaviour, Religiosity

Abstract. The study investigates the relationships between consumer behavior, consumer awareness and religiosity influence on intention to demand for Takaful cash Waqf. The respondents of the study comprise 100 individual contribute as a participant in Takaful/insurance. The result of the study shows that there is a positive relationship between consumer behaviors and religiosity influence on intention to demand for Takaful cash Waqf. The study found that consumer awareness is relatively not significance with determinant demand for Takaful, while consumer behavior and religiosity is strong relationship. The implication from this study shows that there is a need for sharing more information about cash Waqf if Takaful really want to implement Takaful cash Waqf as a product. The study proposes that Takaful should educate the public to increase the awareness of Takaful Cash Waqf.

1. Introduction

One of the potential solutions to the necessity of sufficient fund for public needs is Waqf fund from people's donation. People donate their money as cash Waqf through Waqf institutions. The gathered fund will be then invested in various investment portfolio and the profit of which can be spent for the public necessities. The gained profit will also be used for funding poverty alleviation programs, while the principal of funds will be reinvested in various highly profitable investment opportunities.Therefore, it is important to recognize the possibility that this type of distribution can accomplish the objective of the Waqf in reducing the gap between the poor and rich people; thus, attaining the social economic justice. In addition, poverty attracts the poor to moral decay whereupon short cuts influenced by criminal behavior and moral decay are taken. Most cases of robbery, murder drug trafficking etc. are inherited by the younger generation who are jobless and unqualified *Muslim* youths. Takaful endowment is intended to provide a form of savings to facilitate each individual Muslim raise money gradually to left as the right to practice charity endowment . Policies for takaful products waqf contributed sums of money during the period assigned to the company for storage . Once the policy reaches maturity, the result will either be directed to Islamic charities or depend on the choice of the donor. In this situation , scholars Muhammad Taqi Usmani argues that the endowment model is actually more in line with the basic concept that describes Takaful protection plan based on the relationship of human brotherhood , mutual responsibility and mutual cooperation among the participants. This is so, because the endowment funds are grouped based on initial contribution of capital participants to help Muslims in need. He considers this Waqf fund model as a legal entity in law while Takaful fund certainly has the status of a legal entity. The contribution of nonprofit funds but managed to take car with which contributors are willing to give to members of the community who are less fortunate. Based on previous studies , it was found that the cash endowments managed by the Takaful company made a huge impact on the participants, as the benefits are when the participant dies. Accordingly , the study identified the factors that cause Takaful Waqf received no response and the factors that influence the demand for Takaful products .

The objectives of this study is to examine the relationship between cash Waqf and a demand for Takaful and also to identify factors influencing determinant demand for Takaful.In fulfilling the aims and objectives of this research. The following research questions were developed:

1. What are the purpose of Takaful company implement the Takaful Waqf?
2. Do the Takaful company apply the Waqf model in Takaful plan?
3. How the Takaful Waqf plan (cash waqf) can be attractive to the customer to buy the product of Takaful company?
4. How customer awareness, consumer behavior and religiousity influence the demand for Takaful products?
5. What are the barriers, that may arise in implementing the Takaful Waqf plan?

The researchers hope that the study of this research would throw more light in the understanding of the Takaful and its practice in Malaysia. In order to complete this research helps much in the sense of understanding regarding challenges of the business activities in the real world. This study gave a lot of experience to the researcher especially in the process of primary and secondary data collection to gain information related to this study. The researcher also gains better knowledge of Takaful and getting excellent cooperation and participation from Takaful users in completing this study.

The finding of this study would be of interest to the non-financial institutions, financial institution and academician in Islamic banking area. Since Takaful is one of the most popular mechanism of Islamic banking in Malaysia nowadays, it is timely that this research is made to determine whether Takaful in Malaysia needs a revisited to fulfill the market demand. Further, with the globalization and internationalization of the Islamic financial system, our Islamic Banking and Finance in Malaysia, especially Takaful have to open up to the global market and comply with the international Shari'ah standards for Islamic Banking and Financal practices. It may require us to review our current practice and operation of Takaful for more acceptable practice in view of Shariah compliance issues such as Cash waqf. Thus, this research is also conducted to find the lack in Takaful practices to further improvement in the future.

2.0 Literature Review

A study by Dr.Abul Hassan and Mr.Mohammad Abdus Shahid (2010) state that Waqf is a form of continuous charity (sadaqah jariah). The rewards for this type of charity continue even after the donor's death—for as long as people continue to benefit from the waqf. Waqf refers to gift of money, property or other items of charity, which have been held and preserved for the confined benefit of certain philanthropy. The waqf property is prohibited from being used or disposed of outside of the specific purpose for which it is held. Since the definition of waqf implies a perpetual nature, waqf applies to nonperishable property whose benefit can be extracted without consuming the property itself. This type of properties include real estate, stocks, cash money, books, and hattel.

2.1 Waqf

Waqf is an important vehicle to run the socio economic development. The word waqf (plural awqaf) or in Malaysia the term waqf is spelt as wakaf literally means ‘to stop, to prevent, to restrain’. In English is known as Islamic endowment. All these terms gave the same meaning, which holding and preservation of a certain philanthropy (charity). According to Sadeq (2002) waqf asset cannot be disposed, its ownership cannot be transferred, only its benefits are to be used for the specific purpose(s), which is (are) mainly charitable in nature, and It is a voluntary charity characterized by perpetuity. According to Imam Abu Hanifa, the legal meaning of "philanthropic" waqf is "in charity of the poor or other good objects".

Most research show there are no legal references on specific verses in the Al-Quran that mentioning waqf in specific. Muslims are relying on the Sunnah of Prophet Muhammad (pbuh) and the actions of his companions in practicing waqf. However, there is a verse on charity which carries the practicing of waqf in the following Quran verse:

لَن تَنَالُواْ ٱلۡبِرَّ حَتَّىٰ تُنفِقُواْ مِمَّا تُحِبُّونَۚ وَمَا تُنفِقُواْ مِن شَيۡءٖ فَإِنَّ ٱللَّهَ
بِهِۦ عَلِيمٞ ٩٢

“ Never will you attain the good(reward) until you spend (in the way of Allah) from that which you love. And whatever you spend – indeed, Allah is knowing of it”

(Surah Al-’Imran, 3:92)

This verse had been interpreted by Abu Talha, one of Prophet (pbuh) richest companion. He owned exquisite date garden named Bi’ruha which was in front of the Prophet’s mosque in Madinah. Prophet (pbuh) used to go there and drink from its nice water. When this verse was revealed, Abu Talha went to see the Prophet (pbuh) and declared the Bi’ruha garden as a sadaqah. The Holy Prophet (pbuh) was really happy on hearing him and asked him to sadaqah the garden to his children and relatives”. (Hassan, 1984; Imam Malik, undated, hadith no. 1828).

Succeeding the earlier definition on waqf which hold the concept of charity with the intention of prohibiting any use of disposition of the property outside the specific purposes to which the property is dedicated, in such a way it cannot be inherited or sold. Rininta (2012) in her paper define cash waqf as an amount of money/cash of the founder that to be utilized to fund project which beneficial for the society. The endowed cash used to be invested or loaned out to earn income, and target projects were financed by earned income. The creation of cash waqf is been approved by the four school of thought and must obey the three restrictions of cash waqf, consists of; (1) Irrevocability – founder cannot revoke the sum of waqf money that has already declared as waqf; (2) Perpetually – once the money has been waqf, the mutawalli must ensure the regular and continue support of the beneficiaries; and (3) Inalienability – once cash waqf is created, it cannot be transferable, in any forms of gift, inheritance or any alienation.

Cash waqf is created in the form of movable waqf (money) to establish liquid money in order to finance services and develop waqf property or to support and build an educational institution (schools or universities) or orphanage houses in the name of Allah s.w.t. Cash waqf is usually formed as a financin method to fund a project to be utilised by the public. The waqf will receive cash instead of property or land and will use it for the financing instead of relying on banks or financial institutions. (Magda, 2009)

Types of Waqf

Islamic Endowments are a very honourable practice is encouraged by Islam. It is one of the charitable mechanisms, Waqf quite unique compared to other good deeds such as alms or Zakah as a Waqf property would be in 'hold' it is not spent but rather a benefit, or the return of the trust's endowment can be spent. Begin with solid assets Waqf, currently development is in the form of charitable endowment of cash and part of it will be invested in Islamic financial markets.

Waqf has existed since a long time ago, like time of Rasullullah S.A.W. examples of situations that show waqf act has occurred at that time when the Saidinar Umar r.a gained a land in Khaibar. Saidina went to see Propet Muhammad S.A.W to know what he should do with the land that he got. So Rasullullah told Saidinar, that he can give to others (Zuraidah et. al, 2011). Beside that, in Al-Quran already mention that Waqf institutions are for the humans to do good deeds for the society. Allah decreed:

> *‘O you who have believe, bow and prostrate and worship your Lord and do good – taht tou may succeed”. (Al-Haj 17:77)*
>
> *“Never will you attain the good (reward) until you spend (in the way of Allah) from that which you love. And whatever yuo spend – indeed, Allah is Knowing of it”. (Al-Imran 4:92)*

In Islam, Waqf is a perpetual voluntary charitable act (Maliah, Muntaka) and not compulsory, which is one mechanism in the Islamic economic system to promote equitable and justice distribution of wealth. This form of charity assures the donor a continuous reward in the afterlife for a long as the useful years of the underlying assets remain. Due to importance of waqf in Islamic economy over the past year for socio-economic growth and development of communities especially it has been labelled as the most visible evident of charity in Islam (Maliah, Muntaka).

> *“the waqf contribution to the shaping of the urban space can hardly be overestimated...A major part of the public environment in Islamic towns actually came into being as a result of endowments”, (Osman, 2012).*

Traditionally Waqf in Malaysia is in the form of land, mosque, the grave and religious school and related equipments. Currently efforts are being made to develop waqt lands that have the potential for development. The central government in order to develop and enrich the Waqf has established a translate Awqaf, Zakat and Hajj (JAWHAR) to assist in the co-building endowment at the state level.

Waqf property is managed and operated by the Islamic Religious Council can be divided into two types of waqf like specific waqf and general waqf.

i. General WAQF

The general endowment was an unspecified charitable uses by Waqif. Example B endowed land without expressed their land use. Land endowed that's up to the council to determine the religion of the land use as to be school or ‘bazaar’.

ii. Specific WAQF

Specific Waqf is an endowment that has been defined by the endowment provider. For example, A has endowed a piece of land and determined the use of the land to be used as burial plot or mosque. Therefore, the type of endowment is named specific endowment.

Cash Waqf and conventional endowment

Cash Waqf

The cash WAQF was a special type of endowment which differed from the ordinary real estate WAQF in that its original capital ,asl al-mal or corpus,consisted purely or partially ,of cash (Cizacka, 1998). In addition Magda (2009) mentioned the cash WAQF is a movable WAQF that has been established with liquid money to promote services to mankind in the name of Allah(s.w.t). It is become a trust fund established with money and transferred to an asset to extract its usufruct for the benefit of ummah. Therefore, Magda (2009) concluded the definition of cash WAQF as the confinement of an amount of money /cash from the founder and the dedication of its usufruct, according to founder’s condition(s), perpetuity to the welfare of the society.

Historically, the institution of WAQF had achieved its peak during the Ottoman Sultanate in terms of numbers, assets and the services it was rendering to its citizens ranging from municipal services to education, health, culture and religion. During this time, cash WAQF had also served the role financier, granting loans to people in need of them (Cizacka, 1998). Yayla (2011) mention that in Ottoman era, a son of mutawalli will replace his father for the duty of WAQF management. On the other hand if there are more than one son in the family therefore the most competent was chosen to be the mutawalli and managed the institution. Cizacka, as quoted in Tohirin (2010), also mentioned that cash WAQF has become popular because people without much (immovable) property wish to get the benefits of the WAQF system and the banking system prefers it is easier to handle than property or other endowments.

The legitimacy of cash WAQF has been discussed by Muslim scholars. There is a consensus among majority of Muslims jurist over the recognition of cash WAQF Ibn Qudamah as quoted in Magda (2009) the Hanafi school of fiqh, a disciple of Abu Hanifah, Imam Zufar approved all movable properties to be dedicated as WAQF including the WAQF of dirham and dinar i.e WAQF al-nuqud (cash WAQF). Wahbah al-Zuhaili as quoted in Magda (2009) mentioned with the respect to the other two schools of fiqh, both imams, al Shafe’i and Ibn Hanbal had agreed on the validity of both immovable and movable properties as a subject of WAQF. In Malaysia, Fatwa Committee of the National Council for the Religion of Islam confirmed the legality of Cash WAQF during 77th meeting on 10th to 12th April 2007 under 9th Malaysia Plan (www.e-fatwa.com.my).

Conventional endowment fund

An endowment is a fund that is restricted. A fund that is made up of gifts and bequests that are subject to a requirement that the principal be maintained intact and invested to create a source of income for an organization. Donors may set up an endowment to fund a specific interest; and a nonprofit's governing body may set up an endowment. In any case, an endowment requires that the principal remain intact in perpetuity, or for a defined period of time, or until sufficient assets have been accumulated to achieve a designated purpose.

Charitable endowments are money or property transfers donated to an institution typically assigned for a specific purpose. Endowments are given to museums, colleges, universities, libraries, theaters, hospitals and more. Endowments come in the form of collections such as buildings, vehicles or art and in the form of money. Endowments go beyond discretionary funds. A professorship or chair may be endowed, which means the “charitable funds” finance the position at no cost to the university, allowing critical positions to be filled by an expert(Heather Long). The act of endowment giving is a common practice in the United States and Europe, particularly in areas of education, arts and medicine. Endowments can be set up as charitable funds providing financial support for designated issues, tasks and positions. The endowment is typically managed as a trust, invested so that it continues to make money to pay forward.
Endowments come from private individuals, corporations and governments. An endowment is a charitable donation that continues to give. Endowments fund professorships, department chairs, museum curators, specialists and researchers. Endowments fund archaeological expeditions, in the field research studies, charter schools and more. The history of charitable endowment giving has encouraged the development of liberal arts, education, medicine and more for centuries. An endowment fund is created when a donor or the Board of Trustees specify that a gift is to be invested and only the income earned on that gift may be spent for a specific purpose. The gift amount is referred to as the principal or corpus and is held in a fund that is managed by the Finance Department.

There are two basic types of endowment funds, true endowment and quasi endowment. A true endowment is defined as an endowment in which the donor stipulates that the corpus must be held inviolate and in perpetuity and invested to generate income to be spent for a specific purpose. Funds that are designated as endowment by the governing board of an institution (Board of Trustees) are called quasi endowment. These funds are also invested for the purpose of generating expendable income for a given purpose, but as the funds are internally designated as endowment, the governing board can decide to spend the funds at any time. In some cases, donors will allow for the corpus of their endowment to be spent. This is also categorized as a quasi endowment. To spend the principal of a quasi endowment fund requires Board of Trustee approval or donor authorization.

2.2 Waqf in Takaful

Definition of Takaful

Takaful originates from the Arabic word Kafalah, which means guaranteeing each other. Takaful is generally known as Islamic insurance because the system is based on the concept of social solidarity, cooperation and mutual indemnification of losses of members (Kamarudin et al, 2012). In addition, the Takaful system is perceived as cooperative or mutual insurance, where members contribute a certain sum of money to a common pool. The Takaful system is based on the principles of mutual co-operation and responsibility between participants in a group.

The principle of Ta'wun (mutual co-operation) and Tabarru' (donation) means the risk is shared collectively by participants in the group with the overall objective of eliminating the element of the uncertainty. For example, a group of person who agree to jointly indemnify the loss or damage that may be inflicted upon any of them, out of the fund they donate collectively. Helping each other in the event of misfortune is highly encouraged in Islamic teaching. In the Qur'an, Allah mentioned that:

> "*Help you one another in Al Birr and At Taqwa (virtue, righteousness and piety); but do not help one another in sin and transgression…."* (Al-Maidah:2)

Takaful is a social system that complies with Shariah principles. It is structured into two types; for profit and not for profit. Among the models that can be used are: Mudarabah, Wakalah, Waqf and mixed hybrid model. Takaful as a concept is generally well-understood, but the multiple variants of structure and model, which can differ greatly are less easy to grasp and can represent significant challenges for participants attempting to analyze performance. In this feature, we can see a basic rundown of the various Takaful models and assesses individual features, advantages and challenges.

The application of Waqf fund in Takaful.

i. A hybrid of wakalah and waqf model

The general concept of the Takaful Waqf plan is designed to enable any individual to save regularly with the aim of accumulating a fund that can be left as a donation under the Waqf system. In this model, the shareholders of the Takaful operator will initially make a donation to establish the Waqf fund. The fund needs to be invested in a Shariah-compliant investment, and the returns will be used for the benefits of the participants. The Tabarru' fund from participants' special account also becomes part of the Waqf fund. Based on Waqf principles, the donors (shareholders and participants) would lose ownership rights on their monetary contributions in the Waqf fund. The monies eventually become the property of Waqf fund which can only be used for benefits of all participants.

