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FOREWORD

Assalamualaikum, Salam Sejahtera and Salam 1 Malaysia

Alhamdulillah, all praise is to Allah The Almighty, by whose grace and blessing, the fifth issue of PSP's Research Digest is published. It is indeed a great pleasure to be given this opportunity to pen a few words in this issue. The publication of the digest clearly shows the commitment and endeavour of the Politeknik Seberang Perai's lecturers to constantly carry out research in order to improve the quality of teaching and learning and stimulate a culture of innovation and creativity among the staff.

The papers published in this digest are the outcomes of the initiative of Politeknik Seberang Perai's lecturers to conduct research and present their findings at seminars and international conferences. This digest sets out the institution's research strategy and provides a review of its research in key areas, ranging from pedagogical issues to technical and engineering aspects. It is an initiative as part of the Polytechnic Transformation Plan in achieving the vision to be Malaysia's number one provider of innovative human capital through research paper writings and publications. Currently, presenting the research in publication form emerged to be an important attribute in determining the performance of institutions of higher education and for staffs' promotional purpose.

It is thus my heartfelt hope that the existence of this digest will continuously provide a platform to nurture the culture of research and writing for the betterment of academia, specifically in Politeknik Seberang Perai hence making a disparity in our current thrust to actualize the Department of Polytechnic's Education mission and vision.

I would like to express my sincere appreciation to all lecturers who have contributed their research papers in this digest and to the distinguished guest reviewers for their cooperation. Finally, I would like to extend my gratitude to the Academic Journal Committee of Politeknik Seberang Perai and the editorial board for their remarkable effort.

Wassalam..

Tuan Haji Zulkifli Bin Ariffin Director Politeknik Seberang Perai

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SIMULATION OF CASCODE LNA USING LADDER MATCHING NETWORKS FOR WIRELESS APPLICATIONS

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Abstract: This paper presents a design of Cascode LNA using ladder matching network applicable for wireless applications. It's using the FHX76LP Low Noise SuperHEMT FET transistor. The LNA designed used Ladder-matching network consisting of lump reactive element at the input and the T-matching network at output terminal. The cascode low noise amplifier (LNA) produced gain of 19.23 dB and noise figure (NF) of 1.03 dB. The input reflection (S_{11}) and output return loss (S22) are -15.3 dB and -12.7 dB respectively. The bandwidth of the amplifier recorded is 1.5 GHz. The input sensitivity is compliant with the IEEE 802.16 standards.

Keyword: Cascode LNA, Radio Frequency, Ladder -Matching Network

I. INTRODUCTION

In the recent years, the wireless communication system become the main type of communication in the world[1]. The field of Radio Frequency (RF) design is a growing one as a result of demand increased for wireless products. A microwave amplifier is one of RF system that becomes the most important part and extremely advanced with the involvement of microwave active and passive circuits [1]. WiMAX, which is short for Worldwide Interoperability for Microwave Access, is novel а wireless communication technology. It is an attractive technology due to the high transmitting speed (up to 70Mbps) and long transmitting distance (up to 30 mile). The system bases on IEEE 802.16 standards and uses several bands (2.3-2.7 GHz, 3.4-3.6 GHz and 5.1-5.8GHz) to transmit data. The design of the frontend low noise amplifier (LNA) is one of the challenges in radio frequency (RF) receivers, which needs to provide good input impedance match,

enough power gain and low noise figure (NF) within the required band [2],[8].Many high aain amplifier topologies have been proposed as a way to satisfy the requirement for low power dissipation as well as good performances. The cascode techniques to produces results in a higher bandwidth and gain, due to the increase in the output impedance, as well as better isolation between the input and output ports [3],[7].

II. THEORETICAL ASPECTS

Initially, when designing an the input amplifier. and output matching network are consider to achieve the required stability, small signal gain, and bandwidth. Super high frequency amplifier is a typical active circuit used to amplify the amplitude of RF signal. Basic concept and consideration in design of super high frequency amplifier is presented in this paper. The LNA designed, the formula and equation were referred to [4]. Figure 1, shows a typical singlestage amplifier including input/output matching networks. The basic concept of high frequency amplifier design is to match input/output of a transistor at high frequencies using Sparameters frequency characteristics at a specific DC-bias point with impedance source and load Input/output matching impedance. circuit is essential to reduce the unwanted reflection of signal and to improve efficiency of the transmission from source to load [4], [5].



Figure 1: Typical amplifier design

A. Power Gain

Several power gains were defined in order to understand operation of super high frequency amplifier. Figure 2. show that power gains of 2-port circuit network with power impedance or load impedance at power amplifier. The power amplifiers represented with scattering coefficients are classified into Operating Power Gain, Transducer Power Gain and Available Power Gain [4],[5].



Figure 2: I/O circuit of 2-port network

B. Operating Power Gain

Operating power gain is the ratio of load power (P_L) delivered to the load (Z_L) to input power (P_{in}) supplied to 2-port network. Power delivered to the load is the difference between the power reflected at the output port and the input power, and power supplied to 2-port network is the difference between the input

power at the input port and the reflected power. Therefore, Operating Power Gain is represented by

$$G_{p} = \frac{Power \ delivered \ to \ the \ load}{power \ supplied \ to \ the \ amplifier}$$
$$= \frac{P_{L}}{P_{in}} = \frac{1}{1 - |\Gamma_{in}|^{2}} |S_{21}|^{2} \frac{1 - |\Gamma_{L}|^{2}}{|1 - S_{22}\Gamma_{L}|^{2}}$$
(1)

Where, Γ_{in} indicates reflection coefficient of load at the input port of 2-port network and Γ_s is reflection coefficient of power supplied to the input port.

C. Transducer Power Gain

Transducer Power Gain is the of P_{avs} , ratio maximum power available from source to P_L , power delivered to the load. As maximum power is obtained when input impedance of circuit network is equal to conjugate complex number of impedance, if $\Gamma_{in} = \Gamma_{c}$, power transducer power gain is represented by

$$G_{T} = \frac{Power \ delivered \ to \ the \ load}{Power \ Available \ from \ the \ source}$$
(2)
$$= \frac{P_{L}}{P_{avs}} = \frac{|S_{21}|^{2} \ (1 - |\Gamma_{S}|^{2})(1 - |\Gamma_{L}|^{2})}{|(1 - S_{11}\Gamma_{S})(1 - S_{22}\Gamma_{L}) - (S_{12}S_{21}\Gamma_{S}\Gamma_{L})|^{2}}$$

Where, $\Gamma_{\!\scriptscriptstyle L}$ indicates load reflection coefficient.

D. Available Power Gain

Available Power Gain, G_A is the ratio of P_{avs} , power available from the source, to P_{avn} , power available from 2-port network, that is, $G_A = \frac{P_{avn}}{P_{avs}}$. Power gain is P_{avn} when $\Gamma_{in} = \Gamma *_s$. Therefore Available Power Gain is given by:

$$G_{A} = \frac{Power \ available \ from \ the \ amplifier}{Power \ available \ from \ the \ source}$$
(3)
$$= \frac{P_{avn}}{P_{avs}} = \frac{1 - |\Gamma_{s}|^{2}}{|1 - S_{11}\Gamma_{s}|^{2}} |S_{21}|^{2} \frac{1}{|1 - S_{22}\Gamma_{L}|^{2}}$$

That is, the above formula indicates power gain when input and output are matched [5].

E. Noise Figure

Signals and noises applied to the input port of amplifier were amplified by the gain of the amplifier and noise of amplifier itself is added to the output. Therefore, SNR (Signal to Noise Ratio) of the output port is smaller than that of the input port. The ratio of SNR of input port to that of output port is referred to as noise figure and is larger than 1 dB. Typically, noise figure of 2-port transistor has a minimum value at the specified admittance given bv formula:



$$F = F_{\min} + \frac{R_N}{G_S} |Y_s - Y_{opt}|^2$$
(4)

Where, R_N is the equivalent noise resistance of two ports. F_{min} is the minimum noise factor obtained by adjusting tuners at the input of the amplifier. The normalized presented by the tuners at F_{min} is Y_{opt} . With $Y_s=Y_s/Z_o$ being the actual normalized admittance.