The shareholders, who act as the owner of the Waqf fund, delegates authority to the operator to become administrator of the fund, whose function among others, include paying claims from the fund. The operator also undertakes the role of investment agent and is entitled to a certain percentage in the investment profit as a performance fee. Generally, there are two types of Waqf model in respect of surplus sharing, namely: First, is Pakistani model, in which the underwriting surplus is returned to the Waqf fund, thus not distributed to either the participants or operator. The second is Commercial Waqf model, in which the terms on surplus sharing are spelt out in the Waqf deed in accordance to the intention of the contracting parties involved in the Waqf arrangement. (Kamarudin et al, 2012).

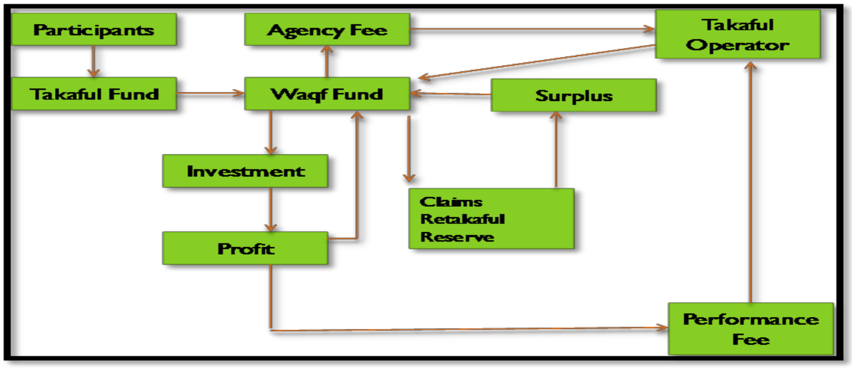

Figure 1: Operation of Wakalah Waqf Model

Source: Kamarudin et al.(2012)

Determinant demand for Takaful cash Waqf

i. Consumer awareness

Consumer awareness refers to the combination of the knowledge of the product purchased by the consumers in terms of its quality (Suraiya et. al, 2012). For example the consumer should know whether the product is good for health or not, whether the product is free of creating any environmental hazard or not etc. Second is the education about the various types of hazards and problems associated with marketing of a product - For example, one way of marketing a product is advertisement through news papers, television etc. Consumers should have proper education about the bad effects of advertisement. They must also verify the contents of the advertisement. Third, is the knowledge about 'Consumer Rights' - This means that, first, the consumer must know that he/she has the right to get the right kind of product. Secondly, if the product is found out to be faulty in some manner, the consumer should have knowledge of claiming compensation as per the law of the land. And the fourth is the knowledge about consumer's own responsibilities- This implies that consumers should not indulge in wasteful and unnecessary consumption.

ii. Consumer behaviour

The term consumer behaviour is defined as the behaviour that consumer display in searching for, purchasing using, evaluating and disposing of products and services that they expect will satisfy their needs (Lawal Bello et al, 2008). Consumer behaviour focuses on how individuals make decisions to spend their available resources (time, money, effort) on Takaful consumption-related items that includes what they buy, why they buy, when they buy it, where they buy it, how often they buy it, how often they use it, how they evaluate it after the purchase and the impact of such evaluations on future purchases, and how they dispose of it(Lawal Bello et al, 2008)

There has been substantial research on consumer behaviour, examining the decision process, and influences upon it, in terms of both brand/store attributes and consumer characteristics. It is believed that the buying process begins with need recognition. Having recognised a need, consumers then search for information about Takaful products that might satisfy the need. Having gathered information, consumers will then evaluate the alternatives, and make a purchase decision. Following purchase will be some form of post-purchase feeling/behaviour, when the decision is assessed. (Kotler.P , 2000)

Two different kinds of consuming entities: the personal consumer and the organizational consumer.

Personal Consumer

 Buys goods and services for his or her own use, for the use of the household or as a gift for a friend. The products are bought for final use by individuals, who are referred to as end users or ultimate consumers.

Organizational Consumer Includes prof it and non-profit businesses, government agencies (local, state, national) and institutional (e.g. schools, hospitals, and prisons), all of which buy products, equipment, and services in order to run their organizations.

iii.

Religiosity.

Religion is an important cultural factor to study because it is one of the most universal and influential social institutions that have significant influence on people's attitudes, values and behaviours at both the individual and societal levels (Syed Shah Alam et al, 2011). In general, the religions practiced in a society influence the emphasis placed on the material life, and the attitudes toward owning and using goods and services. Religious traditions may prohibit the use of certain goods and services, for example, Islamic teachings forbid its followers from drinking liquor and eating pork, while the veneration of the cow among the Hindus excludes them from consuming beef. Religion also affects the sanctity of different acts and rituals, for example, by officially prohibiting the use of certain method of contraception.

The islamic jurist have long decided that life insurance is prohibited because it is considered as a hedge against the will of Allah and containts elements inconsistent with the Islamic principles. National fatwa committee in 1972 which declared life insurance as a fasid Muamalat (illegal economic transaction) and is forbidden because of its incocsistency with Islamic principles due to the existence of Gharar, Riba and Maisir.

Shariah compliance reflects the purity factor of transactions and as such, enables Muslims to fulfill their religious obligations by choosing Takaful as their preferred or alternative insurance product. A religious restrictions are likely to have historically held back the growth of insurance use within the Muslim population, but Shariah compliant takaful insurance addresses this; it said “as a result, we expect stronger future growth rates for takaful versus conventional products in the region.”

A study conducted by Alsalih, A. and Christopher J. Napier (2012) entitled “Consumer Preferences for Takaful and Conventional Insurance: A UK-Saudi Arabia Comparison” had come out with result that the most important factor to the respondents was customer care, with Islamic credibility (that is, compliance with Shari’ah) coming a close second.Less obvious is the influence of religion on the consumption of goods and services that are not directly restricted by religious laws. In such a case, religious values shape an individual's emotional experience, cognition and psychological well-being, which in turn, affect the consumption choices that consumers make.

2.3 Theoretical Framework and Hypotheses

Referring to the objectives of the study and the literature review provided, modified theory of planned behavior was used as a basis of constructing the framework. Figure 1 shows the study's theoretical framework with *demand for Takaful* as the dependent variable and consumer awareness, consumer behaviour and religiousity and as the independent variables.

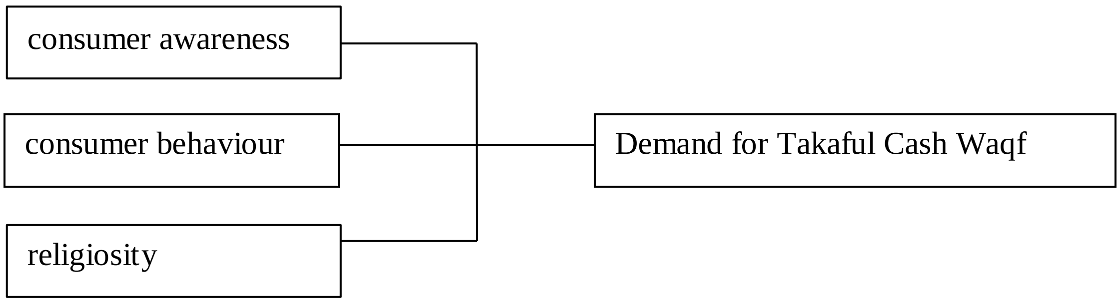

Figure 2: Theoretical Framewor

Hypotheses Development

Based on the framework, the following is the hypotheses:

H_1 : There will be positive relationship between customer awareness and demand for Takaful cash Waqf.

H_2 : There will be positive relationship between consumer behaviour and demand for Takaful cash Waqf.

H_3 : There will be positive relationship between religiousity and demand for Takaful cash Waqf.

3.0 Methodology

The research methodology for this study is qualitative nature. The problem statement is derived from the literature review. Due to the scarcity of relevant resources, the research can be best described as an exploratory study. This study employs semi structured interviews and distributed the questionnaire to collect data and information from key players of Takaful industry and the Takaful participant. Specifically, the data was gathered by structured interview using questionnaires. The questionnaire was classified into three sections. The first and second sections comprised ten items devoted to five items of respondent profile and five items for general information of respondent. The third section consisted of twenty three items involved determinant demand for takaful.

For the purpose of this research, one sample from Takaful company were interviewed using structured questionnaire. The interviews were carried out at Syarikat Takaful Malaysia Bhd. Meanwhile, 100 of participant Takaful/insurance in Klang Valley selected for the distribution of questionnaire. A structured survey instrument, that is questionnaire was used to limit the variation while interviewing and increase the reliability and validity of responses obtained (Sekaran, 2013).

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The questionnaires were designed to obtain the primary data. Details of measurements are as follows:

1. For the demographics age, gender, race, education level, occupation and income, the respondents were asked to tick the respective boxes groupings.
2. For independent variable , consumer awareness, consumer behaviour and religiousity and dependent variable, demand for Takaful cash Waqf, the respondents were asked to rank from 1 being strongly disagree to 5 being strongly agrees based on Likert scale.

Data Analysis

Hierarchical multiple regression will be used to determine whether the independent variables is significant or not with dependent variable.

4.0 Data Analysis and Results

Profile of the Respondents

The sample description will be analyzed and reported which later will be followed with the analysis findings which will give responses to research objectives.The subjects used in this study were Takaful/insurance participants in Lembah Klang, Malaysia. Table 1 shows the information on sampling and return rates of the questionnaires sent to the Takaful/insurance participant. Of the 100 questionnaires distributed, mailed, all is return to researcher in a response rate of 100 percent.

Questionnaires distributed	100
No. of Responses	100
Incomplete Responses	0
Usable Responses	100
Responses rates	100%

Table 1: Summary of Response Rates

The majority of the samples are in the age group of between 21 years to 51 years old above. Between them they have 6 above 51 years olad or 6 percent of the respondents. It can be seen the respondents' gender is dominated by female , which is 68 percents. In terms of reducation level, majority were have bachelor degree, 23 percent and, followed by master degree with 25 percent. For the participant income, among respondent got income between RM2001 to RM3000 have much contribute in Takaful/insurance and government sector is much contribute , 69 percent. Summaries of the demographic data collected from the Takaful/insurance participant are shown in Table 2.

Demographic of	Characteristics	Frequency	Percentage

Respondents

1. Age	21 to 30 years old	17	17
	31 to 40 years old	38	38
	41 to 50 years old	39	39
	51 and above	6	6
2. Gender	Male	32	32
	Female	68	68
3. Education level	Secondary school	5	5
	Diploma	17	17
	Bachelor degree	23	23
	Master Degree	25	25
4. Occupation	Government sector	69	69
	Private sector	31	31
5. Income	Less than RM2000	3	3
	RM2001-RM5000	62	62
	RM5001-RM8000	32	32
	Above RM8000	3	3

Table 2: *Frequencies and Percentage of Respondents' Profile*

General Information in Takaful cash Waqf

Takaful is generally known as Islamic insurance because the system is based on the concept of social solidarity, cooperation and mutual indemnification of losses of members (Kamarudin et al, 2012). While, *Waqf* as we know is one of the charity claimed in Islam. It is a *maaliah ijtima'iyyah* kind of worship that has a strategic and determining position for the Ummah's welfare development. Below are the statistics from this study employed.

Respondent Characteristics		N	Percentage (%)
Having any Takaful/insurance policy		100	100
	No	0	0
Type of policy	Takaful	54	54
	Insurance	23	23
	Both	23	23
Current policy	Protection plan	79	79
	Investment link/saving plan	53	53
	Education plan	32	32
Knowledge about Takaful Cash Waqf	Yes	17	17
	Seminar	11	11
	Lecture	8	8
	Written announcement	14	14
	Takaful/ insurance agents	81	81
	Web of Takaful/insurance company	26	26

Table 3: General Information

Waqf is a term used in the Koran signifying the special obligation for Muslims to give some of their possessions to charity. Table 3, shows the study found that majority respondents' fits all the descriptions and definitions obligation in Takaful contribution as 100 percent from all respondent contribute in Takaful/insurance. It is surprised that majority of these respondent choosing Takaful compare to the insurance conventional which contribute to 54 percent, where as 23 percent from them has involve in Takaful and conventional. From that, majority participant taken the protection plan (79 percent) and followed by saving/investment plan (53 percent) then for education plan is 32 percent. It can be conclude that some of respondent take more than one plan provide by Takaful operator or isurance company.

From the 100 questionnaire distributed, it found that the total respondent have knowledge about Takaful cash Waqf very poor, only 17 percent and the 83 percent of respondent, they dont know actually what is Takaful cash Waqf. The explanation will continue future when look at into determinant demand for Takaful Cash Waqf. Besides, we also discuss how they know about Takaful. The result finding shows that 81 percent of the respondent know from Takaful/ insurance agents , followed by 26 percent from web page of Takaful/insurance company and others from seminar 11 percent, written announcement 14 percent and only 8 percent from lecture given. This might be the reason of the highest occupancy rates 69 percent in a government service and they more expose to general knowledge, seminar and talk organize by their agency.

Reliability Analysis

Reliability Statistics

Cronbach's Alpha	N of Items
.928	22

Table 4: Reliability Statistic for Dependent Variable and Independent Variable Questions

Table 4 shows the result on Reliability test for Dependent Variable and Independent Variable Questions. The result indicates that the Cronbach's Alpha for five (22) items measure is 0.928. Regarding the rule of thumb of Cronbach's Alpha coefficient size, the result shows that this dependent variable is excellent. It can be conclude that the questionnaire for dependent variable and independent variable is reliable. Table 4 below shows the Cronbach's alpha for each variable.

Factor analysis was also done for the independent variables consumer awareness, consumer behaviour , religiousity and dependent variable, demand for Takaful. Using the varimax rotated component analysis, all items selected had factor loadings greater than 0.50

However following the recommendations of David et.al (2011), cross loaded items was included if their primary loading was theoretically justifiable and if their elimination would have a negative impact on the reliability of the construct. The main purpose of applying factor analysis was to assist in reducing the number of variables to a more meaningful and interpretable factors (Sekaran, 2013).

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Item Statistics	Mean	Std. Deviation	N
1. Takaful company is better than conventional insurance company	3.94	.776	100
2. Takaful company offers more beneficial products (i.e Takaful Waqf)	3.71	.715	100
3. Takaful policy is affordable to purchase	3.88	.756	100
4. Takaful products are more simple and easy to understand	3.74	.661	100
5. Takaful company advertise more of their products and services (i.e General and Family Takaful)	3.51	.835	100
6. It is important to have insurance policy based on Shariah compliant.			
7. I choose Takaful product because free form riba'	4.18	.783	100
8. I am really confident with Takaful agent to giving information about Takaful product.	4.17	.911	100
9. Takaful company ready to help me whenever I encounter any problems (i.e involved accident)	3.68	.723	100
10. Takaful company give more rewards to me as a token of appreciation			
11. I can get more benefit from company when something happen to me (i.e Waqf fund)	3.62	.749	100
12. I always read book and magazines to improve knowledge about Islam	3.24	.854	100
13. I spend time trying to grow in understanding of my religious and faith	3.60	.667	100
14. I am happy making financial contribution to my religious (i.e Cash Waqf)	3.92	.720	100
15. I enjoy taking part in activities of my religious organization (i.e : Cash Waqf)	3.96	.680	100
16. I really confident with Takaful as a Waqf management centre	4.10	.732	100
17. By contribution in Takaful Waqf, I hope that economics condition of the Ummah will be improved	4.05	.672	100
18. I intend to take up Takaful product with the same conventional and Takaful provider	3.64	.746	100
19. I will take up Takaful product with any Takaful company	4.03	.731	100
20. I am interested to find out more information about Takaful product (i.e Takaful Waqf)	3.30	.905	100
21. I am interested to participate in Takaful policy in the future (either General or Family Takaful)	3.62	.814	100
22. Have a Takaful product will balance my financial and give more peaceful in my daily life	3.80	.791	100
	3.74	.836	100

Table 5: Reliability Statistic Cronbach's alpha for each variable.

Pearson correlation of coefficient interpretation

Correlations

		Total DV	Consumer Awareness	Consumer Behavior	Religiosity
Demand Takaful Product	Pearson Correlation	1	.504**	.595**	.571**
	Sig. (2-tailed)		.000	.000	.000
	N	100	100	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6 : Correlation

Table 6 shows Pearson coefficient for the relationship between demand Takaful product with consumer awareness, consumer behavior and religiousity. All of the variables have positive relationship and correlation. For the relationship between demand Takaful product and consumer awareness, the result shows is 0.504 and according to rules of thumbs, it has moderate relationship. Next, for the relationship demand Takaful product and consumer behavior, the result is 0.594 and according to rules of thumbs, it also has moderate relationship. Last but not least, for the relationship between demand Takaful product and religiosity, the coefficient size is 0.571 and according to rules of thumbs, it has moderate relationship.

4.1 Multiple regression analysis

Regression Analysis, R Square (R^2) : Result

The coefficient of determination, R^2, provides information about the goodness of fit of the regression model. R^2 is the percentage of variance in the dependent variable that is explained by the variation in the independent variable. If R^2 is near to 1, most of the variation in the dependent variable can be explained by the regression model. In the other word, the regression model fits the data well. On the other hand, if R^2 is near to 0, most of the data variation cannot be explained by the regression model.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.657[a]	.432	.414	.46444

a. Predictors: (Constant), TotalIV3, TotalIV2, TotalIV1

Table 7 : Model Summary Regression Output

Table 7 above shows the R square are 0.432, indicating that 43.2 percent of the variance in the dependent variable was significantly explained by the three independent variables. 43.2 percent of variance or changes in customer awareness are affected by the consumer awareness, consumer behavior and religiosity. Meanwhile, the remaining 56.8 percent still cannot be explained. In other word, there are other additional variables that are important in explaining the dependent variable.

Regression Analysis, ANOVA[b] : Result

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.742	3	5.247	24.327	.000[b]
	Residual	20.707	96	.216		
	Total	36.450	99			

a. Dependent Variable: TotalDV

b. Predictors: (Constant), TotalIV3, TotalIV2, TotalIV1

Table 8 : ANOVA Output

Table 7 shows that ANOVA Output with the significance value = 0.000, which means the null hypothesis is rejected and this model is statistically significant. For the F-statistic, the result shows 24.327. ANOVA gives information about the model as whole.

Regression Analysis, Significance : Result

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.706	.361		1.957	.053
Consumer Awareness	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Consumer Behavior	.407	.115	.392	3.547	.001
Religiousity	.358	.109	.339	3.267	.002

Table 9 : Coefficient Output

From table 9, the Beta Column under standardized coefficients shows the strength of Correlation Coefficient of each independent variable. The table of Coefficient Output shows there is two significance values for the independent variable. As can be seen, the main factor influence to the dependent variable is the consumer behavior with the value of 3.547 since the p value is 0.01< 0.05.

Besides that religiosity variable also shows the factor influence on demand Takaful product since p value is 0.02<0.05. However, consumer awareness is relatively not significance with determinant demand for Takaful.

The findings of this preliminary study have answered all the research questions. There is a set of questions that has been disclosed. The consumer behaviour factors among factors of determinant demand for Takful cash Waqf is extensively high. It also for the religiosity satisfaction factors among factors of determinant demand for Takful cash Waqf is high. While, the consumer awareness factors are extensively low. It shows that, there are relationships between two independent variables except for insignificant correlation between determinant demand and consumer awareness. It will explained that many respondent/people out there still do not have knowledge about cash Waqf itself. It is conclude that only interaction effect of religiosity and consumer behaviour would give an influence to determinant demand of Takaful especially for Takaful cash Waqf.

5.0 Discussion, recommendation and conclusions

Takaful concept endowment has halted its application in the Malaysian takaful system since 2001 but still applicable in Pakistan and South Africa . While the concept of waqf takaful is less popular in Malaysia , but there are some advantages or privileges of the application of the concept of Waqf in the Takaful system can be seen . Among them is such as provide an opportunity for muslims to contribute even with low volume, participants are also eligible for a charitable donation to charity. From this, Takaful Waqf will implement the participants intend to contribute a total contribution even if the participants had died prior to maturity and helping the less fortunate**.** Compared with the Wakalah and Mudharabah model, Waqf model is a non-profit model that operates entirely from contributions from participants who sincerely want to contribute to the less fortunate. Waqf model suitable to work with Takaful concept as it was developed with the aim to benefit and mutual benefit . This is in accordance with the teachings of Islam that demands its followers help each other not only in terms of energy, even in terms of grant money and property.

A special charity forum can be created and deployed to brighten the symbols raising charity. This forum can be composed of any of the parties aiming directly contribute ideas and energy to help the institution of Waqf existing scholarly discussion sessions, seminars, writing and so on. This method can build more awareness of Ummah about Waqf. Waqf institutions continuity of this forum can help with donations of funds or other resources that more parties will be involved enhancing the eminence of Waqf in Malaysia. This forum may be one avenue to get feedback from the public, bring the parties responsible, creating a communications network and much more. The move to set up this forum and efforts should be continued establishment to grow faster Waqf institutions in the country.The federal government has set up a special department to coordinate activities Waqf in Malaysia, the Department of Awqaf, Zakat and Hajj (JAWHAR) since 2004 role is to plan, coordinate, develop and monitor the strengthening Waqf institutions in Malaysia. Many efforts have been undertaken, but it is still possible upgraded from time to time. The government should provide more funds to enable JAWHAR role with the provisions of publication of the advertisement or relevant documentary charity in electronic media / print and billboard as well as having more academic programs.

For the benefit of Waqf Institutions study, Waqf institutions have limited resources to carry out comprehensive and can be backed .The public higher education institutions , particularly the received numerous grants , with many experts in various fields can discuss with the institution of Waqf to produce studies that can benefit the charity institution directly. There are also many students in Master's and PhD that can be utilized to carry out the study that can help the industry. A tentative work planned to be carried out to ensure that this proposal can be realized. This activity will be a win-win activity in the higher education institution where higher education institution entrusted to make study , conduct study as targeted and waqf institutions they have input very useful to be applied by them to provide the best service to the public. Support and input in a new perception of the institution of Waqf is it is imperative that every effort is being and will be implemented by the authority Trust charity institution can manage to do it in a responsible and effective. This role can be played by the government, private sector, community leaders, individual and others. Confidence and trust should be given to charity institutions and play to uplift the "Waqf and Sadaqah" in Islam can be implemented with effectively and efficiently. Any attempt to improve on weaknesses are moved and any suggestions and constructive ideas from all parties is necessary in the interest of the nation.

The results of this study should be interpreted in light of several limitations. Firstly, the data collection only taken by small sample from the population. Thus, this research much focus on the government staff. Nowadays, many big of company done their Community Service by doing Waqf donation and also people got income with self employed. The data given by respondent not accurate to show or answer the questionnaire. Perhaps, in the future, the determinant factors influence on contribute Takaful could be analyzed within a duration of three years in order to see any improvement on involvement consumer in cash Waqf donation true Takaful because of the economics situation nowadays and the new era of information technology. Finally, the demand factors should also consider other possible dimensions such as external/ environmental factors that might provide interesting results for future research. The increasing of the contribution of Waqf donation should also be deliberated by a subjective measure.

Respondents were asked about their determinant factors for Takaful and Cash Waqf contribution using survey questionnaire method. Factor analysis was used to identify factors that are related to the determinant demand for Takaful. The results of the factor analysis show that the items used in the survey split into distinct factors, describing religious, consumer awareness and consumer behaviour.

In conclusion , the property can be Waqf not limited to only immovable property , movable property even as cash can also be endowed through Takaful Endowment . This Waqf based Takaful model also indirectly encourage the community to compete to practice charity deeds are indeed required in Islam and member benefits to recipients donated and develop Islam and Muslims. Although Takaful endowment model is no longer applicable in Malaysia due to its non -profit that makes it less popular, but the advantages of its use are many.

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MOTIVATION OF EMPLOYEE ON INCOME ZAKAH PAYMENT

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Abstract. The beginning of the 1980's witness a new approach of collecting Zakah on monthly bases in some of the Muslim countries such as Sudan, Pakistan and Malaysia. At first, this creates an ambiguous situation amongst Muslim scholars as to its legitimacy, since the payment of Zakah is known to be given on annual bases and once it reaches the nisab (the minimum assigned). Recently, a consensus has been given amongst contemporary Muslim scholars that it is lawful to pay the Zakah on monthly basis. Malaysia is one of the countries that start implementing Zakah deduction on monthly basis through participating in as cheme called the Salary Deduction Scheme. The main objective of this study is to identify the possible factors that influence individual participation in Zakah contribution and to assess the role of formal institutions in motivating Muslims participation in Zakah contribution.

Fields of Research: Shariah, Zakah, Income

1.0 Introduction

Zakat on income is an Islamic levy on personal income derived from sources or activities where labours are involved. It includes professional fees, labour compensation, salaries, wages, bonuses, grants, gifts, dividend income and the like (Nur Barizah, 2008). It is one of the emerging issues in Zakat. Zakat is a term used in the Koran signifying the special obligation for Muslims to give some of their possessions to charity. Etimologically, *zakah* is derived from an Arabic word meaning “to purify” and “to grow” (Mannan, 1986). Various opinions are provided by jurists worldwide not only with regards to its zakatability, but also other areas related to it including its assessment, rate as well as deductions allowable, among others (Nur Barizah & Abdul Rahim, 2007b). It follows that states in Malaysia also, due to Malaysian legal framework, has been practicing this Zakat on income in numerous ways. There are not only different rulings among states, but also different extent of its enforcement and implementation. In essence, this diverse setting has led to Zakat, and in this context, Zakat on income becoming a relatively less-regulated institution at least in Malaysian environment (Muhammad Akhyar & Nur Barizah, 2009).

This paper attempts to examine the views of academicians on the factors influencing their payment behavior towards Zakat on income. The important contribution of this paper is that those factors identified could be useful in planning or strategizing for the future of Zakat system in the country. This paper begins with the source of regulation of the zakatability of income. It then provides a brief discussion on the current practice of Zakat on income in Malaysia. Then, it proceeds with a review of prior studies conducted related to

Zakat on income. The research question is then presented to frame the readers' mind in understanding the topic under study, followed by research methodology. Finally, it discusses the results of the study.

Background of problems

Zakat on Income: Issues and Development

The issue of Zakat ability of income has been a long debatable issue. Muslim scholars worldwide have various opposing opinions with regards to it (Nur Barizah, 2008a). Some scholars agree on its Zakat ability, others object, while the rest remain silent. This section will provide some insights on the arguments provided by these scholars. Among the reasons given by those who believed in the zakatability of earned income are the following (Al Qardawi, 1973 in Kahf, 1999); (1) texts of zakatability are general and inclusive, (2) excluding this category of income is not consistent with levying Zakat on agricultural income as well as on other kinds of zakatable income, (3) exempting this category results in relieving many of the rich persons while low income merchants and others are charged Zakat, and, (4) charging this category Zakat is consistent with the general priniciples of justice at large and its application to Zakat is specific.

The evidence that earned income is Zakatable are available from various sources of regulation, including Al-Quran, As-Sunnah and Qiyas. There are many Quranic verses which mentioned about the Zakat ability of income indirectly. The first evidence in the Quran which emphasis that income is one source of Zakat item is in the second chapter (Al-Baqarah), verse 267:

> "*O ye who believe! Give of the good things which you have honorably earned and out of that which we bring forth for you from the earth of the fruits of the earth which we have produced for you*". (Note 1)

This text of the Zakat ability of wealth is general and thus inclusive of many types of wealth, including income. We might conclude that Allah mentions that it is obligatory upon every Muslim to spend (pay Zakat) on everything which he earned and therefore in this context those who earn income are subjected to Zakat.

The second Quranic-based evidence on Zakat on income comes from the same chapter, (Al-Baqarah), verse 141:

> "*…..and give its due on harvesting it*".

Although this verse specifically refers to Zakat on agriculture produce, it can also be applied to salaries and the like, since it does not explicitly exclude other types of earned income.

Besides those Quranic verses, the Prophetic tradition also have provided indirect evidence that income earned should be zakatable. Prophet complements the above Quranic verse in his sayings:

Narrated by Abu Burda:

"Every Muslim has to give in charity." The people asked, "O Allah's Prophet! If someone has nothing to give, what will he do?" He said, "He should work with his hands and benefit himself and also give in charity (from what he earns)."(Note 2)

From this Hadith, we can see that Prophet Muhammad indicated that one of the main purposed for securing a job in this world is to produce certain amount of income in order for Muslims to be able to perform his or her Zakat obligation. Nevertheless, despite the above evidences, there are a number of scholars who argued that income is not liable for Zakat. Among them who supported this opinion are Imam Abu Hanifa, Imam Malik and Imam Syafie (Al-Qardawi, 1999).

However, according to Al-Qardawi, who is one of the proponents of Zakat on income, Muslims are not bound by any of these scholars' rulings. The argument provided by these scholars, among others, is that the Prophet never practiced nor charged Zakat on income. With regards to this issue, the proponents of Zakat on income argued that fiqh on Zakat is subjected to changes due to the rapid development of human's socio-economic environment (Nur Barizah, 2008b). Accordingly, through studying the modern conditions, Islamic jurists need to find the most appropriate rules that benefit the general public (maslahah 'ammah) as well as those that serving justice ('adl) as long as the derived rule does not contradict any Divine rule (Nur Barizah, 2007a). In particular, Zakatable items during the life of the Prophet PBUH (Note 3) are slightly changing from the Zakatable items after the time of Prophet PBUH. It should be noted that at the time of the Prophet PBUH the people of Madinah used to hold wealth in the forms of livestock, gold and silver (whether used as money, jewellery or raw materials and final products of the jewellery industry), trade inventory and agricultural land (Muhammad Anwar, 1995). There was relatively very little investment in human capital which generates high labor income (Kahf, 1999, p.29).

Similarly during the period of the first four successors (caliphs) of the Prophet PBUH, there were no important changes in the pattern or structure of wealth and income although a tremendous increase in their quantity took place (Kahf, 1999). However, later on, in the period of the following caliphs, there occur some structural changes in the forms of wealth and income, which consequently provide some precedent on the Zakat ability of income for the modern wealth. The first to take zakat on salaries was Caliph Muawiyah, during the Umayyah Caliphate (Nur Barizah, 2008b).

Other includes Caliph Umar ibn Abdul Aziz, where he deducted the due Zakat from the salaries of soldiers engaged by the State for defending boundaries. He also deducted the due Zakat from periodical grants and prizes assigned to his citizens, whereby he deducted twenty-five out of each thousand (units of money) (i.e. 2.5%), prior to handing them to the citizens. This, in the modern context, can be equated to the Zakat payment through salary deduction. In essence, this means that both caliphs acted upon their individual point of view in this regard without the companies and righteous predecessors opposing them. Looking at the history, it proves that the fiqh of Zakat need to be reconsidered because of changing circumstances (Zarqa, 1984, in

Kahf, 1999). At present, Zakat on earned income is still considered as a contemporary issue and still debatable among Muslim scholars (Kamil, 2005).

Despite the fact that there are an increasing number of its proponents, there are still some who strongly adhere to the traditional fiqh view who believe otherwise. Kahf (1999) in expressing his concern on this issue commented that these scholars, who are the opponents of Zakat on income, do not take the principle of justice into consideration. He argued that the majority of wealthy people in any contemporary Muslim society are virtually exempt from Zakat while the poor agricultural population is charged at a greater rate. He boldly relates this scenario to the inherent flaws in today's Ijtihad and thus calls upon the role of specialized scholars in reconsidering this issue. It follows that Zakat must be levied on salaries and professional income on the grounds that this satisfies the principle of justice in distributing the burden of supporting the poor among the rich regardless of the form their richness may take (Al-Qardawi, 1999; Kahf, 1999; Nur Barizah, 2008a).

Collectively total collection for the whole Malaysia has amounted to more than RM1.9 Billion in 2012. The average increase in the Zakat collection is more than 10% annually. Total collection throughout Malaysia is of RM1.91 billion in 2012. From this latest statistical data collected by Malaysian Zakat Center throughout Malaysia, we can see nowadays that many Muslims are really concern about their wealth to be cleansed to get more barakah in dun'ya and hereafter.

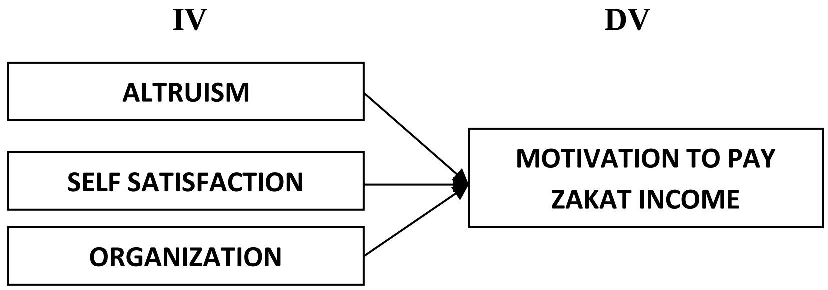
With the increasingly total amount year by year in Malaysian Zakat Center, it seems that many Muslims take this as religious obligation, as well as the right of Allah, Zakat should be performed foremost and prior to other tax payment. From this positive growth, does Muslim peoples in Malaysia really want to fulfill their obligation as a Muslim? Or they have a strong feeling to help an asnaf from their Zakat paying? Or maybe they have a very good organization or company that motivate them to pay Zakat? In brief, from the preceding discussion, we can see that the Zakat ability of income is an ever contentious issue, in theory and practice alike. Hence, it is on this premise that this study is conducted in order to explore the reasoning behind the different belief and their behaviour there on. With all this questionable factors that motivates employees, this research want to find out what are the exactly factors which really motivated them in paying Zakat t.

1.3 Aim and objectives of the study

The objectives of this study are to:

1. explore the relationship between demographic characteristics and Zakat payment;
2. explore the significant factors those influence people's intention to pay Zakat, and
3. analyze factors that influence Zakat on income payers prefer to pay Zakat on income

1.4 Conceptual Framework



1.5 Research Question

The objective of this study is to identify the possible factors that influence individual participation in Zakat contribution and to assess the role of formal institutions in motivating Muslims participation in Zakat contribution. The research questions formulated to guide this study are as follows:

1) What factors that influence individual participation in Zakat contribution?
2) Which factors influence most? Are they motivated by religious factor alone since it is obligatory? Or, are there other "worldly" factors that motivate them?
3) What are the factors that influence their interest and non-interest?

1.6 HYPOTHESIS

HYPOTHESIS 1:

Ho : There is no significant relationship between the altruism and motivation to pay zakat.