For low noise transistors, manufactures usually provide F_{\min}, R_N, Y_{opt} by frequencies. *N* defined by formula for desired noise figure:

$$N = \frac{|\Gamma_{s} - \Gamma_{opt}|^{2}}{1 - |\Gamma_{s}|^{2}} = \frac{F - F_{\min}}{4R_{N}/Z_{0}} |1 + \Gamma_{opt}|^{2}$$
(5)

F. Condition for Matching

The scattering coefficients of transistor were determined. The only flexibility permitted to the designer is the input/output matching circuit. The input circuit should match to the source and the output circuit should match to the load in order to deliver maximum power to the load. After stability of active device is demand, input/output matching circuits should be designed so that reflection coefficient of each port is correlated with conjugate complex number as given below [6]:

$$\Gamma_{IN} = \Gamma_{S}^{*} = S_{11} + \frac{S_{12}S_{21}\Gamma_{L}}{1 - S_{22}\Gamma_{L}}$$
(6)

$$\Gamma_{OUT} = \Gamma_L^* = S_{22} + \frac{S_{12}S_{21}\Gamma_S}{1 - S_{11}\Gamma_S}$$
(7)

The noise figure of the first stage of the receiver overrules noise figure of the whole system. To get a minimum noise figure using a transistor, power reflection coefficient should match with Γ_{opt} and load reflection coefficient should match with Γ_{out}^*

$$\Gamma_s = \Gamma_{opt} \tag{8}$$

$$\Gamma_{L} = \Gamma_{out}^{*} = \left(S_{22} + \frac{S_{12}S_{21}\Gamma_{s}}{1 - S_{11}\Gamma_{s}}\right)$$
(9)

III. DESIGN OF LNA

The proposed topology, shown in Fig. 3(a) and (b) uses a ladder matching network for input matching network port, while the T-matching network uses at the output port respectively to provider the good performance in term of stability, power gain and S-Parameter.



Figure 3(a) : Ladder matching network for Input



Figure 3(b) : T-Matching network for Output

The goals in LNA design are to maximize its gain and minimize its noise figure with sufficient linearity and impedance matching [1]. In order to achieved the key demands for WiMAX receiver characteristics, a LNA is designed should be met are the noise figure less than 3 dB and power gain should be more than 20 dB. Also good input and output impedance matching to achieved the s-parameter values.

Figure 3(a) shows, the complete schematic circuit of 5.8 GHz a Cascode Low noise amplifier. It was simulated using the same software to fine and further optimized for a better performance. For purpose of fabrication, the inductances and capacitances need to be converted to microstrip layout. Figure 3(b) shows, the complete schematic layout. The Duriod 5880 TYL-0200 was selected for fabricate. The LNA parameter is shown in Table I.



Figure 3(a): The Schematic Circuit for Cascode LNA



Figure 3(b): The Schematic Layout for Cascode LNA



Component	Width (mm)	Length (mm)
TL₁=3.24nH	W = 1.554	L=15.25
TL ₂ =1.23nH	W = 1.554	L=6.07
TL ₃ =0.40pF	W = 1.554	L=12.44
TL ₃ =0.24pF	W = 1.554	L=10.44
TL ₄ =1.55nH	W = 1.554	L=7.64
TL₅=1.62nH	W = 1.554	L=7.98
TL ₆ =0.43pF	W = 1.554	L=18.95

Table I: LNA Parameters

IV. SIMULATION RESULT

Table II shows the s-parameters output of Cascode LNA. lt is simulated using Advanced Design System (ADS). The simulation recorded that the power gains S₂₁ is19.23 dB. The input return loss S11 is -15.3 dB; overall noise figure (NF) of 1.03 dB and the output return loss S₂₂ is -12.7 dB. The reflection loss S₁₂ is -21.4 dB. These values were within the design specification and were accepted. The outputs S-parameter are shows in Figure 4a and 4b.Figure 4a shows the input and output return loss. Figure 4b show the noise figure and the stability.



Figure 4(a): S₂₂ and S₁₁



Figure 4(b): Noise Figure and stability factor (k)

S Parameters	Targeted	Simulated
Input	<-10 dB	-15.3
Reflection		
S ₁₁ dB		
Return Loss	<-10 dB	-21.4
S ₁₂ dB		
Forward	>50 dB	19.23
transfer S ₂₁		
dB		
Output	<-10 dB	-12.7
ReflectionS ₂₂		
dB		
NF dB	<3 dB	1.03
BW MHz	>1000	1500

Table II: Simulation Results

V. CONCLUSION

A cascoded low noise amplifier with ladder matching techniques has been simulated and designed. The simulation results have to meet for standards 802.16 for WiMAX applications. It is observed that the simulated and targeted results giving almost the same figure as required. It observed that the gain of the simulated analysis is 19.2 dB. It is important to take note when designing the amplifier to match the amplifier circuits. The 5.8 GHz LNA has been developed successfully and the circuit contributed to the front end receiver at the described frequency. For better performance in gain of the amplifier, it can be achieved by increasing the number of stages to improve the gain and noise figure of the design [9]. Higher gain would the coverage expand or communication distance.

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EFFECTS OF PROCESS PARAMETERS ON MATERIAL REMOVAL RATE (MRR) IN WEDM PROCESS FOR TUNGSTEN CARBIDE WORKPIECE MATERIAL

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Abstract

Electrical discharge machining (EDM) is one of a type of non-conventional machining process. The purpose of this project is to study the effect of process parameters on the material removal rate (MRR) in machining tungsten carbide. Brass wire with diameter of 0.25 mm was selected as a wire electrode while machining parameters selected were servo voltage (SV), wire feed (WF), pulse duration (t_{ON}) and pulse interval (t_{OFF}) . Two level approach of Full Factorial Design of Experiment (DOE) was applied to design the experimental table of trials, analyze the significant factors that affecting the MRR value and predict the best parameter setting for WEDM process. The total of 18 experiments were conducted using JSEDM wire cut machine and for the measurement equipments, weight scale was used for measuring before and after first cutting in order to measure MRR value. The result and data analysis shows that the MRR is proportional to the pulse

duration (t_{ON}) where low level of pulse duration gives lower value of MRR.

Introduction

Wire electrical discharge machining (WEDM) is one of the types of EDM process and it uses electro-thermal process to form the desire shape. In WEDM process, the material is removed by a series of discrete discharges between the wire electrode and the workpiece in the presence of dielectric fluid, which creates a path for each discharge as the fluid becomes ionized in the gap. The area where discharge takes place is heated to extremely high temperature, so that the surface is melted and removed. The removed particles are flushed away by the flowing dielectric fluids [1].

The wire EDM process has an ability to cut intricate components in the fabrication of dies and moulds. The selection of tungsten carbide for this research is appropriate for the workpiece due to its wider application

in toolina industries. Tungsten carbide consists of tungsten and carbon atoms and it has wearresistance characteristic over wide range of temperature with the melting point of 2800°C. Since the EDM does not involve process anv mechanical energy, the process of removal is not affected by either hardness, strength or toughness of the workpiece material [2].

The efficiency of EDM process is depending on the higher rate of removal process in shorter period of time. Due to wider applications of tungsten carbide in dies and mould industry, recent developments focus to achieve this goal but at the same time maintain the surface integrity. In previous study, the common problem in machining tungsten carbide is the difficulty to achieve high accuracy and high productivity with less damage on its surface [3]. In order to machine tungsten carbide using EDM process, the relation of machining characteristic and machining parameters involved is limited and lacking due to the large number of variables and uncertain nature of processes [4].

2. LITERATURE REVIEW

Wire EDM machine is the process of moving wire that travels along a prescribed path and removes material from the workpiece. The material is removed by a series of discrete discharges between the wire electrode and the workpiece in the presence of dielectric fluid, which creates a path for each discharge as the fluid becomes ionized in the gap [1]. The workpiece and the wire positive represent and negative terminals in a DC electrical circuit and always separated by a controlled gap, constantly maintain by the machine. The cycle of WEDM process starts with the selected area that has been discharge, is gradually heated to extremely high temperature. This discharged area will be melted and flushed away by the continuously flowing dielectric fluids.



Figure 1 : Schematic of Wire EDM process [1]

There are several machining parameters in the process of EDM that influence the machining characteristics. The electrical parameters consist of servo voltage. peak current, pulse duration. electrode polarity, wire feed and many more. While the non-electrical parameters include tension wire, cutting speed, gap size between material and wire electrode, flushing of dielectric and others. Previous research indicated that the electrical group of parameters gives more significant affects to the machining

characteristics in comparison with non-electrical parameters [2].

Based on previous studv. parameters of gap voltage, discharge current, pulse duration, pulse interval, dielectric flushing and polarity of influenced the electrode EDM process in term of surface integrity and wear ratio. The result showed that the discharge current intensity have a significant effect to surface roughness and removal rate [4].

Machining parameters are the important parts that need to be clearly understood by EDM users in order to the optimum condition of aet Few machining. changes in parameter setting during process could affect the result of machining characteristics. The efficiency of EDM cutting is depending on the parameter setting and it may be different for all type of workpiece material selected. Previous research has identified that the parameter pulse duration (t_{ON}) give significant effect to the value of MRR. The longer the spark is sustained during process, the more the removal rate however it will cause the surface of material becomes rougher [1].

Material removal rate represents the average volume of material removed from the workpiece per unit time. Based on literature study, in machining tungsten carbide, researchers addressed that EDM parameters such as peak current, voltage, pulse duration and pulse interval have a significant influence to machining characteristic including MRR [2]. Another research was carried out to study the relation between MRR and peak current in machining tungsten carbide [4], at any values of pulse duration, MRR increased with the intensity of discharge current up to 48A and then decreased when machining with higher current as shown in figure 2 below.



Figure 2 : Relation between MRR and peak current [4]

3. EXPERIMENTAL METHODOLOGY

The experimental studies were performed on JSEDM machine. The machining parameters varied throughout the experimentation are pulse on time (ton), pulse interval (toff), servo voltage (SV) and wire feed (WF). The machining characteristic that has been investigated is MRR. Brass wire with the diameter 0.25 mm was used as the wire electrode in the experiments and tungsten carbide in rectangle shape with the dimension of 40 mm long x 20 mm widths x10 mm

thickness was selected as a workpiece.

This study started with the design of data analysis, Design of Experiment (DOE) method with full factorial design as a tool and data analysis. The data will evaluate to perform the analysis of variance (ANOVA) due to identify the influence of process parameters on the MRR value.

Two level of full factorial design consists of 16 runs plus two center points were developed. Table 1 shows the range of parameter setting that has been selected for these experiments while table 2 shows the experimental plan data for machining tungsten carbide.

Table 1: Range of parameter setting

#	Name	Ab b	Un it	Lo w lev el	Cent er poin t	Hi gh lev el
A	Servo Volta ge	SV	Vol t	20	35	50
В	Wire feed	WF	m m/ mi n	8	10	12
С	Pulse Durati on	t _{ON}	µs ec	2	4	6
D	Pulse Interv al	t _{OF} F	µs ec	24	32	40

* # - Parameter setting

Table 2: Experimental plan data for machining tungsten carbide

Std	Ru n	A: Ser vo Volt age (Vol t)	B: Wire feed (mm/ min)	C: Pul se dur atio n (µs ec)	D: Pulse Inter val (µsec)
7	1	20	12	6	24
12	2	50	12	2	40
16	3	50	12	6	40
10	4	50	8	2	40
9	5	20	8	2	40
6	6	50	8	6	24
2	7	50	8	2	24
1	8	20	8	2	24
5	9	20	8	6	24
13	10	20	8	6	40
8	11	50	12	6	24
4	12	50	12	2	24
11	13	20	12	2	40
3	14	20	12	2	24
5	15	20	12	6	40
18	16	35	10	4	32
17	17	35	10	4	32
14	18	50	8	6	40

4.0 EXPERIMENTAL RESULTS AND ANALYSIS

Table 3 shows the measurement of material removal rate for each trial. The measurements of weight were taken by using weight scale while the time of processes were taken from the timer that showed on machine. Data then has been analyzed using DOE software.

Table 3: Results of MRR measurements

#	Time (sec)	Weight loss (W _b - W _a)	MRR gram/ sec	MRR gram/mi
1	186	0.11	0.0006	0.0354
2	639	0.17	0.0003	0.0159
3	377	0.15	0.0004	0.0238
4	781	0.17	0.0002	0.0130
5	431	0.12	0.0003	0.0167
6	259	0.15	0.0006	0.0347
7	580	0.12	0.0002	0.0124
8	373	0.12	0.0003	0.0193
9	214	0.11	0.0005	0.0308
10	222	0.16	0.0007	0.0432
11	260	0.22	0.0008	0.0507
12	608	0.06	0.0001	0.0059
13	437	0.11	0.0003	0.0151
14	306	0.12	0.0004	0.0235
15	227	0.12	0.0005	0.0317
16	362	0.16	0.0005	0.0265
17	311	0.14	0.0004	0.027
18	306	0.15	0.0005	0.0294

Analysis Of Variance (ANOVA) is used to determine the parameters that have significant affect on the machining characteristics. According to the analysis done using the Design Expert software, when the values of probability (Prob>F) are less than 0.05 with confidence level of 95%, it shows that the factor is significant. Factors represented by A, B, C and D which are servo voltage, wire feed, pulse duration and pulse interval respectively.

DACOD						
ANOVA for	Selected Factorial	Model				
Analysis of vari	ance table [Partial	sum of squ	iares]			
	Sum of		Mean	F		
Source	Squares	DF	Square	Value	Prob > F	
Model	1.990E-003	8	2.487E-004	7.79	0.0044	significant
А	5.588E-005	1	5.588E-005	1.75	0.2225	
В	3.906E-007	1	3.906E-007	0.012	0.9147	
С	1.558E-003	1	1.558E-003	48.78	0.0001	
D	3.570E-005	1	3.570E-005	1.12	0.3213	
AC	3.875E-005	1	3.875E-005	1.21	0.3028	
AD	2.328E-005	1	2.328E-005	0.73	0.4181	
CD	3.335E-005	1	3.335E-005	1.04	0.3368	
ACD	2.441E-004	1	2.441E-004	7.64	0.0245	
Curvature	4.877E-006	1	4.877E-006	0.15	0.7062	not significant
Residual	2.555E-004	8	3.194E-005			
Lack of Fit	2.554E-004	7	3.649E-005	291.91	0.0450	significant
Pure Error	1.250E-007	1	1.250E-007			
Cor Total	2.250E-003	17				

Response: MRR

Hierarchical Terms Added after Manual Regression

Table 4: ANOVA table for MRR

According to table 4 above, it can be seen that the model is significant. There is only one factor that affecting the MRR which is pulse duration (t_{ON}) represented by C with the probability of 0.0001. In this case, the pulse duration (t_{ON}) was significant factor to the MRR at 95% confidence. Other factors namely servo voltage (SV), wire feed (WF) and pulse interval (t_{OFF}) were not significant since their probability values were greater than 0.05 however they required to be appeared in ANOVA table to support the hierarchy.



Figure 3 Main effect plot for MRR

Significant factor of C is supported by main effect plot as shown in figure 3 in order to have clearer observation and better understanding of the response.

Based on main effects plot for MRR. the result showed that whenever pulse duration is increased from 2 µs to 6 µs, the value of MRR is also increased dramatically. The increment of MRR within varied parameter (from 2 µsec to 6 µsec) was approximately 100% means that the pulse duration is the most significant. In order to obtain higher machining MRR when tungsten carbide, the pulse duration (t_{ON}) should be set at maximum which is 6 μs.

After analyzing factors and its correlation among the factors, the best parameters were next being identified for respected responses. Design Expert software has made the prediction on theoretical setting parameters and these parameters are being considered for validation of optimization model. The constraints are clearly identified and next to be set in DOE.

Table 5: Best parameter setting for MRR

Solutions						
Numbe	r Serv	vo Voltage	Wire Feed Puls	e Duration Pul	se Interval	MRR
	1	20.00	8.01	6.00	26.56	0.0336405
1	2	20.00	8.00	6.00	26.50	0.0336235
3	3	20.00	8.01	6.00	25.42	0.0333312
	4	20.00	8.40	6.00	24.55	0.0331251
·	5	20.00	10.33	6.00	24.12	0.0331582
	6	20.00	10.52	6.00	24.01	0.0331421
1	7	20.00	12.00	5.55	24.01	0.0319551
	в	20.00	11.99	5.27	24.00	0.0311264
1	9	20.00	12.00	5.13	24.00	0.0307069
1	D	20.00	12.00	3.11	24.00	0.0248116

There are 10 solutions arranged in ranking order by Design Expert software in order to achieve the best parameter setting in able to have best performance and full optimization of MRR as shown in table 5 above. The result showed that the best parameters setting that compatible to each of responses are, SV = 20Volt, WF = 8.01 mm/min, t_{ON} = 6 µs and $t_{OFF} = 26.56 \ \mu s$ and the best performance of MRR is 0.0336405 g/min with desirability value 0.738.

5. CONCLUSIONS

Based on the results obtained by Design Expert software, only one parameter that greatly influenced the performance of MRR which is pulse duration, t_{ON} . The probability value of factor of pulse duration is 0.0001 which is below 0.05 thus considering as significant parameter.

Other parameters are insignificant factor thus give no affects to MRR. In

order to obtain high values of material removal rate in the case of machining tungsten carbide using WEDM, the longer the duration time of EDM spark need to occur during machining. This research supported by the previous researcher founded that the duration time allows electric flow to create spark constantly in longer period of time thus more material removal rate can take place [1].