HA : There is a significant relationship between the altruism and motivation to pay zakat.

HYPOTHESIS 2:

Ho : There is no significant relationship between the self satisfaction and motivation to pay zakat.

HA : There is a significant relationship between the self satisfaction and motivation to pay zakat.

HYPOTHESIS 3:

Ho : There is no significant relationship between the organization and motivation to pay zakat.

HA : There is a significant relationship between the organization and motivation to pay zakat.

2.0 LITERATURE REVIEW

2.1 Theoretical Reviews

2.1.1 Basic Issues of Zakah

Zakah is one of the five pillars of Islam. It is basically the material as well as spiritual form of worship. This aims to purify ones wealth and positions by giving a certain amount of money to the poor and the needy from the net income exceeding *nisab*3 after a complete year. The term is derived from the Arabic verbal root, which means to increase (*al-namaa*), to purify (*al-taharatu*) and to bless (*al-barakatu*). By paying it, one is aspiring to attain blessing, purification and the cultivation of good deeds (Hafidhuddin, 2002). Al-Qardawi (1993) states that zakah obligation is mentioned in the holy Quran thirty times, in twenty-seven of which zakah is associated with prayers. Furthermore, the term zakah in the Quran appears in many verses as *sadaqah*4, *infak*5, and *haq*6. This obligation is also emphasized in large number of the Prophet's sayings (*hadits*). He says that zakah, apart from being an obligatory worship (*ibadah mahdlah*), also has socio-economic objectives (*al-ibaadah al- maaliyah al-ijtima'iyyah*). Therefore, it has a very important position in the development of the Muslim community.

The Zakat recipients have been classified into categories (*ashnaf*). These groups are based on the Surah al-Taubah: 60. These zakah recipients comprise the poor (*fuqara*), the needy (*masakin*), zakah collectors (*amilin*), those newly converted to Islam (*muallaf*), ransoming of slaves (*riqab*), the debtors (*al- gharimin*), in the cause of Allah (*fi sabilillah*), and the wayfarers (*ibnu sabil*) (Aziz (1993).

2.1.2 Factors Influencing Zakah Payment

It has been emphasized that in Islam, the primary motivation of paying Zakat should be the worship factor *(ta'abudi)*. Muslim fulfils their duty in preserving common good by paying Zakat h, giving the needy and so forth simply because he or she is the servant of Allah S.W.T. In fact, the word Zakat is repeated 32 times in the Qur'an, showing its importance and obligation (see, for example, Qur'an 2:43, 83, 110, 277). Muslims obey the religious obligation of Zakat because it is one of the five pillars of Islam. Zakat is an important instrument for social justice as it leads to increased prosperity in this world and also leads to increase of religious merit (*thawab*) in the hereafter as its payment purifies individuals from sins (Muhammad Abdul Aziz, 1987). Al-Quran states that, "*Take from their property alms (sadaqa) in order to purify them that is from sins*" (Quran 9:103). Thus obtaining purification is another motivation for paying zakah (Muda, M., Marzuki, A., dan Shaharuddin, A., 2006). Reinstein (2006) also supported worship factor as one of the main motivations that contributes to the compliance of Zakat, sadaqa (donation) and other prosocial behaviour (*ijtima'i*). They further claimed that the act of paying Zakat could be an indicator of high level of *iman* (faith). This is because individual compliance towards religious obligation to pay Zakat is highly dependent on his belief of the religious teaching.

Apart from the worship factor, the individuals' level of understanding in Islamic principles will also motivates people to comply the injunction to pay Zakat. This is supported by Aidit (1998) and Qardawi (1998) who suggested that non-compliance behaviour towards obligation to pay Zakat is mainly due to the level of *iman* in individuals towards religious obligation. Reinstein (2006) also identified that religious belief as an important determinant of religious and secular giving. Lunn *et. al* (2001) also agree that one's religious belief has the impact on giving. Chavez as cited in Lunn *et. al*. (2001) notes that "the relationship between religious giving and involvement in religious giving is unambiguously positive". It is also worth mentioning that Lunn et. al. (2001) concluded that those who attend church regularly and the conservative Presbyterian will give more.

In addition to the worship factor (*ta'abudi*), the studies examining the individual participation in *ijtima'i* contribution could be investigated through various perspective namely exchange theory, social exchange theory and organization. Exchange theory, which was first developed by economists, assumes that all transactions involve some kind of exchange and things are exchanged for their economic or utilitarian value. This value could be actual material return or tangible benefits that accrue to the individuals or symbolic value such as pleasure or satisfaction that an individual derives from the act of giving. Based on economic theory, social exchange theory was developed. This theory assumes that exchange takes place on the basis of the symbolic value attached to things (Ekeh, 1974).

Both economic and social views assume that individuals engage in exchange to achieve certain important goals that are extrinsic to the behaviour they engage in. Extrinsic or instrumental rewards are a motivation source when individuals believe that behaviour will lead to certain valued outcomes, utilitarian or symbolic. Within social exchange theory (e.g. Bagozzi 1975, 1978, 1979) exchange is anchored in self-interest and individuals attempt to minimize their costs to obtain the most profitable outcomes. However, limits exist with regard to profit, beyond which individuals do not pursue self-gain. When these western theories are applied to Zakat activities, it is assumed that individuals contribute to Zakat because he or she gets some tangible benefits, rewards or self satisfaction from the activity.

2.1.3 Previous Studies

Although Islam is one of the most common religions in the world, there have not been many studies about the potential of Zakat and factors affecting it, let alone in Indonesia. Most studies take place in highly Muslim populated countries where Zakat plays a crucial role in the country's financial system such as in Pakistan, Bangladesh, and Malaysia.

One of the researches conducted concerning the factors influencing zakah payment is done in Malaysia by Muhammad Muda, Ainulashikin Marzuki, and Amir Shaharuddin. The study which is entitled "Factors Influencing Individual Participation in Zakat Contribution: Exploratory Investigation", has the objective to investigate the factors affecting individual decisions in Zakat contribution hence, provide an understanding of their motivation. In this exploratory study, factor analysis has been used to provide insights into the underlying structure of motivating factors of individuals participating in Zakat. The data was collected using a survey questionnaire that was designed based on past studies from both the conventional as well as Islamic literature. The main dimensions were characterized by religious, utilitarian, self satisfaction and organization factors. In the analysis, the factor extraction method used was the principal component method with the Varimax rotation. Principal factor analyses identified five factors that explained 67.32 percent of the variance in the dataset and these were the “altruism”, “level of faith”, “self-satisfaction”, “organization”, and “utilitarian” factors. Further analysis indicates that the “altruism” has the highest score followed by faith (iman), self satisfaction, organization, and utilitarian factors. Based on the sample surveyed, the initial findings indicate that participation in Zakat is not only motivated by religious factor but also self satisfaction and organizational factors. The implication is that the efforts to raise the level of Zakat activities should emphasize not only the religious aspect but also the individual’s and organizational dimensions. This may have significant impacts on the personal financial planning and development of Islamic economic systems in general.

Shirazi (2006) attempts to estimate the resource shortfall and potential Zakat collection for poverty elimination in the low-income Muslim countries. He estimates the resource shortfall by utilizing the international poverty lines (under USD 1 and 2) headcount and poverty gap index estimated by the World Bank. Potential zakah collection has been estimated by utilizing Kahf's definitions of Zakat able items with some modifications. The paper finds that some of the low-income Muslim countries can meet their resource gap under USD 1 international poverty line with potential Zakat collection. However, other countries, mostly belonging to Africa, cannot meet their resource shortfall from their potential Zakat collection.

2.1.4 Supporting Theory

In Rasulullah period, zakatable wealth was classified limited to: (1) gold and silver (2) certain plants (3) livestocks (4) trading goods (5) and properties found on earth soil (Nurhayati & Wasilah, 2009). Through time, period changes, trading progress rapidly, and transactions become more complex (Qardhawi, 2004). Then Muslims sense it was needed tore-examine classification of zakatable wealth.

Base on that contemporary income such as salary must also classified as zakatable wealth, moreover Ahmad dan Wahid (2005) add wealth in zakat on income may widen with other income with moderate amount like income from stocks, bonds, dividens, and other investments. Many amil also includes zakat on income as option for zakat that they collect. With zakat on income could be paid monthly have some of zakat collectors also made other monthly option for zakat maal. Also many muzakki had been using many differents existed ways to fullfil zakat obligation. Here are preferences available for zakat maal:

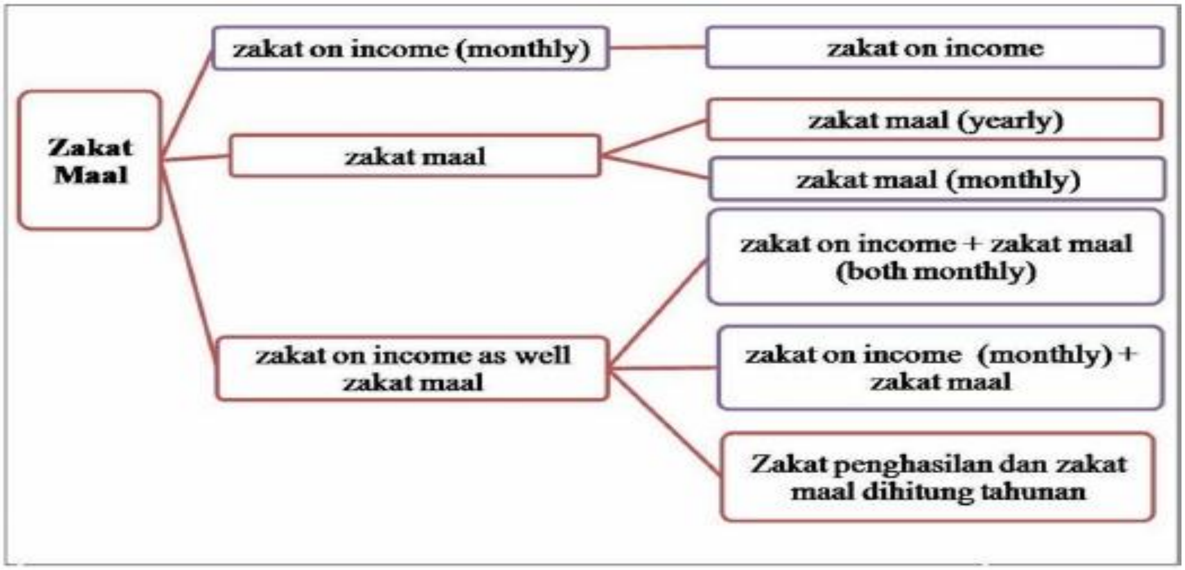


Figure 1: Options available on zakat maal

For examine preference model, this research use exogenous variables perception and motivation. Nurhadi (2004) uses the perception and motivation as a factor in determine the preferences of the people in his research. These factors are chosen with the assumption of various theories such as Icek Ajzen and Martin Fishbein (1980) in Brehm and Kassin (1990) who proposed theory of Reasoned Action:

1. Human generally do things in ways that make sense
2. That humans consider all available information, and
3. Explicitly or implicitly, human take into account the implications of their actions.

Schiffman and Kanuk (Tania, 2011) defines perception as the process for individuals to sort, organize, and interpret stimulus into a form that has meaning and make sense. Deloizer(Tania, 2011) also has a definition of perception as an impression that someone had a picture of a set of stimulation, the perception arose from events that occurred at that time and learning from these experiences. Khairina AR (2009) conducted a study on the effects of motivation, perception, learning, and personality to a decision selecting a product by netizens.

Khairina using a regression model using a Likert scale statements to see any relationship with the dependent variable and influence factors. This study concluded that four factors have significant influence on the buyer's decision. On the perception factor is defined as a set of information processing stages that will stimulate samples to purchase decisions. Perception uses 5 variables as indicators: explanation, attention, understanding, acceptance, and retention. In this study, the author will only use variables understanding and acceptance because the two variables are the most attributable for preferences.

Abu Bakar and Rashid (2010) examined the factors that may influence the behavior of pay Zakat in Malaysia by using a sample of academics at the International Islamic University of Malaysia (IIUM). They used some previous studies such as Ali, Mohd et al (2003), Kamil(2005), Hairunnizam et al. (2005), and Nur Azura et al. (2005) researchs as the basis in determining factors for their test. All of these studies was examine the factors that were anticipated could be influential in the behavior of Muslims against the zakat on income, with using multivariate logistic regression analysis in assessing the significance of these factors. Researchers in those fourth studies to use the logical considerations and seek the truth of the significance of the factors that they tested. The conclusion in the Abu Bakar research was age, gender, income level, and education level were affect fullfilness of Zakat on income, the same results obtained for the four studies Abu Bakar used.

There is also Young, Marzuki, and Shaharuddin (2006) in which they examined the factors that influence individuals motivation to pay Zakat on income. This research uses explanatory investigation. The data used is survey using questionnaire with Likert scale. This study used principal-components analysis (PCA) which will identify influential factor in the statistical treatment of data. Conclusions that they generate was not only religious motive but also personal satisfaction influence someone for paying zakat on income. Other factors they get are (1) Altruism, (2) Faith, (3) Self-satisfaction, (4) Organization, (5) Reward. The five factors above will be use as exogenous variables for motivation.

3.0 RESEARCH METHODOLOGY

3.1 Sample

Based on past studies from both the conventional as well as Islamic literature, a questionnaire was constructed for use in the study. The population used were the Muslim office employees and work in GSB, UKM. Sampling in here because they are supported by Malaysia's as largest pool of expertise with doctoral qualifications in business, management and accounting, as well as industrial experience with various types of jobs and income has to offer. With a variety of types of jobs and income would make the decision a person will be different from one another.

3.2 Data collection

Researcher distributed the questionnaire to the 30 respondent. The questionnaire is divided into three sections Section A related to respondent knowledge and understanding about Zakat income. Section B is a questions regarding factors that influence motivation of employee on zakat payment. These 20 items were based on four dimensions which are altruism, self-satisfaction and organizational factors. And finally, the last for section C, asked for demographic variables that include gender, age, employment sector, highest academic qualification and monthly income. This information was deemed necessary for study in order to determine how demographic classifications affect the motivation to participate in Zakat contribution. The respondents answered the indicated their agreement pertaining to the statement along the Likert of "1" to "5", whereby "1" indicates "strongly disagree" and "5" a "strongly agree". Meanwhile, there are 29 questions need to be filled up by respondents for this survey.

In gathering the primary data, the respondents fill in a questionnaire. The main topics required to be in the questionnaire are such as; four factors motivating the respondents in paying Zakat income: altruism, self-satisfaction, organization.

The explanation of each factors are given below:

a. Altruism

Altruism is a factor related to how religious beliefs or moral values influence individual to participate in Zakat. Altruism is the motivation with the ultimate goal of increasing the welfare of one or more individuals other than oneself. Items related to altruism factor are:

i. Rights of poor and needy
ii. To show gratitude
iii. To get blessing from Allah
iv. Increase level of piety
v. Cleanse one's wealth
vi. To help poor and needy
vii. Sense of guilt

b. Self satisfaction

They are individually satisfied from the act of giving Zakat. They feel happy paying Zakat, they are responsible society, generous and believe that they could also motivate others to participate in Zakat contribution. Items related to Self satisfaction factor are:

i. Zakat improves Muslim economic condition
ii. I am a socially responsible person
iii. I am happy to pay Zakat
iv. I am generous
iv. I like to be an exemplary

c. Organization

Items related to organizational factor are:

i. Availability of zakah collection center

ii. Various services provided to facilitate zakah activity
iii. Availability of payment facility
iv. Convenient payment system
v. Confidence in zakah collection center
vi. Salary deduction facility
vii. Services offered by zakah collection center
viii. Satisfactory service
x. Information on collection and distribution is transparent
ix. Professionally managed
iix. Influenced by zakah advertisement
iiix. On-line payment facility

3.3 Data Analysis

For the data analysis, researcher using the SPSS to carry out the factor analysis for motivation of employee on Zakat payment objectives.

4.0 RESEARCH FINDINGS

4.1 INTRODUCTION

Finally the data gathered will be analyzed in this chapter. The sample description will be analyzed and reported which later will be followed with the analysis findings which will give responses to research objectives. As mentioned in the earlier chapter, the descriptive analysis, correlation and multiple regressions will be carried out to further analyze and conclude on the relationship of the variables. In this chapter answers of the research objectives could be reached.

There are three sections contain in this set of questionnaire whereby Section A is about related to general information about zakat on income. Meanwhile, questions in Section B. factors influencing motivations of paying zakat on income have been created purposely to examine which factor has influenced customers more to motivations of paying zakat.In Section C, questions regarding respondent profile. All together, there are 26 questions need to be filled up by respondents for this survey.

4.2 SAMPLING RESULTS

4.2.1 Data Collection and Data Entry

As mentioned in the earlier chapter, the data were gathered from primary and secondary data. Primary data was gathered primarily from sample population of 30 Muslim office employees and work in GSB, UKM, Malaysia. From the target sample size of 30, the researcher managed to get administered questionnaire to 30 which 100% sample size.

4.2.2 Profile of the Respondents

Before analyzing the data and answering the research objectives, it is suggested that the analysis on respondents profile is done and below are the details of the profile.