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ANALYSIS OF AN ENERGY SAVING PROJECT A SEBERANG JAYA GENERAL HOSPITAL

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Abstract—The paper analyzes the justification economic of an investment proposal for four thousands units of fluorescent lights to replace existing four thousands units in a T5 fluorescent tubes in Seberang Jaya Hospital. Due to the electrical cost saving. economic justification is primary in deciding the feasibility of this undertaking. The engineering economy analysis model employed includes net present worth, benefit cost ratio and sensitivity analysis. Three factors namely initial and investment, operating costs maintenance and benefit of the proposed project were analyzed to determine their impact on the overall the economics of investment proposal. The analysis highlights a benefit return on investment. However, it is impervious to the variation in the other two factors considered initial investment and operating costs and maintenance.

Keywords- electrical energy cost saving; present worth analysis; benefit cost ratio analysis; sensitivity analysis; economic feasibility

INTRODUCTION

Economic analyses to access the feasibility and cost effectiveness of engineering project or investment are crucial in facing the benefit public in some ways. Public projects are authorized, financed, those and operated by Federal, State, or Local Governmental Agencies. Engineering projects that require economic decisions includes expenditure of capital.

They are also subjected to the principles of engineering economy with respect to their design, acquisition and operation. This paper examines the economic feasibility of proposed replacement of four а thousands fluorescent lights with four thousands of new T5 fluorescent tubes at Seberang Jaya Hospital. The new T5 fluorescent lights offer a number of operational and technical advantages such as:

- The smaller size T5 light bulbs allow for smaller luminaries.
- The smaller lamp diameter of T5 lamps makes it easier to design optical systems that distribute light in the intended directions.

• The higher light output of T5 high output (T5 HO) lamps may reduce the number of luminaries per project.

Nonetheless. the final decision on the proposed investment fundamentally based on the is engineering economic analysis, utilizina the various economic analysis models such as evaluating projects with the benefit/ cost ratio method refer GE energy-efficient T5 linear fluorescent systems (2012).

I. PROBLEM STATEMENT

government At the and private hospital in Malaysia, through energy saving programmed try to reduce the expenses in electrical usage and maintain the amount of disposal materials. At Kuala Lumpur Gleneagles Hospital, through energy saving program managed to save electrical energy and also to reduce the patient room price. As beginning, there change four thousands and three hundreds units of fluorescent lights with T5 fluorescent tubes and hospital managed to save thirty to forty percents of electrical energy saving until now.

To realize this opportunity, Seberang Jaya Hospital, through energy saving programmed of government hospital needs to replace the existing fluorescent lights with the T5 fluorescent tubes from Germany. According Operation to of T5 fluorescent lamps in luminaires(2012) the T5 lamp is developed for use in predominantly indoor application such as offices. T5 Long Life fluorescent lamps comply with IEC/ EN 60081 standard electrical, light technical and mechanical data. T5 fluorescent lamps can only be operated with electronic ballast made for the purpose. The combination will ensure

that lights technical data and lifetime of the lamps is reached. Ballast consumes <10% of the total system power, cuts unneeded power to lamp filaments and operates at instant-start high-efficiency levels. T5 lamp life recommended with sensors, extends lamp life and warranty, ANSI requirements <1.7 (A crest factor 1.41 or less is optimal to extend lamp life) and reduces spot re-lamping by 50%, group re-lamping by 15%. T5 also simplifies installation, adapting to any eliminates maintenance voltage. issues caused by striating or spiraling lamps and high performances.

B/C (Benefit/ Cost Ratio) =

 $= \frac{PW(benefits of the proposed project)}{I investment + PW(operation \& maintenance)}$

As the proposal involves investment, it is the objective of this study to ascertain the economic feasibility of the proposal using engineering economic analysis.

II. ECONOMIC MODEL

• Benefit and cost ratio method

Benefit-costs analysis is a framework for considering a range of benefits and costs in monetary terms. A variety of analytical tools are available to assist in quantifying and monetizing the various benefits and impacts of energy saving programmed in Seberang Java Hospital. The results of cost benefit analysis are rarely the sole factor in determining whether a project or policy is worthwhile. Benefit-cost analysis can nevertheless serve as a useful tool in alternative evaluation. It can be used to assess overall benefits, and to assist in prioritizing among alternatives.

The benefit-cost ratio is used as a relative measure of benefit of investment. W.G. Sullivan, E.M. Wicks, and C.P. Koelling (2009) the meaning of the benefit-cost ratio, if the time-value-equivalent benefits exceed the time-value-equivalent costs, then the project should be pursued.

Analytical models are used in this engineering economic feasibility study .The time-value of money must be considered to account for the timing of cash flows (benefits) occurring after the project commenced.

B/C (Benefit/ Cost Ratio) =

 $= \frac{PW(benefits of the proposed project)}{1 \text{ investment } + PW(operation \& maintenance)}$

$$=\frac{PW(B)}{I+PW\ O\&M}$$

Where :

PW(.) =present worth (.)

B=benefits of the proposed project

I=initial investment of the proposed

Project

O&M= operating and maintenance costs of the proposed project

• Sensitivity Analysis

engineering economy In studies, sensitivity analysis is a nonprobabilistic general methodology, readily available, to about provide information the potential impact of uncertainty in selected factor estimates. Its routine use is fundamental to developing economic information useful in the decision process William G. Sullivan, James A. Bontadelli, and Elin M.

Wicks (2000). Sensitivity analysis the degree to which a measure of merit will change as a result of changes in one or more of the study factor values. Three type sensitivity analysis techniques are breakeven analysis, sensitivity graph and combination factors W.G. Sullivan, E.M. Wicks, and C.P. Koelling (2009). For this analysis using sensitivity graph to make explicit the impact of uncertainty in the estimates of each factor of concern on the economic measure of merit.

Net Present Worth

In present worth analysis, PW is calculated at the MARR for each alternative. This converts all future cash flow into Malaysian ringgit equivalents. This make it easy to determine the economic advantage of one alternative over another. The PW comparison of alternatives with equal is straightforward. If lives both alternatives are used on identical capacities for the same time period. thev are termed equal-service alternatives.

For mutually exclusive alternatives the following guidelines are applied. One alternative calculate PW at the MARR. If PW≥0, the alternatives is financially viable. Two or more alternatives, calculate the PW of each alternative at MARR. Select the alternative with the PW value that is numerically largest, that is, less negative or more positive.

III. RESULTS AND ANALYSIS

A. Investment and Annual Costs

The various costs identified for this project are as follows :

TABLE I: INVESTMENT AND

ANNUAL COSTS

Activities	Costs (RM)	
Installation for fluorescent tubes	T5	100000
Annual operation maintenance of fluorescent lights	and T5	10000

B. Estimates of Revenues

The revenues estimated for this proposal are as follows :

TABLE II ESTIMATES OF ANNUAL REVENUES

Activitie	_	Revenue
S	5	(RM)
Annual revenue from T5 fluorescent lights		150000

Note : electrical energy savings are revenues to the company (Seberang Jaya General Hospital)

C. Cash flows

The estimates of cash flows throughout the life-cycle of the proposal are shown below.

TABLE III ESTIMATES OF CASH FLOWS

(RM thousand)		10	10	10	10	10	10	
Total cost(RM thousand)	100	10	10	10	10	10	10	
Benefit cost		150	150	150	150	150	150	
Total Revenue (RM thousand)		150	150	150	150	150	150	
Net Cash Flow	- 100	140	140	140	140	140	140	

D. Net Present Worth

Net Present Worth (PW)

= - RM100000 + RM150000 (P/A,10%,7)

= -RM100000 + RM150000(4.868)

= RM 630200.00

Since PW(i=MARR=10%) is positive, this project is economically justified.

E. Benefit Cost Ratio (B/C)

PW(benefits of proposed project)

= RM150000 (P/A,10%,7)

=RM150000 (4.868)

=RM730200.00

PW(operation & maintenance)

= RM10000(P/A,10%,7)

Cost	0	1	2	3	4	5	6	JR	M10000(4 868)
Cost-									10110000(4.000)
investment (RM	100							= R	M48680.00
thousand)									
Cost O&M									

B/C (Benefit/ Cost Ratio) =

= $\frac{PW(benefits of the proposed project)}{I investment + PW(operation & maintenance)}$

 $=\frac{RM\ 730200}{RM\ 100000+RM\ 48680}$

 $=\frac{RM\ 730200}{RM\ 148680}$

= 4.9 > 1.0 The proposed project is economical.