Respondent Characteristics		N	Percentage (%)
Gender	Male	11	36.7
	Female	19	63.3
	TOTAL	**30**	**100**
Age	21-30	7	23.3
	31-40	19	63.3
	41-50	4	13.3
	51 and above	0	0
	TOTAL	**30**	**100**
Educational	Diploma	2	6.7
	Bachelor Degree	20	66.7
	Master Degree	8	26.7
	TOTAL	**30**	**100**
Occupation	Government Servants	24	80.0
	Private Sector	4	13.3
	Self-employed	2	6.7
	Other	0	0
	TOTAL	**30**	**100**
Gross monthly income	Less than RM2,000	2	6.7
	RM2,001- RM5,000	11	36.7
	RM5,001-RM8,000	16	53.3
	Above RM8,000	1	3.3
	TOTAL	**30**	**100**

Table 4.1 Profile of Respondents

Most respondents are between 31 to 40 years old when almost half (43%) comprises from that group, followed by 21% from 21 – 30 years old while only 4 respondents is above 41 - 50 years old . This situation might result from the respondent that are already working and GSB, UKM itself as a center of knowledge for corporate entity consists of postgraduate students. The majority of respondent comprises of 24 (80%) who is government servant, 4 (13.3%) in private sector and 2 (6.7%) is self employed. From here we will confirm knowing that 6.7% are not contributed in Zakat paying. Although there are 28 out of 30 students who is paying Zakat, majority of respondent get a salary between RM5001 – RM8000 is more than half (53.3%), while 16 (36.7%) own a salary between RM2001 – RM5000. Remaining get less than RM2000 is 6.7% and above RM8000 is 3.3%. In addition to that, data also shows that those respondents are male (36.7%) while a female is more than half (63.3%). For the most interesting part, majority of respondents are a Bachelor Degree holder (66.7%), have a Masters Degree (26.7%) and with a Diploma is 6.7%.

4.2.3 General Information in Zakat

Zakat as we know is one of the five pillars of Islam. It is a *maaliah ijtima'iyyah* kind of worship that has a strategic and determining position for the Ummah's welfare development. Below are the statistics from this study employed.

Respondent Characteristics		N	Percentage (%)
Paying the Zakat Income	Yes	27	90
	No	3	10
	TOTAL	**85**	**100**
Year: Paying the Zakat Income	Less than 1 Year	5	16.7
	1 year – 3 year	6	20.0
	More than 3 year	19	63.3
	TOTAL	30	**100**
Instrument Pay the Zakat Income	Salary deduction every month	14	46.7
	Walk in counter every month	2	6.7
	Walk in counter every year	14	46.7
	TOTAL	**30**	**100**
Get Information	Seminar	4	13.3
	Lecture/religious knowledge	18	60.0
	Written announcement	1	3.3
	Web Lembaga Zakat	7	23.3
	TOTAL	**30**	**100**

Table 4.2 General Information

Zakat is a term used in the Koran signifying the special obligation for Muslims to give some of their possessions to charity. Etimologically, *zakah* is derived from an Arabic word meaning "to purify" and "to grow" (Mannan, 1986). The study found that majority respondents' fits all the descriptions and definitions obligation in paying zakat as 90% from all respondent paying the zakat income. It is surprised that majority of these respondent has already paying zakat for more than 3 years which contribute to 63.3%, where as 20% from them has paying for 1 to 3 years and 16.7% for less than 1 year. This is very good because it shows that everyone now knows their obligations in completing their 5 pillar in Islam. For the instrument method how they pay Zakat, we get the same percentage for the respondent made a salary deduction every month and walk in counter every year to pay their Zakat contribution. The percentage is 14%, remaining 6.7% is goes to who walk in to counter to pay zakat every month. From the data gathered, it was found that most respondent like to have a lump sum paying contribution every year and also they liked to make it more easier and simple by deducting their contribution from their salary account. This is more easy and simple as refer to them. Besides, we also discuss how they know about Zakat. The result finding shows that 60% of the respondent know from lecture or religious knowledge, followed by 23.3% from web page of Lembaga Zakat and others from seminar 13.3% and only 3.3% from written announcement. This might be the reason of the highest occupancy rates 80% in a government service and they more expose to general knowledge, seminar and talk organize by their agency.

4.3 MEASUREMENT SCALE
4.4
4.3.1 Validity Tests

To ensure that the construct measures what it is supposed to measure, an assessment of validity is required. However in this study the construct used has been tested for its validity as was discussed in previous chapter. Moreover, a pretest has been conducted to check the questionnaire wording, timing and also questions sentiments.

4.3.2 Reliability Tests

A survey instrument is considered reliable if its repeated application results in consistent scores. (Hair, 2007). Therefore since the instrument has been tested for its reliability, it is required to retest its reliability for the different variables and objectives. The reliability test has been done using SPSS to measure reliability of instrument using Cronbach Alpha Coefficient. Below is the reliability statistics for the mentioned variables. Noted that the rule of thumb about Cronbach Alpha coefficient size is 0.6 to ‹ 0.7 is moderate and $\geq$0.9 is excellent.

Variables	Item	Cronbach's Aplha
Altruism	6	0.851
Self-Satisfaction	5	0.680
Organization	5	0.354
Motivation	4	0.924

Table 4.3 Reliability Analysis

Factors influencing motivations of paying zakat on income was measured by 20 items with four sub variables; altruism, self-satisfaction, organization and motivation. These variables exhibited coefficient Cronbach Alpha of 0.85, 0.68, 0.35 and 0.92 respectively. Altruism exhibited 0.85 coefficients from 10 items, 0.8 Coefficient size means that the items have relatively high internal consistency and its very good reliability of instruments. For self-satisfaction which uses five items exhibited 0.68 coefficient value, still good reliability. For organization which consist five items the coefficient value is 0.35 gives a meaning for unacceptable consistency item and finally motivation factors exhibited 0.92. 0.92 reliability coefficient is an excellent reliability. Thus it is concluded that the instruments used (questionnaire) is a good combination and significantly reliable to measure the construct.

4.4 DESCRIPTIVE STATISTICS

ITEM	MEAN	STANDARD DEVIATION
Altruism	4.7667	.50779
Self-Satisfaction	4.5600	.44381
Organization	4.1533	.47759
Motivation	4.6917	.70308

Table 4.4 Descriptive Analysis; Mean Score

The mean ranges from 4.15 to 4.77 and the standard deviation is less than one (<1) meaning that the respondents are very consistent in their opinion. The above table is about mean score for each question in Section B. It can be explained through the above table that most respondents have high level of understanding about factors influencing motivations of paying zakat on income. However the standard deviation not more than one shows that there is a little variability in their opinion and not so close to the sample mean.

The 5-point scale bring a few identification as follows:

Scale Point	Description	Level
5	Very Confident/Very Extensive/ Strongly Agree/ Very Satisfied	Extremely High
4	Moderately Confident/ Extensive/ Agree/ Satisfied	Very High
3	Neutral/ balance/ Neither Agree Nor Disagree	Middle
2	Moderate Unconfident/ Disagree/ Dissatisfied	Very Low
1	Very Low Unconfident /Strongly Disagree/ Dissatisfied	Extremely Low

Table 4.5 Description Level

This 5-point scale is divided into 4 categories. As three (3) being the neutral or represents the neutral opinion such as either agree or disagree, four (4) is representing moderately confident, extensive, agree or satisfied or show a high level of opinion towards an idea. The highest level; extremely high represented by five (5) which bring a very confident, extensive, agree and satisfied towards certain idea according the questionnaires. However the low level represented by two (2) which neither means moderate unconfident, disagree nor dissatisfied. The least level neither is extremely low which means very low confident, strongly disagree nor dissatisfied.

4.5 PRELIMINARY FINDINGS

4.5.1 Altruism Level

When the score mean for Altruism Level is 4.77, it indicates that the level of altruism is slightly high.

Item (Altruism)	Mean	Standard Deviation
i. I believe zakat on income is a religious obligation	4.9000	.30513
ii. I am eligible to pay zakat on income	4.5667	.97143
iii. I believe that in part of my wealth, some of it is the rights of the poor and needy	4.7333	.63968
iv. I believe that with paying zakat I can cleans on my wealth	4.8000	.61026
v. I want to show my gratitude with Allah	4.8000	.66436
vi. I feel sense of guilty if im not contribute Zakat Income	4.8000	.66436
Mean score (5- point scale)	4.7667	.50779

Table 4.6 Score Mean of Altruism

Item one (1) '*I believe zakat on income is a religious obligation'* shows the highest mean of six (6) with mean 4.9 and standard deviation 0.3 that most respondents are very consistent with their believe on income is a religious obligation. Item 4 to 6, *'I believe that with paying zakat', 'I want to show my gratitude with Allah' and 'I feel sense of guilty if im not contribute to Zakat Income'* exhibited the second highest mean of six (6). Thus the respondents are confident with their believe that with Zakat they can cleans wealth, show gratitude to Allah s.w.t and they feel guilty of not contribute on Zakat income. The standard deviation of 0.6 shows that the respondents are consistent in their opinion regarding Zakat. Most respondents are confident in their altruism level. A 5-point scale with mean score of 4.78 is considered high level of altruism level.

4.5.2 Self Satisfaction Level

Item (Self-Satisfaction)	Mean	Standard Deviation
i. I am socially responsible person	4.5667	.56832
ii. I am happy to pay zakat	4.8333	.46113
iii. I am generous	4.4333	.67891
iv. I like to be an exemplary	4.2667	.86834
v. By paying zakat, I hope that economics condition of the Ummah will be improved	4.7000	.70221
Mean score (5- point scale)	4.5600	.44381

Table 4.7 Mean Score of Self Satisfaction Level

Most respondent agree with the second item; '*I am happy to pay zakat*'. It exhibits the highest score with 4.83 score mean and 0.46 standard deviation. It shows that most respondents are very consistent with their feelings that with fulfill their obligations of Zakat this gives them self satisfaction. The second highest item is *'by paying zakat, I hope that economics condition of the Ummah will be improved'*. It shows that the respondent are consistent with their opinion with regards to their satisfaction on Zakat paying in economics condition of the Ummah will be improved. The lowest mean score is the four item with a question; '*I like to be an exemplary*'. This question exhibits score mean of 4.27 with 0.89 standard deviation which means less consistency compared to the highest score mean but still consistent. Overall mean score is 4.56 with 0.44 standard deviation. This shows that the respondents are extremely consistent with their opinion and have high level of self satisfaction level.

4.5.3 Organizational Level

Item (Organization)	Mean	Standard Deviation
i. The governments allows zakat paid to be claimed as tax rebate	4.1333	1.16658
ii. I really confident with zakat collection center	3.9333	.90719
iii. The management of zakat institution to help needy is transparent	3.8000	.88668
iv. I believe that zakat is an effective mechanism for wealth distribution	4.3667	.85029
v. The facility is provided to pay zakat (e.g. salary deduction, internet banking)	4.5333	.62881
Mean score (5- point scale)	4.1533	.47759

Table 4.8 Mean Score of Organizational Level

The highest score mean of 4.53 is for the five item which measures the facility is provided to pay zakat (e.g. salary deduction, internet banking). It is then followed by 4.3667 score mean of items measuring the level of believe zakat is an effective mechanism for wealth distribution. It seems that that most respondents have high level of understanding about general knowledge of paying Zakat. The lowest score means is resulted from the management of Zakat institution to help needy is transparent a mean score of only 3.8 is recorded. This would imply that respondents level of understanding for such knowledge were moderate.

4.5.4Motivation Level

Item (Motivation)	Mean	Standard Deviation
i. I intend to pay zakat without any coercion	4.7667	.50401
ii. I believe that the punishment in hell	4.7667	.77385
iii. l believe that if I pay more on zakat I will get more on income	4.5333	.93710
iv. Zakat income will balance my financial and give more peaceful in my daily life	4.7000	.83666
Mean score (5- point scale)	4.6917	.70308

Table 4.9 Mean Score of Motivation Level

There are four items manipulated to measure the factor of motivation level of paying zakat on income. The mean score for this construct is 4.69 averaged by the highest 4.76 mean by the question; ‘ *I intend to pay zakat without any coercion and I believe that the punishment in hell?’* Other items have been exhibited much similar score of 4.7 and 4.5 mean. All this would imply that most respondents have high level of understanding about general knowledge of paying Zakat.

4.6 CORRELATIONAL ANALYSIS

As discussed earlier, there are four basic concepts in relationship; presence, nature of relationship, direction and strength of association. Statistics are used to determine whether there is a statistical linkage or association between the variables.(Hair, 2007) Correlation is used to measure the relationship and association of two variables.(Tasir, 2003). Correlation coefficient measures the degree of covariation between two variables. If they are linked together, therefore covariation is exhibited whereby one variable consistently and systematically changes in relative to another variable. As far as relationship is concerned, the presence of the relationship is measured through statistical significance value. As the interval scales of collecting data are used, Pearson correlation is best used to measure the linear association between two metric variables. A Pearson correlation measure is used to determine the degree of association of two variables that are at least of interval level (Black, 2006). Pearson correlation will also measure the correlation coefficient which ranges from -1.00 to +1.00 with zero representing absolutely no association between variables (Hair, 2007).

The direction of association can be judged through the correlation coefficient value. Positive value represents that the direction is positive (+). Scatter diagram can also be used to display the covariation between two variables visually.

4.6.1 Motivation and Altruism

The correlation analysis was performed on two variables; motivation and altruism.

		Altruism
Motivation	Pearson Correlation	.810**
	Sig. (2-tailed)	.000
	N	30

** Correlation is significant at the 0.01 level

Table 4.10 Correlation Analysis of Motivation and Altruism

The r value is 0.810** shows the significant value of a relationship between motivation in Zakat and altruism. It means that is high correlation, marked relationship. According to the table 4.10 above, there is high correlation between motivation and altruism with marked relationship between those two variables. The positive value of 0.810 shows that the direction is positive. The value of 0.810 is nearer to 1 meaning that the relationship is so strong. The larger the value, the stronger the relationship.

4.6.2 Motivation and Self-Satisfaction

It is crucial to see the importance of motivation. Therefore an analysis of impact of motivation and self-satisfaction has been carried out. To see the relationship between both variables, a correlation analysis was performed.

		Self-Satisfaction
Motivation	Pearson Correlation	.650**
	Sig. (2-tailed)	.000
	N	30

** Correlation is significant at the 0.05 level

Table 4.11 Correlation Analysis of Self-Satisfaction

The above correlation table shows how the two variables related. The Pearson correlation is 0.650** and it is significantly correlated at 0.05 levels. According to the table 4.11 above, there is moderate correlation between motivation on paying zakat in GSB, UKM and self-satisfaction with dependent relationship between those two variables.

4.6.3 Motivation and Organization

Through literature it was found that marketing and entrepreneurial orientation are increasingly recognized as important to high organizational performance. (Drucker, 1985 Kanter, 1989).

		Organization
Motivation	Pearson Correlation	.300
	Sig. (2-tailed)	.108
	N	30

** Correlation is significant at the 0.01 level

Table 4.12 Correlation Analysis of Motivation and Organization

To further investigate the impact of motivation on paying zakat in this case, correlation is performed and output shows that the relationship between motivation and organization is insignificant. The r value is 0.3 and this figure shows that there is a significant relationship between motivation of paying Zakat and organization. This positive direction of relationship has shown a small but definite relationship of association. The significant value 0.236 is greater than 0.05 which determines the insignificant relationship between motivation of paying Zakat and organization. Thus organization factors does not influence the motivation on paying Zakat in GSB, UKM. Below is the table that summarizes all the correlation coefficient related to the objectives of this study. The ultimate goal for this analysis is to see the relationship between the variables. All variables are correlated and related to each other.

Relationship	R	Sig.
Motivation and Altruism	0.810**	0.000
Motivation and Self Satisfaction	0.650**	0.000
Motivation and Organization	0.300	0.108
Altruism and Self Satisfaction	0.666**	0.00
Altruism and Organization	0.428	0.018

Self-Satisfaction and Organization	0.420*	0.021

** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

Table 1 Summary of Correlation Analysis

4.7 MULTIPLE REGRESSION

Regression is a technique used to predict the value of a dependent variable using one or more independent variables. There are two types of regression; simple and multiple regressions. Multiple regressions involve many variables, one dependent variable and many independent variables.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.827[a]	.684	.648	.41713

a . Predictors: (Constant), Altruism, Self Satisfaction, Organization

b . Dependent Variable; Motivation

Table 4.22 Model Summary of Multiple Regression

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9.811	3	3.270	18.796	.000[b]
	Residual	4.524	26	.174		
	Total	14.335	29			

a . Predictors: (Constant), Altruism, Self Satisfaction, Organization

b . Dependent Variable; Motivation

Table 4.23 ANOVA(b) of Multiple Regression

The multiple regression coefficient (R) for the relationship between the set of independent variables and the dependent variable is 0.827 which would be characterized as very strong using the rule of thumb that a correlation greater than 0.8 and less or equal to 1 is strong. R^2 is 0.684, the independent variable altruism (X_1), self satisfaction (X_2), organization (X_3) account for 68% of total variation in the dependent variable (motivation of paying zakat) and 32% of the variance in the dependent variable is unexplained by the independent variable. F statistic of 18.796 for the overall regression relationship is probability level = 1.8796 > 1.00 indicates relatively significant relationships.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.970	.902		-1.075	.292
	Altruism	.972	.210	.702	4.640	.000
	Self-Satisfaction	.351	.239	.221	1.468	.154
	Organization	-.138	.183	-.094	-.752	.459

b . Dependent Variable; Motivation

Table 4.24 Coefficient of Multiple Regression

The final table is the coefficient of each of the variables. From the equation, it is found altruism and self satisfaction have positive relationship towards motivation of paying zakat in Graduate School of Business, UKM. It shows that an increase in altruism and self-satisfaction would improve the motivation of paying zakat. In the other hand, an organization have a negative correlation to motivation of paying zakat.

The Beta shows the relative importance of the variables such as a change of one standard deviation of altruism will change 0.702 standard deviation in perceived motivation of paying zakat and a change of one standard deviation in self-satisfaction will produce a change of 0.239 in standard deviation of motivation of paying zakat. The significant relationship to dependent variables is seen through perceived business success that depends on the significant value with 95% confidence level. It is found that only interaction effect of altruism would give an influence to motivation of paying zakat. (Sig. = 0). Therefore there is a statistically significant relationship between altruism effect of motivation of paying zakat. It is also found that altruism would be the main predictor of motivation of paying zakat.

4.8 DEMOGRAPHICAL ANALYSIS

a) Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
	Male	11	36.7	36.7	36.7
Valid	Female	19	63.3	63.3	100.0
	Total	30	100.0	100.0	

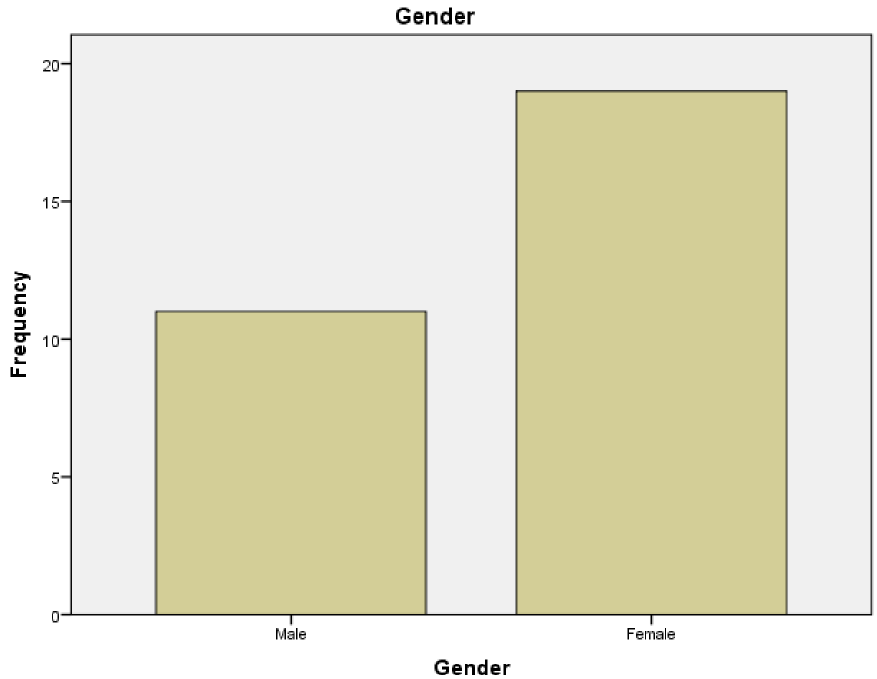
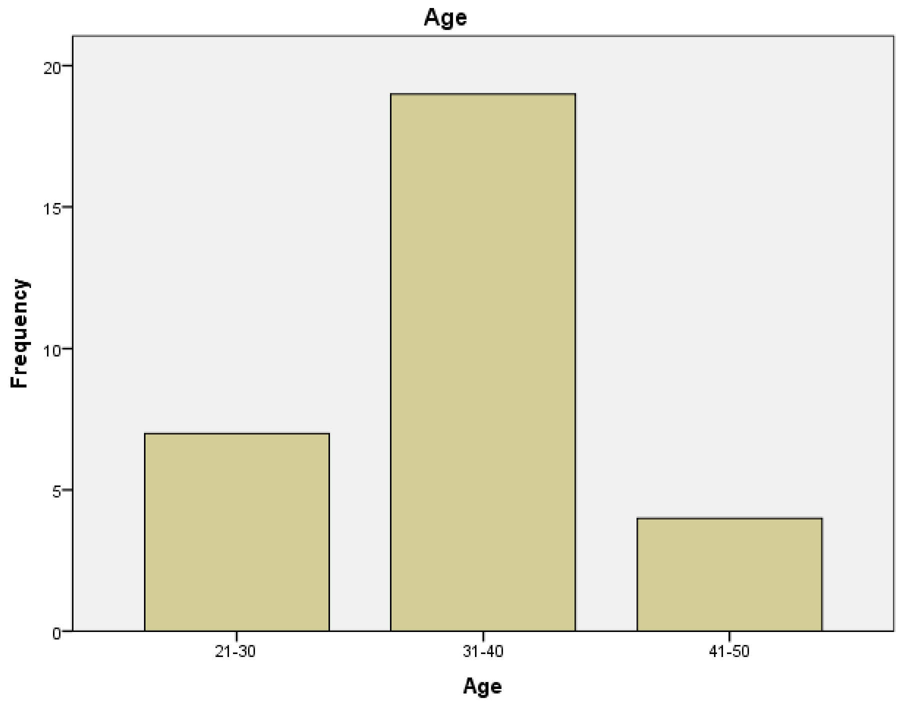


Figure above show the number and percentage of the gender‟s respondents. From the total of 30 respondents chosen, a total of 11 respondents were classified as male, which represented 36.7 percent and the remaining number was female which represented 63.3 percent with 19 respondents.

b) Age

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-30	7	23.3	23.3	23.3
	31-40	19	63.3	63.3	86.7
	41-50	4	13.3	13.3	100.0
	Total	30	100.0	100.0	

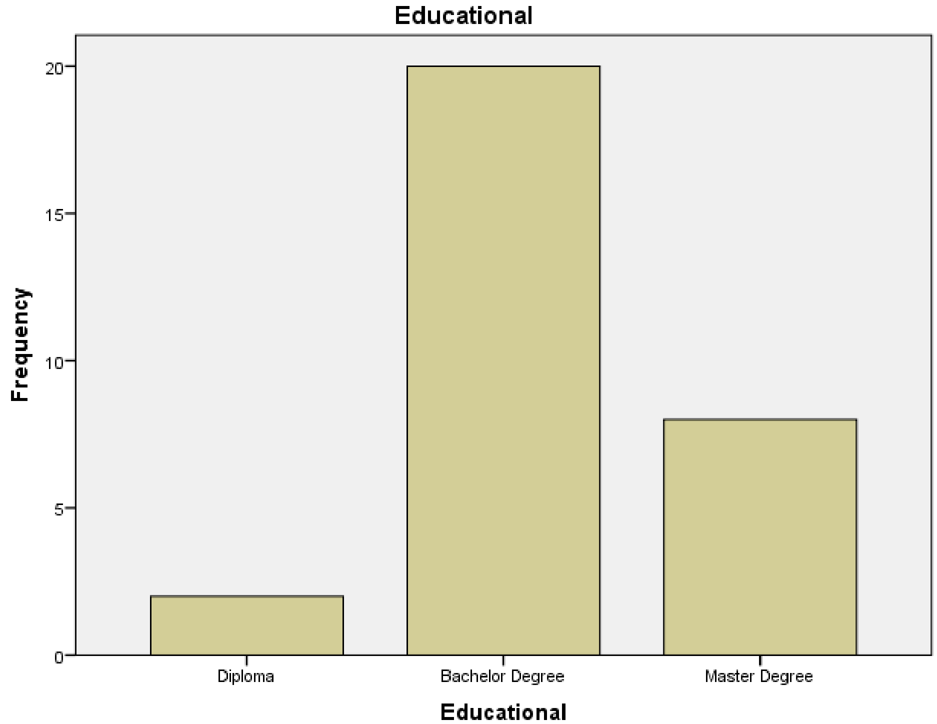


From above figure, the highest age of respondents is between 31 to 40 years old which represent 63.3 percent with 19 respondents. Then, followed by 23.3 percent with 7 respondents for 21 to 30 years oldnand 13.3 percent with 4 respondents represent for 41 to 50 years old.

c) Educational

Educational

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	2	6.7	6.7	6.7
	Bachelor Degree	20	66.7	66.7	73.3
	Master Degree	8	26.7	26.7	100.0
	Total	30	100.0	100.0	

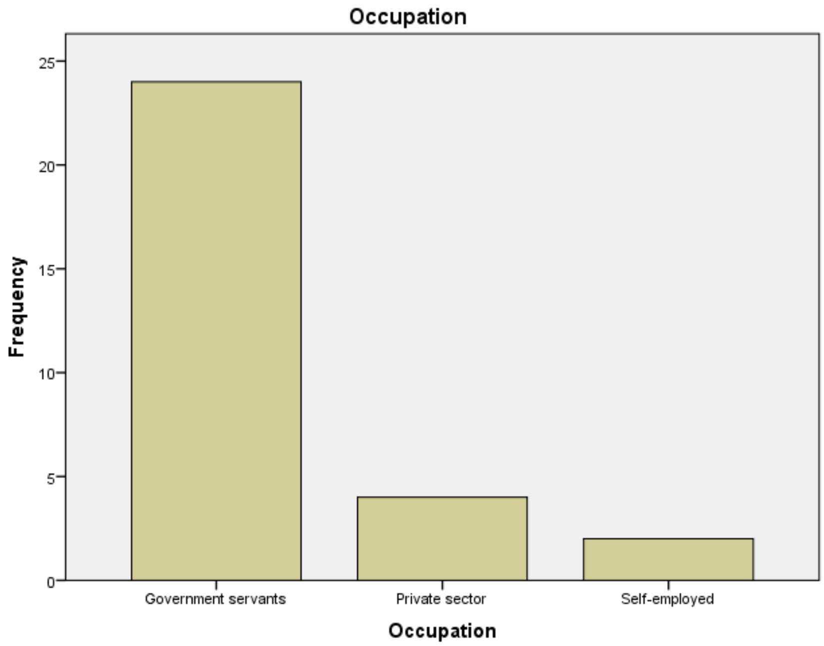


Majorities sample of educations are Bachelor (first Degree)/Professional 20 percent, Postgraduate (Master Degree) 26.7 percent, and Diploma holder is 6.7 percent. These showed on the table above.

d) Occupation

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Government servants	24	80.0	80.0	80.0
	Private sector	4	13.3	13.3	93.3
	Self-employed	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

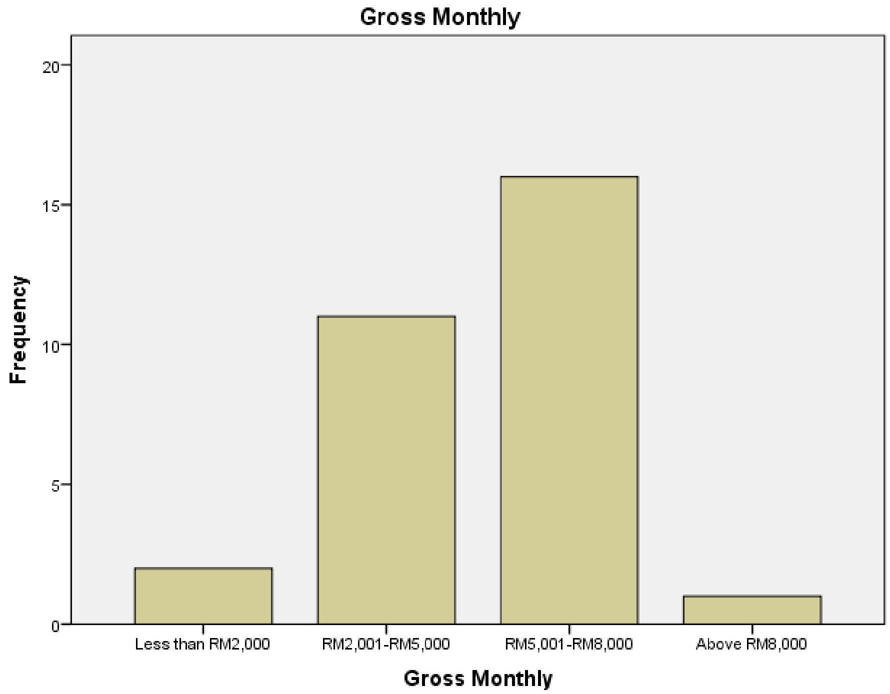


The figure's above show that the highest respondents occupation/work in is government servant private sector with 24 respondents (80 percent), followed by 4 respondents (13.3 percent) in private sector and remaining is for self-employed 2 respondents (6.7 percent).

e) Gross Monthly

Gross Monthly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than RM2,000	2	6.7	6.7	6.7
	RM2,001-RM5,000	11	36.7	36.7	43.3
	RM5,001-RM8,000	16	53.3	53.3	96.7
	Above RM8,000	1	3.3	3.3	100.0
	Total	30	100.0	100.0	



The distribution of respondent according to their gross monthly income was recorded and the result is shown as the table above. The highest response is monthly income ranging RM 5001 to 8000, total of 16 of the respondents. Second highest is monthly income ranging RM2001 to RM5000, total of 11 contributing 36.7 percent of the respondents. Then, followed by respondents which having monthly income less than RM2000 with 6.7 percent of respondents. The lowest percentage which is 3.3 percent was contributed by the respondents that have income RM8001 and above which indicates 1 respondents. In accordance to the result of Profession question, most of the respondents are quite high income group earner.

f) Pay Zakay on Income

Pay-Zakat on Income

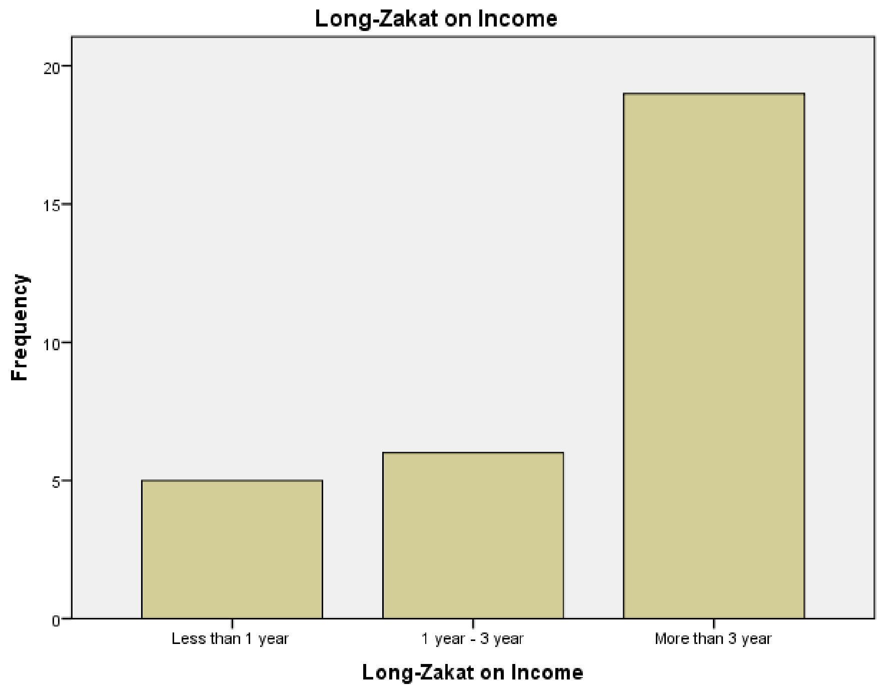
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	27	90.0	90.0	90.0
	No	3	10.0	10.0	100.0
	Total	30	100.0	100.0	

The highest response is majority respondents are payer of Zakat on income. With the 90 percent consist of 27 respondent who are paying Zakat. The remaining percentage which is 10 percent was contributed by the respondents who did not Pay zakat on income which indicates 3 respondents. In accordance to the result the 3 of them are fresh graduate and still studying.

g) Duration pay zakat on income

Long-Zakat on Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	5	16.7	16.7	16.7
	1 year - 3 year	6	20.0	20.0	36.7
	More than 3 year	19	63.3	63.3	100.0
	Total	30	100.0	100.0	

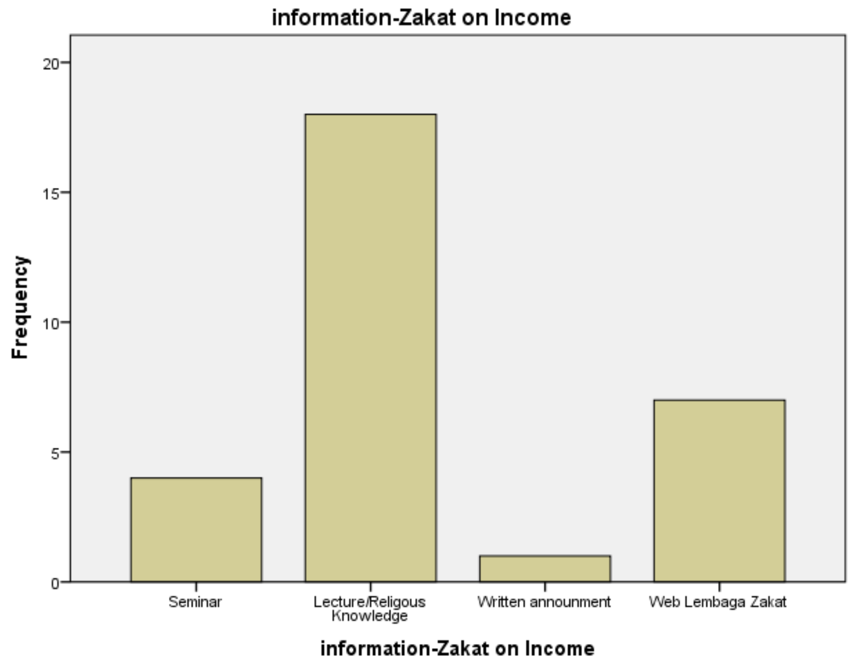


The above data revealed that 19 respondents have contributed on their paying Zakat for more than 3 years, followed by 6 respondents who were paying Zakat between 1 to 3 years meanwhile the remaining 5 of them who were contributed less than 1 year.

h) Information Zakat on Income

information-Zakat on Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Seminar	4	13.3	13.3	13.3
	Lecture/Religous Knowledge	18	60.0	60.0	73.3
	Written announment	1	3.3	3.3	76.7
	Web Lembaga Zakat	7	23.3	23.3	100.0
	Total	30	100.0	100.0	



From the above figure, it can be seen that majority of respondents (18 customers) response get the information about Zakat thru lecture or religious knowledge. It is then followed by 7 respondents who know from Zakat webpage meanwhile another 4 respondents expose about Zakat from seminars. Remaining is 1 respondent get to know from written announcement.