F. Sensitivity Analysis



Figure 1 Sensitivity Graph

Formula used for the sensitivity analysis :

PW @ 10% (RM thousands) – Varying "Revenue of electrical energy saving" :

PW(10%) = -RM100000 RM10000(P/A,10%,7)+

RM150000(P/A,10%,7) [1±P%/100%]

PW @ 10% (RM thousands) – Varying "Capital Investment" :

PW(10%) =

-RM100000 **[1±P%/100%]** – RM10000(P/A,10%,7)+ RM150000

(P/A,10%,7)

PW @ 10%(RM thousands) – Varying "Cost Operating & Maintenance":

PW (10%) = -RM100000 - RM10000

(P/A,10%,7) **[1±P%/100%]** + RM150000 +

(P/A,10%,7)

The sensitivity graph shown in Figure 1 reveals the sensitivity of the present worth to percentage changes in respective factors best estimate. The relative degree of sensitivity of the present worth to each factor is indicated by the slope of the curves (the steeper the curve, the more sensitive the present worth is to the factor). The intersection of each curve with the abscissa shows the percent change in each factor's best estimate at which the present worth is zero. It is obvious that the present worth is guite sensitive to the variation of the annual revenue electrical savings. On the contrary the present worth is not sensitive to variations in capital investment and cost of operating and maintenance.

IV. DISCUSSION

The above analyses of net present worth, benefit cost ratio and sensitivity analysis indicate positive outcome as shown in Table IV. Therefore, the proposal is economically attractive and justified for the management to consider with the high degree of confidence.

Benefits Cost Ratio indicates the

robustness of the proposal. Based on

the positive findings, the proposed

investment should be considered by

Seberang Jaya General Hospital. The

investment will reduce the electrical

energy usage at Seberang Jaya General Hospital. Additionally, the electrical costs expenses of the years will be reduced significantly. This is a viable way of achieving sustainable electrical cost savings.

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the high deg	Analysis Model	Authors would like to acknowledge the support of Faber Medi-Serve Sdn Bhd, Seberang Jaya General Hospital and Universiti Teknologi PETRONAS for this			
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DEVELOPMENT OF mE-BOOK FOR LANGUAGE LEARNING USING ATID MODEL

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ABSTRACT

The study of reading comprehension is one of the most important in language learning, but often viewed as a difficult to teach. This paper discusses the development of a portable learning application called multimedia E-book (mE-book) using Alessi & Trollip's Instructional Design (ATID) model to improve reading comprehension among Polytechnic students. А mE-book was designed systematically and developed using multimedia elements to assist and motivate students to read in their language classroom. It is highly anticipated that the creation of this learning application would be a viable alternative approach for the students to read in a richer, engaging and motivating language classroom.

Keywords: mE-book, ATID model, reading language learning

1.0 INTRODUCTION

In line with the National E-learning Policy (DePAN) [1], Polytechnics have been swiftly extending the use of multimedia technologies to improve the quality of learning. Among the initiatives adopted to place more importance on adapting the elearning policy is by extending the prudent use of the multimedia in instructional technology that could useful serve as а learning supplement to promote learning that effective, meaningful is and enjoyable. The use of new technologies shows that it improves students' motivation, attitudes and interest [1]. Based on the call of MoHE's policy, a multimedia E-book was designed and developed to be implemented in the Polytechnics' English module classroom. It is an attempt for the educators to introduce a fun, engaging and motivating multimedia reading material based on appropriate learning theories. This paper provides a description of the and development design of multimedia E-book (mE-book) for language learning in Polytechnic classroom. In addition, this paper also outlines the features of the developed mE-book.

2.0 DEVELOPMENT OF mE-BOOK

Multimedia E-book (mE-book) is a multimedia electronic book, which

incorporates multimedia elements such as text, narration, visuals, videos and animations. It has 'Read to Me' button feature that narrates onscreen text when it is clicked. During the narrating process, the text is highlighted concurrently.

The content of the multimedia E-book is presented in an interactive way by adding graphic. colourful text. animation and sound Those elements will attract readers to read more as animation and graphic can convey more information [2]. The integration of multimedia features into E-books, such as text, sound and videos in the classroom is becoming a potential teaching and learning tool in language learning especially English as teaching reading in Second Language (ESL) classes. When learners read multimedia Ebook, they can hear and see and this provides greater recall of the story rather than printed storybook. This will interest them in reading and improving their literacy.

As the instructional technologies develop, mE-books support flexible learning strategies. Flexible modes of learning have the potential to increase students' engagement in learning by giving them more control over the nature of the learning content and activities, and over the time and place they study [3]. In addition, mE-books can be used to improve students' reading skill and feel the students would more motivated in learning a second language by integrating the technology into teaching and learning session.

Following the paper book metaphor, mE-book also integrates the hypermedia technology that reduces the cognitive loads of the learners when using the new technology. This multimedia E-book involves three sections; front section, main section, and back section. Each of this section is further made up of subsections as described in Figure 1. Main section can have as many chapters as required and in each chapter, there is no limit to the number of required pages that are integrated with visuals, voice, music, text and videos.



Figure 1. Structural components of mE-book

This mE-book technology provides a multi-genre reading space that engages and draws students into a different interaction with reading text [4]. These features can enhance literacy and reading skills among student with various cognitive styles. mE-book, specifically, also appeals to multiple intelligences as it provides embedded mixture of visual (text. graphics or video) and audio (sound, music or voice) modalities that enables students to learn through their preferred modality [5]. Students are able to learn the pronunciation of the text as they are reading, watch the graphics and videos to create and integrate 'schema' to understand better as well as read the text freely at their own will. The combination of text-audio-visual elements in mEbook offer students a welcome change from routine lectures in the classroom and also arouse their

interest in learning various types of modalities.

Designing mE-book for language learning needs greater effort in the presentation of the book contents since this will partly determine the success of the learning process. It is important to carefully design the way the content is structured, organized. and presented. The overall development of the mE-book used and Trollip's Alessi Instructional Design Model (2001). The overall process of designing and developing the mE-book proceed over a sevenmonth period in three broad phases: planning, design and development.

3.0 ALESSI AND TROLLIP'S INSTRUCTIONAL DESIGN (ATID) MODEL

The development of the mE-book is Alessi based on and Trollip's Instructional Design (ATID) model This model provides (2001). а standard-based but flexible approach, which involves a cycle of drafting, evaluating and revising. There are three phases in this model, which are planning, design and development. Each phase is subdivided and adapted to meet the needs of the development process. This model also incorporates ongoing evaluation throughout the three phases, which prevents problems from occurring at the end of the development phase. Figure 1 illustrates the main steps used as suggested by Alessi and Trollip when setting out each phase of the project [6].

3.1 Rationale in using Alessi and Trollip's Instructional Design (ATID) Model

Alessi and Trollip suggest that when selecting instructional design models,

developers of the instructional material have to understand the strengths and weaknesses of each instructional design model to optimize their use in the appropriate instructional design strategy [6]. A instructional number of desian models were analysed beforehand and Alessi and Trollip Instructional Design (ATID) model was chosen as the design and development model. The main rationale to use the ATID model for design and developing mEbook was based on suitability and flexibility of this model. This model was also chosen for its principles of cognitive psychology and emphasis on creativity.

ATID model is a design-orientated instructional material development model rather than a descriptionprovides orientated because it guidelines for the development of mE-book with appropriate combinations of challenge, support, direction and structure. These guidelines are broken into smaller, more detailed components. Focusing on smaller components allows for more choices to be made and greater customization of the learning event as it increases the chances of attaining the learning goals: to improve ESL reading comprehension and motivate students to read.



Figure 1 Alessi and Trollip's Instructional Design Model (Alessi & Trollip, 2001)

The ATID model was also chosen for its suitability to be deployed to any problem. It is suggested that the use of this model can be utilized in an educational environment and integrated with any learning principles or strategies. According to Alessi and Trollip, the ATID model is a set of standards for creating a robust, effective multimedia product such as mE-book, that introduces techniques developing for designing. and integrating the various components of multimedia such as text, graphics, sound, video and animation [6].

In addition, ATID model is a flexible model that can be adapted according to the developers' own individual needs and style of work [6]. The development approach of this model could be adjusted to accommodate the developers' own philosophy and environment. It is suggested that the system developed could be changed and modified in accordance with future requirements and the developer may enhance the developed instructional material at any point of time.

This model is also driven bv principles of cognitive psychology; perception and attention, encoding, comprehension. memorv. active learning, motivation, locus of control, transfer of learning and individual differences, which were used in designing the mE-book. These principles provided the researchers with the framework for identifying learners' needs and the learning goals that affect learner outcomes [6].

Another rationale behind the decision of choosing ATID model was that this model emphasised on creativity. Alessi and Trollip stated that ineffective multimedia instructional programs are often developed because of a very structured and rigid instructional design wherein the of the developers instructional materials were not given an opportunity to be creative [6]. Without creativity, the instructional material being developed is unlikely to be engaging, and cannot be useful for the teaching and learning process [6].

4.0 THE PLANNING PHASE

The first phase in the ATID model is planning. There are four steps identified in this phase. The steps are determining the scope of the project, identifying the learners' characteristics, establishing the constraints, and determining and collecting resources [6]. Each of the steps is explained as follows:

- i. Define the scope: To ensure the content scope of mEbook that needs to be learned is relevant;
- ii. Identify learners' characteristics: To

understand the nature of the intended target population in terms of age, educational level. reading level. motivational level and cognitive styles. In this study, selected population the were Polytechnic samples students:

- Establish constraints: To narrow the needs of the product: budget, timeline, intended hardware, software and content permission (graphical, audio and video);
- iv. Determine and collect resources: To find and gather all the resource materials needed to develop the product.

4.1 Define the Scope

The first step in planning is defining the scope of the content to be learned, the desired outcome and the learners' level of competence [6]. This step requires the developer to know accurate information so that the designing and developing process of the instructional material will deliver the intended learning outcome. For this study, the scope of the content was ESL reading and the goal of the mE-book was to improve students' ESL reading comprehension and motivate them to read in English.

4.2 Identify Learners' Characteristics

According to Alessi and Trollip, to design a good instructional material, the developer must understand the nature of the intended population: the learners and their characteristics such as age, educational level, reading proficiency, motivation and prerequisite skills [6]. The population of the intended users in this study was the first semester students at Polytechnics.

To obtain a broad perspective of the Polytechnic students' characteristics, the researchers made an overall Chart of Learner Characteristics (refer to Table 3.1) which was adapted from Alessi and Trollip, based on the distributed students' self-assessed characteristic form [6].

Table1ChartofLearnerCharacteristics

Item	Characteristics
Age	19 years old
Educational level	Diploma level (Polytechnic)
Reading level	Basic
Prerequisite knowledge	Basic English
Facility with a computer	Intermediate
Typing ability	Average
Access to computers	Yes
Access to Internet	Yes (Most of the students have a personal laptop)
Time availability	Anytime
Physical disabilities	None
Cognitive style	Field-dependent and Field-independent

(Source: Adapted from Alessi & Trollip, 2001)

4.3 Establish Constraints

Alessi and Trollip explained that it is important to establish the constraints under which the project will be running [6]. They clarified that the developer should have a thorough consideration of all the issues that will affect the design and development of the project, as well as the delivery and operation of the final product. Such constraints are hardware and software constraints, existing content copyright and permission constraint. It is good to consider all the constraints during the planning phase itself as the developer will know the basic requirements needed for developing good multimedia а instructional material.

То mE-book. develop the the common constraint is the hardware on which the instructional materials will run. mE-book generally demands a basic multimedia computer with graphic card, sound card, video card, speakers and a CD-ROM drive. As for the software constraint, mE-book developed was using Articulate Storyline software that integrated text, araphics. sound. video and animation. Each of the multimedia of mE-book components was developed using several software such as Audacity 2.0, Real Player, Swish Max and Adobe Photoshop CS6. This study prepared the mEbook in HTML and Flash format that are capable of running on Windows and Mac operating systems.

As for the content constraint, the researchers produced most of the elements in mE-book. However. some of the elements such as videos were taken from other sources, of which permission to use was beforehand. obtained Therefore. there was no issue of copyrights in the elements used.

4.4 Determine and Collect Resources

The final step in this planning phase is determining and collecting resources. This includes every item or source of information that is essential or aid to can the instructional development effort [6]. It is important to gather resources that are relevant to the subject matter such as references to find the best way to organize and present the content to produce the desirable learning outcome. In this study, the subiect matter resources were textbook modules, reference books and printed materials by Polytechnic Education Department. Subject matter experts were also consulted to provide a better view of the instructional content and the scope of the chosen topic.

Resources relevant to the instructional development process included text and manuals about instructional design of mE-book such as storyboarding sheets, production files, visual displays, video assets, sound assets and computer software for the development stages such as Articulate Storyline, Adobe Photoshop CS6, Audacity 2.0, Real Player and Swish Max.

Resources relevant to the delivery system are the hardware and software at the execution level, mEbook demands basic multimedia personal computers or laptops equipped with headsets or speakers and CD-ROM drives. Moreover, the final delivery of the mE-book is in HTML and Flash formats that are capable of running on Windows and Mac operating systems.

5.0 THE DESIGN PHASE

The second phase of the development process is designing the mE-book. Alessi and Trollip suggested that it is useful to lay out the purpose of the design as well as to discuss design documents that will suit the defined users and facilitate the intended learning outcomes [6]. In this study, the intended users were Polytechnic students and the learning outcomes were to improve their ESL reading comprehension and engage them in reading. In this phase, the requirement and constraints of the project were linked to the intended outcomes to produce mE-book that engages these students in such a way that reading takes place in an effective and efficient manner. It is

important to present the mE-book in a way that is relatively easy to understand and has structured information that maximizes interest, learning and retention [6].

The design phase in the ATID model includes four steps which are developing content ideas, preparing storyboard, preparing scripts and preparing a prototype [6]. Each of the steps is explained as follows:

- i. Develop content ideas: to design and develop learning sequences based on learning objectives, and user interface that includes the basic look of the product, navigation techniques, font sizes, colours, resolutions and so on;
- ii. Prepare storyboard: develop a flowchart depicting the details of navigation, and the flowchart. based on organize visual а representation of the product design that includes the details of the text, visuals and other inputs. which are relevant to the product;
- Prepare scripts: the scripts of narration, which give a proper flow to the content, must be prepared in a way that suits the intended user;
- iv. Prepare prototype: a design or the screen layouts can be developed using paper, card or foams. For mE-book, the prototype is a working system, but with limited functions.

5.1 Develop Content Ideas

The first step of the design phase is to develop ideas for the content and a creative approach to deliver it. Alessi and Trollip suggest that there are two processes to develop initial ideas for content; (i) brainstorming the content and learning approaches, and (ii) elimination of some initial ideas [6]. These initial ideas were then revised and the non-relevant ones were eliminated based on its suitability for the intended learners, relationship of the content and learning goals and the time needed to learn the content.

In this step, the design documents that contained all the necessary information to produce the desired product were also created. These desian documents contained important user interface designs such as the basic look of the product, navigation techniques, font sizes and colours, resolution of the graphics, the quality of the sound and so on, in line with the content design which was used in the development phase. The researchers chose three types of techniques: navigation buttons. hotspots and hyperlinks, for the development of mE-book. The background colour chosen for the mE-book is brown as brown is a neutral colour, which comforts the readers, has the ability to attract and enhance readability [7]. The resolution of the graphics is 72 dpi (dot per inch) which is appropriate for web designing. As for the narration voice used in mE-book, it was generated using a text-to-speech software.

This step also emphasized on identifying the types of learning and methodology. In designing mE-book, the researchers identified the learning type as cognitive psychology that emphasised comprehension, transfer of learning, motivation, perception and attention. The researchers had decided to use hypermedia-based instruction (HBI) as the methodology to be used in mE-book. This is

because HBI comprises multiple nodes containing either individual or combined various media forms such as text, sound, graphics and movies. The structure of HBI enables users to move from one node to another at their own will, accessing information from nodes that are more associative and are delivered in a non-linear allows sequence which areater control and interactivity [8]. The HBI chosen as format was also it individual accommodates the differences and improves academic achievement [9] [10].

Alessi and Trollip also suggest that a good learning sequence for learning content should begin with skills that only require the learners to use and combine skills that they already have, to learn more complex ones [6]. Therefore, task analysis was carried out to distil complex skills into component skills so as to determine an efficient learning sequence for learning the content. For this study, the researchers created a task analysis for the chosen topic, which was developed into the contents of mE-book later.

From the task analysis, a detailed flowchart was constructed to depict the programming and navigational details that show the structure and sequence of the content for mE-book. It is a simple depiction of the content structure of the mE-book.

5.2 Prepare Storyboards

Storyboards are a series of screen sketches on how to organize the flow of an instructional material and a list of its contents. It provides a visual representation of the project's design and details. In this study, the storyboards are simple graphical sketches that give a rough presentation of the final work to be produced. For this studv. the storyboarding falls into the category of low fidelity throwaway version that became the guidelines for the researchers on the descriptions of interactions and navigation, audio content, video content and elements of presentation on each screen of the mE-book. This helps the researchers to define the parameters of mE-book within available resources and time. organize and figure out what medium to use for each part of mE-book. A sample layout of the mE-book storyboard is shown in Figure 2.