5.0 CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter concludes findings of the study. Section 5.1 explains the summary of findings followed by the recommendations in Section 5.2. The limitations of this study highlights in Section 5.3, the suggestions for future research are presented in Section 5.4 and the conclusion highlights in section 5.5.

5.1 Summary of findings

The findings of this preliminary study have answered all the research questions. There is a set of questions that has been disclosed by:

i) The altruism factors among factors of motivation on paying Zakat is extensively high.
ii) The self satisfaction factors among factors of motivation on paying Zakat is high.
iii) The organization factors strategies employed by factors of motivation on paying Zakat are extensively low.
iv) There are relationships between all variables except for insignificant correlation between motivation and organization.

v) It is found that only interaction effect of altruism would give an influence to motivation of paying Zakat. It is also found that altruism would be the main predictor of motivation of paying Zakat.

5.2 Recommendations

1. Creating a Zakat forum

A special charity forum can be created and deployed to brighten the symbols raising charity. This forum can be composed of any of the parties aiming directly contribute ideas and energy to help the institution of Zakat existing scholarly discussion sessions, seminars, writing and so on. Zakat institutions continuity of this forum can help with donations of funds or other resources that more parties will be involved enhancing the eminence of Zakat in Malaysia. This Forum may be one avenue to get feedback from the public, bring the parties responsible, creating a communications network and much more. The move to set up this forum and efforts should be continued establishment to grow faster Zakat institutions in the country.

2. Strengthening the role of JAWHAR

The federal government has set up a special department to coordinate activities Zakat in Malaysia, the Department of Awqaf, Zakat and Hajj (JAWHAR) since 2004 role is to plan, coordinate, develop and monitor the strengthening Zakat institutions in Malaysia. Many efforts have been undertaken, but it is still possible upgraded from time to time. The government should provide more funds to enable JAWHAR role with the provisions of publication of the advertisement or relevant documentary charity in electronic media / print and billboard as well as having more academic programs.

3. Consistent Census of Population

Department of Statistics have to carry out population census information details on the population of Malaysia. Zakat institutions very needy information census as a result of the census, the institution of Zakat can find income population. Info income residents is very important to identify the poor and the indigent poor and high-income subject to payment of zakat income.

4. The role of public and private institutions in the Making Zakat continuing sudies.

For the benefit of Zakat Institutions study, Zakat institutions have limited resources to carry out comprehensive and can be backed .The public higher education institutions , particularly the received numerous grants , with many experts in various fields can discuss with the institution of zakat to produce studies that can benefit the charity institution directly. There are also many students in Master's and PhD that can be utilized to carry out the study that can help the industry. A tentative work planned to be carried out to ensure that this proposal can be realized. This activity will be a win-win activity in the higher education institution where higher education institution entrusted to make study , conduct study as targeted and zakat institutions they have input very useful to be applied by them to provide the best service to the public.

5. Giving New Perceptions of Support for Zakat Institutions

Support and input in a new perception of the institution of zakat is it is imperative that every effort is being and will be implemented by the authority Trust charity institution can manage to do it in a responsible and effective. This role can be played by the government, private sector, community leaders, individual and others. Confidence and trust should be given to charity institutions and Play to uplift the third pillar of Islam can be implemented with effectively and efficiently. Any attempt to improve on weaknesses are moved and any suggestions and constructive ideas from all parties is necessary in the interest of the nation.

5.3 Limitations of the Study

The results of this study should be interpreted in light of several limitations. Firstly, the data collection only taken by small sample from the population. Thus, this research much focuses on the government staff. Nowadays, many people got income with self employed. The data given by respondent not accurate to show or answer the questionnaire.

5.4 Suggestions for Future Research

Perhaps, in the future, the factors influence on Zakat payment could be analyzed within a duration of three years in order to see any improvement on Zakat income payment because of the economics situation nowadays and the new era of information technology.

Finally, the motivation factors should also consider other possible dimensions such as external/ environmental factors that might provide interesting results for future research. The increasing of the contribution of Zakat payment should also be deliberated by a subjective measure.

5.5 **Conclusion**

Respondents were asked about their motivation factors on Zakat contribution using survey questionnaire method. Factor analysis was used to identify factors that are related to the motivation of zakat contribution. The results of the factor analysis show that the items used in the survey split into distinct factors, describing religious, self-satisfaction and organization.

Altruism is identified as the main factors influence individual to pay Zakat followed by religious, self satisfaction and organization factors. Reward has been found not to be the reason for Zakat contribution. Based on this finding it can be concluded that individuals pay Zakat not only because of religious factor, such as level of iman and belief but also because of satisfaction received from performing the activity, not only for one-self but for the happiness of others as well. However, based on this study, there are other factors that contribute to motivate the respondents to participate in Zakat. These factors include self-satisfaction and organization factors. Altruism is identified as the main factors influence individual to pay Zakat followed by religious, self satisfaction and organization factors. Reward has been found not to be the reason for Zakat contribution. Based on this finding it can be concluded that individuals pay Zakat not only because of religious factor, such as level of iman and belief but also because of satisfaction received from performing the activity, not only for one-self but for the happiness of others as well.

Thus, based on this study, there are other factors that contribute to motivate the respondents to participate in Zakat. These factors include self-satisfaction and organization factors. Results of this finding indicate that personal reward is not an important contribution for individuals to involve in an exchange. This may not support the contention of the theory of exchange which assumes that individual involves social or obligatory activities are motivated by the exchange for tangible benefits or rewards. It is also interesting to note that tax rebate is the major influence for Muslims in contributing to Zakat as the mean score is 4. 133. Organization factor is also important. Even though the composite score is below four, we cannot ignore this factor. This is because there are some respondents maintained that they pay Zakat because they are satisfied and rely on the services offered by the organization responsible in the collection of Zakat. This is also evidenced by the significant improvement in recent years due to institutionalized efforts.

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FAKTOR PEMILIHAN DAN PENGGUNAAN PERISIAN APLIKASI DALAM KALANGAN PELAJAR KEJURUTERAAN MEKANIKAL DI POLITEKNIK NILAI

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Katakunci: Perisian aplikasi, pelajar Kejuruteraan Mekanikal

Abstrak. Penggunaan perisian aplikasi dalam pendidikan dan kebolehan pelajar menggunakanya dengan berkesan kini dilihat sebagai satu keperluan dalam sistem pendidikan hari ini. Oleh yang demikian, kajian ini bertujuan untuk meninjau faktor-faktor yang mendorong terhadap pemilihan dan penggunaan perisian tersebut dalam proses pembelajaran pelajar Kejuruteraan Mekanikal di Politeknik Nilai. Sampel kajian ini adalah terdiri daripada pelajar-pelajar Diploma Kejuruteraan Mekanikal dari semester satu hingga lima seramai 175 orang pelajar. Instrumen kajian ini ialah borang soal selidik yang telah diedarkan kepada pelajar. Perisian *Statistical Package for the Social Science* (SPSS) versi 19.0 telah digunakan untuk menganalisis data bagi mendapatkan data-data statistik. Dapat kajian menunjukkan hampir keseluruhan faktor yang disenaraikan adalah merupakan kriteria utama pelajar dalam menggunakan perisian aplikasi manakala pelajar kurang bersetuju terhadap faktor kos perisian. Oleh itu, pengkaji mencadangkan agar faktor yang disenaraikan serta faktor lain yang releven diambil kira dalam menarik minat pelajar untuk mempelajari perisian yang membantu meningkatkan kefahaman dan pengetahuan pelajar.

PENGENALAN

Dewasa ini, perkembangan teknologi komputer sernakin hari semakin pesat. Malaysia juga tidak dapat lari dari merasai bahang perkembangan teknologi komputer tersebut.. Sejak diperkenalkan untuk kegunaan umum pada tahun 1945 dengan nama ENIAC yang dicipta oleh *Prosper Eckert* dan *John Mouchly* dari *university of Pensylvania (*Richards, 2005 dan Oliver 2002), fungsi dan penggunaan komputer terus berkembang dari semasa ke semasa. Pada masa itu, ENIAC hanya mampu menjalankan operasi-operasi matematik asas iaitu fungsi campur, tolak, hahagi dan darab. Tetapi dengan perkembangan pesat bidang teknologi komputer, fungsinya semakin hari semakin meningkat. Ini secara tidak langsung juga telah meningkatkan sumbangan komputer kepada manusia.

Tahun 1982 pernah diistiharkan sebagai *Year of computer* oleh kerana sumbangan besar komputer dalam melengkapkan dan meningkatkan kemampuan manusia menjalankan tugas-tugas mereka (Wright & Forcier, 1985). Apa yang lebih menarik, pada masa kini komputer turut berfungsi sebagai sumber maklumat dan hiburan, sejajar dengan perkembangan teknologi komunikasi dan maklumat yang menghubungkan komputer-komputer menerusi sistem rangkaian *(network)*. Komputerberfungsi untuk memerima, mernproses, menyimpan dan mengeluarkan semula maklumat, sementara itu sistem komunikasi pula membolehkan maklumat maklumat dihantar dari satu tempat ke tempat lain dengan lebih pantas (Tinio, 2003). Perkembangan terkini iaitu internet pula membolehkan pengguna komputer berhubung, berkomunikasi dan mengakses dan menghantar maklumat dengan lebih pantas.

Perkembangan teknologi ini turut memberi kesan kepada bidang pendidikan. Ini kerana bidang pendidikan turut tidak ketinggalan dalam meraih peluang-peluang disediakan oleh perkembangan teknologi. Menurut Law et al. (2000) penguasaan pelajar dalam penggunaan komputer dalam proses pembelajaran dianggap sebagai matlamat yang perlu dicapai di dalam pembentukkan kurikulum masa kini. Manakala Yahya (2007), menyatakan bahawa integrasi penggunaan komputer dalam proses pembelajaran menunjukkan korelasi yang positif man peningkatan pencapaian para pelajar. Jamaluddin (2005), pula menyatakan bahawa integrasi yang positif antara pendidikan dan komputer secara tidak langsung telah mengiktiraf kepentingan komputer di dalam proses pengajaran dan pembelajaran.

Kursus pengajian pada masa hadapan tidak lagi akan melalui penilaian had kemampuan ingatan individu, tetapi akan mencabar pelajar mengakses maklumat dengan lebih cepat, menyusun mengikut susunan yang logik, membuat kesimpulan dari fakta yang diterima, serta ketepatan dan kecepatan penyelesaian masalah" (Abbot, 2001). Terdapat juga pandangan yang menyatakan bahawa komputer merupakan *"a perfect vehicle"* untuk membantu mempertingkatkan prestasi pelajar dengan penghasilan program-program dan perisian-perisian tertentu bagi pelajar sasaran (Aris, 2002). Hal ini secara tidak langsung telah meningkatkan penggunaan perisian dalam memudahkan peoses pengopersian komputer. Menurut Suhaimi Embong & Embong (2005), peranan yang dimainkan oleh perisian komputer menjadi semakin penting dalam urusan kehidupan manusia. Ia telah dan akan menjadi nadi kepada pelbagai bidang perniagaan. Selain itu ia juga menjadi alat untuk menyelesaikan masalah saintifik dan kejuruteraan yang mudah ataupun rumit. Perkembangan teknologi interet juga telah menyaksikan bagaimana perisian memainkan peranan sebagai alat telekomunikasi dan penyebaran maklumat. Perkembangan penggunaan perisian dalam bidang penyelidikan juga telah menjadi begitu penting pada abad ini. Di samping memudahkan proses pembelajaran, penggunaan perisian juga dapat memudahkan proses pembelajaran, ia juga dapat memudahkan proses mereka bentuk, kawalan, automasi, pengukuran, simulasi, analisis, grafik, dan pembinaan.

Latar Belakang Masalah

Penggunaan dalam pendidikan dan kebolehan pelajar menggunakannya dengan berkesan kini dilihat sebagai satu keperluan dalam sistem pendidikan sekarang. Terdapat berbagai-bagai perisian yang dibangunkan khusus untuk memenuhi keperluan para pendidik dan pelajar berasaskan pembelajaran berbantu komputer atau *Computer Assisted Instruction* (CAI) dan *Computer Managed Instruction* (CMI). Di samping itu, aplikasi asas seperti pemproses perkataan (*word processing*), lembaran kerja (*work sheet/spead sheet*), pakej persembahan grafik (*presentation graphics package*) dan sebagainya turut memberikan sumbangan yang signifikan kerana ia mempermudah proses pengajaran dan pembelajaran, (Marsan, 2001) di samping mempermudah tugas dan urusan pelajar dan guru (Wright dan Othman dan Bakri, 2007). Tambahan pula dengan adanya teknologi multimedia yang menggabungkan unsur-unsur teks, grafik dan animasi menjadikan teknologi perisian ini lebih menarik untuk digunakan oleh pelajar. Bagi pendidik pula is dapat membantu di dalam proses pengajaran dan pembelajaran bagi meningkatkan dan produktiviti pendidikan negara menuju wawasan 2020 (Marsan, 2001).

Walaupun terdapat pelbagai jenis perisian dalam pelbagai bidang tetapi ianya boleh dibahagikan kepada dua kategori utama iaitu sistem perisian dan perisian aplikasi akan tetapi perisian aplikasi iebih banyak digunakan dalam bidang kejuruteraan. Perisian aplikasi dibina khusus oleh para jurutera, saintis dan pendidik untuk memudahkan proses penyelidikan dan pembelajaran. Antara perisian pendidikan yang sering digunakan untuk proses pembelajaran adalah *MATLAB, FORTRAN, C++, PLC, Lab VIEW, Visual Basic, AutoCad, Microsoft Office, Macromedia, Adobe Photoshop,* dan lain-lain lagi Oleh yang demikian, pengkaji berhasrat untuk meninjau faktor-faktor yang mendorong terhadap pemilihan dan penggunaan perisian tersebut dalam proses pembelajaran pelajar Pendidikan Teknik dan Vokasional (PTV) di KUiTTHO.

Pernyataan Masalah

Kaedah pembelajaran yang pelbagai perlu digunakan oleh pelajar untuk meningkatkan pengetahuan dan kemahiran terutamanya dalam menghadapi era teknologi maklumat yang semakin pesat ini. Kemahiran-kemahiran penggunaan perisian yang terkini untuk proses seperti reka bentuk, pembinaan operasi, kawalan, pengajaran dan pembelajaran, grafik, pembinaan laman web, animasi dan simulasi dan sebagainya amat penting untuk dikuasai oleh setiap pelajar.

Oleh itu penggunaan perisian dalam pendidikan adalah salah satu cara dalam meningkatkan pengetahuan pelajar terutamanya dalam bidang mekanikal berdasarkan ciri-ciri penggunaannya yang efisien, berkeupayaan mempelbagaikan penyampaian isi pelajaran melalui sokongan aplikasi multimedia untuk merangsang minat pelajar di dalam pembelajaran serta menjadikan proses pembelajaran yang lebih menarik di kalangan pelajar. Dalam kajian ini pengkaji ingin melihat apakah faktor-faktor yang mendorong pemilihan dan penggunaan perisian pendidikan di alangan pelajar Kejuruteraan Mekanikal PNS di dalam proses pengajaran dan pembelajaran.