Figure 2 Sample Layout of mEbook Storyboard

Alessi and Trollip divided storyboarding into a number of component sub-steps [6]. It is a requirement for the developer to produce the actual instructional text messages that learners will see in the program. This includes the primary text and secondary text such as directions. menus. transitions. prompts, hints, progress information and exit messages [6]. It is also important to draw and revise the visuals such as graphics, animations and videos, and plan other output such as sound, background music and narration. Unlike text, the

graphics and sound output are not produced on the storyboard documents. The storyboards only comprise the marginal descriptions of the elements.

mE-book storyboards that were produced were also reviewed by the subject matter experts and content experts from Polytechnics. This is to examine the content accuracy, sequences, clarity of the text and graphics and other details. Based on the reviewers' comments. the storyboards were revised again to develop effective and efficient instructional material for language learning.

5.3 Prepare Scripts

Scripts are primarily the spoken text and for video production, and are stage directions describing what actors should do [6]. In this study, mE-book includes narration; therefore, it is important to produce good scripts for the narration. The narration script was written exactly as the on-screen text.

5.4 Prepare Prototype

The prototype is the initial version of a functional mE-book. It contains the look and feel of the real instructional material. For the purpose of this study, a medium-fidelity prototype was created using the computer. The prototype design of mE-book was designed using Adobe Photoshop CS and Microsoft Power Point software. However, this prototype design is just the screen layouts of the working model, which portray the look and feel without any working functions except for the navigational links. Developing а simple visual representation of the content ideas,

navigation and user interface design gave the researchers a basic idea of how to develop a functional mE-book using an authoring software. This prototype was again reviewed by the subject matter and content experts, and based on their feedback, the prototype revised was for modification. The actual mE-book developed was based on the modifications of these medium-fidelity prototype designs.

6.0 THE DEVELOPMENT PHASE

The third phase is the implementation of the prototype's design, which includes all the computer programming necessary to make a functional program, the production of graphics, audio and video materials, and development of the support materials [6]. The development phase involves converting the storyboard and prototype to a working system. There are eight steps involved in this phase: production of text, graphic, audio and video, assemble all the pieces, prepare the support materials, do an alpha test, make revision and do the beta test. Each of the steps is explained as follows:

- i. Produce text, graphic, audio and video: The researchers finalized the font, button, graphics, animations, video and narration that were used;
- ii. Assemble the pieces: All the elements produced were assembled together into one product;
- iii. Prepare the support materials: Manuals were prepared to describe the navigational flow of the product, its specifications and also the content;
- iv. Do an alpha test: In this alpha test, the content expert, user interface expert,

language experts and potential users reviewed the mE-book;

- Make revisions: Revisions on the product was made based on the feedbacks and comments received during the alpha test to solve any problems that arose and to improvise the mE-book;
- vi. Do the beta test: This is the full test of the final product that has been improvised. This test was administrated to the target users.

6.1 Produce Text

There are two types of text produced for mE-book: primary text and secondary text. Primary text is text that displays the essential instructional content such as definitions, descriptions, principles, questions asked and responses, while the secondary text displays directions. menus. transitions, prompts. hints, help, score and information, progress and exit messages [6]. In mE-book, the text font used for both primary and secondary texts was 'Calibri' and their font size varied from 14 to 80, depending on its purpose. 'Calibri' font is a sanserif font mainly used for writing on-screen text as it is easy and comfortable for the users to read both from near and far [11]. The rationale for using 'Calibri' font is that this font is a standard form that is available on all operating platforms (Windows and Mac) and it is appropriate to be used both in text sizes and larger headline sizes [12].

The text materials were produced directly in the Articulate Storyline authoring software that is used to develop the mE-book as this software allows text production similar to Microsoft Word.

6.2 Create Graphics and Animation

According to Alessi and Trollip, it is important that all the graphics that are and produced created for the instructional material have the same level of richness and character [6]. The quality of the graphics should match the suitability of the content and the purpose of the instructional material. The size of the graphics should be taken into account so that the users need not wait a long time for the graphics to be displayed. In this study, the graphics designed for mE-book were two dimensional (2D) cartoon characters with a resolution of 72 dpi (dot per inch). These graphics were produced using Articulate Storyline, Illustrator and Adobe Photoshop CS6.

Cartoon characters were used as graphics in the mE-book to maintain the neutrality and non-bias representation [13]. Since the mEbook was designed with embedded narration, an image of a character that presents the narration voice is recommended [14]. Kumar opined that using characters in multimedia instruction adds a 'human' touch to the learning material, as people are more attracted to other people [16]. This helps to connect learners to the content, thus, engage them and hold their attention [15] [16]. These findings were also supported by Clark and Mayer, who justified that students learned more if on-screen characters [14]. However, were used the researchers did not use lifelike images in the mE-book as it is not an essential component in e-learning and research has revealed that there significant difference is no in students' learning gain or

engagement between instructional material using human-like, animated or static characters [17].

Additionally, 2D animations were also used in the mE-book. These animations were created using two software, namely, Swish Max and Xtranormal.

6.3 Produce Audio and Video

mE-book contains narration that readaloud the on-screen text for the students. This narration audio is important as it gives a sense of interacting when the students are using mE-book. According to Alessi and Trollip, listening to the spoken word is often much easier, especially for students with poor reading skills [16]. The narrative format was found to be engaging and helped the students to read [18]. The narration also helped the students to organize information and made it easier to process them. It was revealed that combining on-screen text, characters, and underlying narration to present learning content were particularly effective [19].

For this study, the narration audios were created using the text-to-speech (TTS) component that is embedded in Xtranormal software. The raw audios were then accentuated using a program called Audacity 2.0. All narration audios were created in .mp3 format to reduce the size of the file.

The rationale for using computergenerated voice rather than human voice is that the computer-generated voice has been proven helpful to students whom English is not their first language. Computer-generated voices are more consistent in pronunciation with minimal accent and speak at a more steady pace [20]. Another rationale is that researchers have revealed that using either human voice or computer generated voice in instructional materials, affects students' learning outcome equivalently [21] [22] [23].

mE-book also contains short video clips that illustrate people's behaviour in certain situations. These video clips were intended to show the effects of body language and words, especially on the greeting and introducing aspect, which are difficult to illustrate using graphics and still photographs. For the video production, the researchers used videos developed by language experts, and the permission to use the videos were obtained beforehand. The original format of the video clips was .avi format, which was later trimmed and converted to .flv format to reduce the size of the files. The software used for video editing was Real Player.

6.4 Assemble the Pieces

When all the pieces of a program have been produced, they must be assembled to create a functional instructional material All [6]. multimedia elements such as narration assets, graphics assets, audio assets, video assets and animation that were produced for this study were integrated into one piece to create a functional mE-book. This process was done using Articulate Storyline authoring software.

Articulate Storyline is a powerful and intuitive e-learning development with simple yet useful software features and abilities. It needs a minimal learning curve, as it is easy to explore and use. Articulate Storyline maintained a user interface design that is very similar to
PowerPoint. but it caters for multimedia instructional material authoring as the developer can build simple or complex interactivity using triggers and timelines. Storvline also gives the developer an easy option to publish the developed instructional as Flash, HTML5, or iOS format for iPad addition. this app. In authoring software has built-in sets of illustrated characters that can act as avatars or characters in the instructional material developed. It also has an extraordinary multimedia support as it is easy to add multimedia files to the instructional material being developed.

Figure 3 illustrates the interface design of Articulate Storyline that was used to develop the mE-book.



Figure 3 Interface of Articulate Storyline

6.5 Prepare Supporting Materials and Documentation

In this study, the development phase also includes creating and providing supporting materials to provide relevant information and guidelines for the end users (students and lecturers) and future developers. There are three types of supporting materials: (i) instructor manual, (ii) student manual, and (iii) operation manual. However, for this study, only one operation manual was created that can be used by all users. This manual operation provided information such as equipment needed, procedures to start-up, how the programs run, summary of the contents and information on the navigation flow of the lesson.

The operation manual was created using Microsoft Word 2007 and for the final delivery, the manual was converted to .pdf format using Adobe PDF Maker.

6.6 Alpha Test

In addition to the ongoing evaluation as suggested by Alessi and Trollip, an alpha test was carried out to identify and revise the instructional material to solve as many technical and content problems as possible [6]. This study employed an alpha test for the mE-book that was developed. In this alpha test, ten potential target users from **Polytechnics** were requested to review the mE-book to evaluate the content, user interface, navigational flow. functionality. language and interactions. The students were asked to give their comments during the reviewing The comments process. and feedbacks from the alpha test such as the interface and navigational problems were taken into consideration to improve the usability of the mE-book.