Persoalan Kajian

Berdasarkan kepada penyataan masalah, pengkaji telah memfokuskan kepada empat persoalan kajian iaitu;

1. Adakah elemen multimedia yang ada menjadi faktor pemilihan dan penggunaan perisian pendidikan di kalangan pelajar Kejuruteraan Mekanikal PNS.
2. Adakah aspek kos dan perolehan perisian di pasaran menjadi faktor pemilihan dan penggunaan perisian pendidikan di kalangan pelajar Kejuruteraan Mekanikal PNS.
3. Adakah aspek kemudahan penggunaan dan ciri-ciri mesra pengguna yang ada menjadi faktor pemilihan dan penggunaan perisian di kalangan pelajar Kejuruteraan Mekanikal PNS.
4. Adakah ciri-ciri perisian yang menarik menjadi faktor pemilihan dan penggunaan perisian pendidikan di kalangan pelajar Kejuruteraan Mekanikal PNS.

Objektif Kajian

Objektif utama kajian ini adalah untuk meninjau faktor-faktor yang mendorong pelajar pelajar Kejuruteraan Mekanikal PNS memilih dan menggunakan perisian pendidikan yang dihasilkan bagi membantu pelajar menguasai kemahiran teknologi perisian yang dibangunkan khusus untuk memudahkan proses pembelajaran di samping melatih pelajar mengaplikasikan penggunaan perisian yang ada dalam perkembangan sains dan teknologi, Jenis-jenis perisian yang terlibat dalam kajian ini

lebih merujuk kepada perisian aplikasi yang digunakan untuk memenuhi keperluan kurikulum dan aktiviti pengajaran dan
pembelajaran pelajar iaitu:

1. Sistem operasi (seperti *Microsoft Windows).*
2. Pemprosesan perkataan (seperti *Microsoft Word).*
3. Lembaran elektronik (seperti *Microsoft Excel).*
4. Pengkalan data (seperti *Microsoft Access).*
5. Grafik (seperti *Adobe Photoshop).*
6. Persembahan (seperti *Microsoft Power Point Authorware)*
7. Pemprosesan data (seperti *SPSS).*
8. Internet 4 seperti *Microsoft Internet Explorer, Dreamweaver MX, Microsoft Front Page).*
9. Audio seperti *Jet Audio).*
10. *Perisian Kejuruteraan seperti MATLAB, C++, Visual Basic, Autocad, LabView, Inventor Pro E, SolidWorks dan lain-lain.*
11. *Animasi seperti Adobe Flash, Swish.*
12. *Video seperti JetAudio, Media Player, Gom Player dan lain-lain.*

Selain itu kajian ini juga dijalankan untuk-.

1. Meninjau sejauh manakah elemen multimedia menjadi faktor kepada pemilihan dan penggunaan perisian pendidikan di kalangan pelajar Kejuruteraan Mekanikal PNS serta memudahkan pembelajaran pelajar.
2. Melihat pengaruh kos dan perolehan perisian di pasaran terhadap pemilihan dan penggunaan perisian pendidikan di kalangan pelajar pelajar Kejuruteraan Mekanikal PNS.
3. Meninjau sejauh manakah aspek kemudahan penggunaan dan ciri-ciri mesra pengguna yang ada menjadi pendorong terhadap pemilihan dan penggunaan perisian di kalangan pelajar Kejuruteraan Mekanikal PNS.
4. Meninjau sejauh manakah pengaruh perisian yang mempunyai ciri-ciri yang menarik menjadi pendorong dan menarik minat terhadap pemilihan dan penggunaan perisian pendidikan di kalangan pelajar Kejuruteraan Mekanikal PNS.

Responden Kajian

Responden kajian adalah terdiri daripada pelajar Ijazah Sarjana Muda Pendidikan Teknik dan Vokasional (PTV), Kolej Universiti Teknologi Tun Hussein Onn (KUiTTHO) . Pengkaji hanya akan menggunakan pensampelan dari jenis sampel rawak kelompok di mana sampel dipilih berdasarkan rumpunan populasi (Mohamad Najib, 1999). Daripada sumber data pelajar yang diperolehi daripada fakulti, jumlah pelajar Sarjana Muda Pendidikan Teknik dan Vokasional (PTV) adalah seramai 330 orang. Oleh itu, bilangan sampel responden kajian yang sesuai adalah 175 orang pelajar orang merujuk kepada jadual (Krejeie dan Morgan, 1970). Pemilihan pelajar tersebut adalah disebabkan proses pembelajaran setiap semester melibatkan penggunaan perisian, oleh itu adalah perlu mengambil kira pandangan dan pendapat keseluruhan pelajar.

Bagi mencapai dan memenuhi kehendak objektif kajian, keseluruhan sumber data primer dan data sekunder telah digunakan untuk menyokong kajian ini. Data primer adalah data yang sangat penting untuk digunakan di dalam sesuatu kajian. Di dalam kajian ini data primer adalah melalui maklum balas dari borang soal selidik. la digunakan untuk mendapatkan butir-butir peribadi dan reaksi responden dari segi pengalaman, tujuan, tahap pengetahuan, minat dan kekangan pelajar dalam menggunakan komputer.

Manakala data sekunder pula adalah data yang diperolehi daripada buku, majalah, jurnal, internet, *CDROM*, artikel, keratan akhbar dan sebagainya yang berkaitan dengan kajian. Data sekunder ini penting untuk menyiapkan kajian dengan sumber maklumat yang terkini.

Instrumen Kajian

Pengkaji menggunakan borang soal selidik untuk memperolehi data daripada responden. Borang soal selidik sesuai digunakan dalam kajian yang melibatkan jumlah responden atau sampel yang ramai dan berbentuk seragam. Borang soal selidik juga dapat membantu responden mendapat gambaran tentang maklumat yang diperlukan dan memudahkan proses menganalisis data *(Manson* dan *Bramble,1997).* Menurut *Best* dan *Khan* (1998), borang soal selidik digunakan apabila seseorang pengkaji memerlukan maklumat berbentuk fakta. Menurut Mohd Majid Konting (2000), menyatakan bahawa soal selidik yang sempurna dapat mengukur dan mengumpul maklumat data dengan berkesan. Soal selidik yang sempurna juga dapat meningkatkan kerjasama subjek untuk menjayakan penyelidikan. Set borang soal selidik yang disediakan mempunyai 5 (lima) bahagian iaitu bahagian A, B, C, D dan E.

Bahagian A

Bahagian A mengandungi item-item soalan berkaitan maklumat-maklumat tentang latar belakang responden. Ia merangkumi soalan-soalan yang berkaitan dengan jantina, bangsa, bidang pengkhususan, kadar penggunaan komputer, pandangan terhadap penggunaan komputer, perisian yang dikuasai dan sering digunakan dan masalah dalam menggunakan perisian pendidikan semasa proses pengajaran dan pembelajaran.

Bahagian B, C, D, dan E

Manakala Bahagian B, C, D dan E pula mengandungi item-item soalan yang dibentuk menggunakan Skala Likert. Kaedah ini dipilih kerana menurut Best dan Khan (1993) *".....since the Licert Scale take much less time to conduct, it o en an interesting possibility for the student of opinion research".* Format skala likert juga lebih mudah untuk dianalisis secara menyeluruh berbanding dengan item soalan aneka pilihan yang berformat tidak sekata. Penerangan bagi bahagian B, C, D, dan E ini adalah seperti yang tersenarai :

Bahagian B :
Bahagian ini mempunyai 7 item yang berkaitan dengan perkara-perkara yang terkandung dalam elemen multimedia. Perkara yang diberi perhatian adalah termasuk grafik, warna, muzik, interaktiviti, animasi dan simulasi.

Bahagian C :

Bahagian ini mempunyai 12 item dengan aspek kos mewakili soalan 8 hingga 13, manakala aspek perolehan perisian mewakili soalan 14 hingga 19. Perkara yang diberi perhatian adalah kos perisian, perolehan perisian, penggunaan perisian, peralatan tambahan, sokongan pembelian dan panduan penggunaan.

Bahagian D :
Bahagian ini mempunyai 13 item dengan aspek kemudahan penggunaan mewakili item 20 hingga 24 dan item mesra pengguna *(user friendly)* mewakili item 26 hingga 32. Perkara yang diberi perhatian adalah kemudahan antara muka, penggunaan tetikus, menu bantuan, bahasa pengaturcaraan, dan menu arahan.

Bahagian E :
Bahagian ini mempunyai 6 item yang berkaitan dengan perkara-perkara yang terkandung dalam perisian-perisian yang menarik. Perkara yang diberi perhatian adalah elemen multimedia, perisian yang tidak mem bosankan, mesra pengguna, bahasa pengaturcaraan, pendekatan, dan bermotivasi.

Dapatan Kajian

Perbincangan hasil kajian terbahagi kepada beberapa bahagian, di mana setiap bahagian akan menjawab persoalan kajian. Kesemua dapatan kajian ini dianalisis dan dipersembahkan dalam lima bahagian iaitu A, B, C, D, dan E. Bagi dapatan kajian yang diperolehi untuk Bahagian A iaitu maklumat Tatar belakang responden ianya akan dipersembahkan dalam bentuk peratusan. Manakala bagi dapatan kajian untuk bahagian yang lain iaitu B, C, D, dan E akan dianalisis menggunakan min dan sisihan piawai. Seterusnya nilai min keseluruhan yang diperolehi bagi setiap faktor akan ditafsirkan mengikut skala yang telah ditetapkan sebagai ukuran semada pelajar sarjana muda PTV di KUiTTI-I0 menjadikan faktor-faktor tersebut sebagai kriteria pemilihan dan penggunaan perisian pendidikan dalam proses pembelajaran mereka.

Analisis Data Terhadap Latar Belakang Responden

Jantina

Jadual 4.2 : Peratusan Jan tina Responden

Jantina	**Kekerapan**	**Peratus %**
Lelaki	64	36.6
Perempuan	111	63.4
Jumlah	**175**	**100.0**

Nilai Min Tertinggi

Jadual di bawah menunjukkan nilai min tertinggi berdasarkan purata min keseluruhan yang diperolehi.

Jadual: Nilai Min pemilihan dan penggunaan perisian pendidikan di kalangan pelajar Kejuruteraan Mekanikal Pooliteknik Nilai

Purata Min Keseluruhan	Faktor
4.0310	Elemen Multimedia
3.4976	Aspek Kos dan Perolehan Perisian
3.7666	Aspek Kernudahan Penggunaan dan Ciri-Ciri Mesra Pengguna
3.7551	Aspek Perisian Yang Menarik

Daripada jadual diatas didapati faktor elemen multimedia mempunyai nilai min yang tertinggi iaitu sebanyak 4.03, diikuti dengan aspek penggunaan dan ciri-ciri mesra pengguna dengan min 3.766, aspek perisian yang menarik min 3.755 dan aspek kos dan perolehan perisian berada pada tahap yang paling rendah dengan min 3.4976 iaitu aras kurang setuju.

Maklum Balas

Selain daripada penilaian menggunakan soal selidik, maklum balas yang terdiri daripada masalah dalam menggunakan perisian pendidikan semasa proses pengajaran dan pembelajaran daripada responden juga telah dirumuskan seperti dalam jadual 4.15 di bawah.

Jadual: Masalah Penggunaan Perisian Semasa Proses Pengajaran dan Pembelajaran.

Responden	Masalah Penggunaan Perisian
3	Tidak semua proses P & P dapat dilakukan serentak terutama dalam mempelajari perisian Baru. Mendengar dan melakukan agak sukar (2 kerja dalam satu masa).
5	Kurang mahir menggunakan perisian.
6	Masalah pemprosesan yang lambat dan lembap.
8	Kekurangan komputer di dalam makmal.
9	Sukar memahami perisian yang ada.
15	Susah didapati, harga yang agak mahal, susah difahami kerana tiada bantuan praktikal.
28	Masalah dalam menyediakan bahan berkualiti dalam menggunakan perisia.n tersebut.
31	Penyelenggaraan yang memakan masa yang agak lama bagi mereka yang tidak mahir menggunakan perisian tersebut.
34	Kurang pendedahan penggunaan perisian yang baru.
45	Peralatan yang tidak mencukupi dan serangan virus.
47	Masalah dalam penggunaan Internet seperti *server down* dan pencarian maklumat.
50	Sistem Operasi yang tidak sama seperti fail *Microsoft ME* gaga) di baca di dalam *Microsoft XP*.

52	Kurang kemahiran dalam pengendalian perisian.
52	Masalah peralatan sokongan
89	Kurang pendedahan pengunaan dan kemahiran komputer sepenulmya. Tiada talian Internet yang dibekalkan di asrama.
100	Masalah dalam penggunaan bahasa yang tidak difahami.
140	Kebanyakan penggunaan perisian dalam pelajaran amat sukar kerana memerlukan pemahaman yang mendalam seperti, *PSpice, Orcad, SPSS, C++*, dan lain-lain.
141	Khidmat penggunaan komputer tidak menyeluruh. Sesetengah pelajar tidak memahami kaedah penggunaanya. Kurang pengetahuan dalam penggunaan perisian tersebut.

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141	Khidmat penggunaan komputer tidak menyeluruh. Sesetengah pelajar tidak memahami kaedah penggunaanya. Kurang pengetahuan dalam penggunaan perisian tersebut.

Kesimpulan

Kemajuan teknologi moden adalah salah satu faktor yang turut mempengaruhi pembaharuan yang pesat dalam dunia pendidikan. Peranan utama teknologi semakin dirasakan oleh pelbagai sektor terutama dalam sektor bisnes, telekomunikasi, pentadbiran dan pendidikan. Dalam bidang pendidikan, kerajaan dam masyarakat awam telah memberikan perhatian yang mendalam tentang perkara tersebut kerana menyedari hakikat tentang peranan dan fungsi yang boleh dimainkan oleh teknologi dalam pendidikan. Mereka yakin bahawa teknologi boleh membantu mencapai matlamat dan tujuan pendidikan untuk menjadikan proses pengajaran dan pembelajaran lebih berkesan dan bermakna. Daripada analisis yang telah dijalankan, kesimpulan yang dapat dibuat daripada kesemua faktor yang telah dibincangkan terhadap pemilihan dan penggunaan perisian pendidikan di kalangan pelajar dengan nilai min keseluruhan 3.76.

Bagi melahirkan pelajar yang berkemahiran dan berpengetahuan seseorang pelajar itu perlulah diterapkan dengan pelbagai bidang ilmu dan kemahiran. Dalam menguasai penggunaan pelbagai perisian pendidikan adalah amat penting untuk melahirkan pelajar yang mampu bersaing seiring dengan perkembangan teknologi maklumat yang semakin berkembang pada hari ini. Elemen Multimedia adalah merupakan salah satu aspek yang amat penting bagi pelajar dalam menggunakan perisian pendidikan, ini kerana dengan adanya elemen multimedia yang menggabungkan pelbagai media seperti suara, teks, video, grafik, interaktiviti, animasi dan simulasi memiliki kebolehan untuk menjadikan media pembelajaran lebih lengkap. Sebagai media yang lengkap multimedia berkemampuan untuk mengembangkan daya imaginasi, kreativiti, fantasi, dan emosi pelajar ke arah yang lebih baik. Pelbagai kajian lepas telah menunjukkan bahawa media pengajaran yang melibatkan lebih daripada satu deria adalah lebih berkesan untuk pembelajaran daripada media pembelajaran yang hanya melibatkan satu deria sahaja. Kajian-kajian lepas juga menunjukkan bahawa pelajaran akan tersimpan di ingatan lebih lama apabila lebih daripada satu deria dilibatkan semasa pengajaran berlaku.

Walaupun terdapat pelbagai perisian pendidikan yang ditawarkan di pasaran dengan pelbagai ciri-ciri yang menarik dan dengan fungsi yang pelbagai untuk menjana arus perubahan teknologi maklumat hari ini. Namun hampir kesemua perisian yang ditawarkan di pasaran adalah mahal dan di luar daripada kemampuan pelajar. Sebagai contoh perisian operasi seperti *windows*, *microsoft office*, dan banyak lagi memakan kos beratus ringgit dan untuk memilikinya sedikit sebanyak akan membebankan pelajar. Hal ini lah yang menyebabkan kebanyakan pelajar kurang bersetuju dengan persoalan kajian yang dinyatakan. ini kerana di samping harga yang ditawarkan agak mahal, penggunaan perisian perlu disokong oleh alatan tambahan, buku manual sebagai sokongan, dan perisian-perisian lain yang saling bergantungan dengan perisian yang digunakan, sebagai contoh menghasilkan cd interaktif menggunakan *Authoware* perlu di sokong oleh *Macromedia Flash*, *Swish*, *Adobe* dan lain-lain lagi. Oleh hal yang demikian adalah amat penting untuk mencari jalan penyelesaian kepada masalah yang dihadapi seperti menyediakan kemudahan penggunaan perisian tersebut di kampus, dan lain-lain. Untuk menunjukkan sesuatu perisian itu berkesan dalam suasana pembelajaran, kandungannya mestilah mempunyai nilai-nilai pendidikan. Aspek-aspek mesra pengguna dilihat begitu dititik beratkan oleh pelajar. Ini kerana dengan adanya ciri-ciri mesra pengguna seperti bahasa pengaturcaraan yang mudah, kemudahan menu bantuan, *toolbars*, antara muka yang baik, *help* dan sebagainya akan memudahkan lagi pelajar untuk mempelajari sesuatu perisian itu. Secara tidak langsung akan menjadikan suasana pembelajaran tidak membosankan dan sedikit sebanyak akan menarik minat pelajar untuk mempelajarinya serta menjadikan pelajar lebih bermotivasi untuk belajar.

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