6.7 Expert Reviews

Expert reviews are conducted by usability experts, who utilize their knowledge and experiences to spot problems and recommend modifications to improve the usability

instructional product of an or instrument [24] [25]. For this study. the expert review process was conducted concurrently with the alpha test. In this process, five evaluators were asked to review and evaluate the mE-book in terms of its content. language, user interface and the navigational flow of the mE-book. The included evaluators two content experts, two language experts and a user interface expert. The two content experts, who have more than eight years of experience teaching English modules in Polytechnics, were requested to review the accuracy, significance. sequencing and comprehensiveness of the contents. They revealed that the contents of the mE-book were in line with the Polytechnics' curriculum. They also suggestions provided some to improve the contents of the mE-book.

The two language experts chosen to review the mE-book were also from Polytechnic. They were asked to review the usage and accuracy of the language of the content. The experts made some corrections and gave some recommendations. In addition, an instructional design expert from the Centre of Instructional Technology and Multimedia. Universiti Sains Malaysia, was asked to go through the mE-book to evaluate the instructional strategies used. The expert also examined the user interface design and evaluated the flow and navigational aspects of the mE-book.

All the experts were given a courseware evaluation form that served as a guide for evaluation. Modifications on the mE-book were made based on the recommendations and comments of the experts.

6.8 Make Revisions

After the two evaluation processes (alpha test and expert reviews) were conducted on the mE-book, they were revised based on the evaluations' feedbacks. lt is suggested that the evaluation at this stage helps to remove any remaining drawbacks and stabilize the program [6]. However, the researchers were very careful not to introduce any new problems while fixing the old ones. The supporting documentation was also updated based on the revisions made.

6.9 Beta Test

The final step is to conduct a field trial known as beta test, with the real target users. In this study, this beta test was done on a small group basis (five students) to validate the mEbook in the actual setting. The validation of the mE-book was done determine how the to well material instructional worked to deliver the intended learning outcome. The findings from this beta test helped the researchers to further revise and improve the mE-book before the actual pilot study was done in the actual learning environment with the actual learners. Again, the supporting documentation was updated based on the revisions made.

6.10 Pilot Study

Two pilot studies were conducted during the evaluation process: alpha pilot study and beta pilot study. Both pilot studies were carried out with the intended users, but from an earlier batch of the intended sample who were not involved in the actual intervention treatment. These two pilot studies followed the actual treatment procedures.

The alpha pilot study was aimed at identifvina the problems in the developed mE-book as well as to validate the research procedures. Sixty students were involved in the alpha pilot study. It was intended to find out whether the students had any difficulty in using the mE-book during the treatment technically or academically. At the end of the alpha pilot study session, the researchers interviewed students to obtain their verbal opinion of the mE-book's user interface and functionality. The students commented on the design of the mE-book and gave suggestions to be incorporated in the mE-book. These comments and feedbacks from the alpha pilot study were taken into consideration to improve the efficacy and usability of the mE-book.

In addition, after improving the instructional material based on the feedback from the alpha pilot study, the researchers carried out another small-scale beta pilot study using five students to further revise and identify errors, before the actual experimental treatment was done in the actual learning environment with the actual learners.

7.0 FEATURES OF ME-BOOK

Multimedia E-book (mE-book) is not only limited to static text and pictures; it is also integrated with video, audio, animation, and even interactive simulation [26]. Figure 4 illustrates the features of mE-book.



Figure 4 Features of mE-book

mE-book is incorporated with multimedia elements such as text. visuals. videos narration. and animations. It uses the text-speech element in its design. It has a 'Read to Me' button feature that narrates text when it is clicked. During the narrating process. the text is highlighted concurrently. This element of text-speech has been emphasized and advocated for integration with reading input [27] [28], as the combination of textspeech materials offer readers a welcome change from routine reading and arouse their interest in the reading process through various types of modalities. It also contains features such as navigational links, interactive guizzes and feedbacks, assessment scores and a certificate of completion.

8.0 CONCLUSION

This paper provides the detailed processes of designing and developing mE-book for language learning in Polytechnic classrooms. For this purpose, Alessi and Trollip's Instructional Design (ATID) model provided all the essential support and guidance to develop the mE-book in

its planning, design and development phases. The evaluation and revision processes were carried out throughout the development of the mE-book.

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Mathematical models of thermal energy storage using ε -NTU method

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Abstract. **Mathematical** representations of the encapsulated phase change material (PCM) within thermal energy storage (TES) models are investigated. These models applied the Effectiveness - Number of Transfer Unit (ε -NTU) method. The performance of a TES is presented in terms of the effectiveness considering the impact of different variable parameters. The mathematical formulations of these two models summarized will be used in future research with the suggestion to maximize the heat transfer prior to optimizing the configuration of the encapsulation through a parametric analvsis.

Introduction

The thermal resistance affects the discharge temperatures from a PCM storage system. In cooling applications, discharge temperatures are specified by the cooling requirements of the load. Ideally, the

discharge temperature should equate to the phase change temperature of the PCM. However, due to thermal resistance, the discharge temperature will be above this temperature, and therefore a lower temperature PCM is reauired to achieve the same discharge temperature. As a result, charging the PCM is more energy intensive, as the efficiency of cooling systems reduces when lower cooling temperatures are reauired. Consequently, energy efficient storage is dependent on minimising the thermal resistance to heat transfer in the PCM storage system, effectively minimising the temperature difference between the heat sink and heat source. This approach minimises any sensible storage in the PCM which is defined by the change in temperature of the material, and as a result, sensible energy storage is ianored.

The outlet temperature from the PCM system determines the heat transferred between the heat transfer fluid and the PCM and consequently, thermal performance can be expressed in terms of heat exchange effectiveness. This effectiveness directly relates to the thermal resistance in the PCM storage system as explained by Belusko and Bruno [1].

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Belusko and Bruno [1] define it with respect to the proportion of phase change extending the previous research by Ismail et al. [2] that had specify a local effectiveness which varies with time. Tay and other researchers have experimentally determined the average effectiveness over the phase change process for a coil in tank PCM storage system [3,4,5].

The average effectiveness for PCM encapsulated in spheres has been experimentally determined by the author and team [6]. Using this average effectiveness concept, this work combines this factor with the compactness factor, to develop the energy storage effectiveness for a PCM system. Therefore, this paper discusses the main formulations and theory of using PCM for energy storage as well as proposed future research work to be done.

The ε -NTU formulations

If the heat transfer rate does not vary with time, the effectiveness of a PCM storage system is defined by Eq. (1). Therefore, over the period of phase change, the actual energy stored and released is defined by this effectiveness.

$$\varepsilon_{c,d} = Q_{act} / Q_{max} = (T_{in} - T_{out}) / (T_{in} - T_{pcm})$$

(1)

Where ε_c and ε_d are charging and discharging effectiveness respectively, Q_{act} is the actual stored energy, Q_{max} is the maximum possible or theoretical stored energy, T_{in} and T_{out} are the inlet / outlet temperature supplied-to / exited from the PCM storage tank respectively and T_{pcm} is the phase change temperature of the PCM used in the tank.

Eq. (1) explains the principle of effectiveness in a TES in the general Therefore, form. the maximum effectiveness of unity corresponds to the outlet temperature being equal to the phase change temperature. However, heat flows from the heat transfer fluid (HTF) to the PCM and exchanges heat at the phase change temperature. At the phase change temperature the specific heat of the PCM is infinite and therefore this process can be represented by the ε -NTU equation for condensers and boilers. Again, the equation defines the average NTU over the phase change process as the NTU is a function of the thermal resistance between the PCM at the solid/boundary, defining the phase change front, and the HTF.

Therefore, the effectiveness of heat absorbed and released by the PCM to the HTF can be calculated using Eq. (2).

$$\varepsilon |_{T} = 1 - e^{-NTU}$$
(2)

Where ε is the phase change effectiveness and the number of transfer unit, *NTU* can be expressed as below:

$$NTU = \frac{UA}{\dot{m}Cp} = (\frac{1}{R_T})(\frac{1}{\dot{m}Cp})$$
(3)

The total multiplication of the overall heat transfer coefficient, U and cross-section area of the tank normal to the direction of the flow, A is replaced, since

 $UA = 1/R_{T}$ (4)

Where the total heat resistances in the PCM tank, R_{T} is involved. Meanwhile \dot{m} is the mass flow rate and Cp is the specific heat of the HTF respectively.

Generally, the expression for the total thermal resistance for PCM in a tank is shown in Eq. (5).

$$R_{T^*} = R_{pcm} + R_{enc} + R_{htf}$$
(5)

Combining Eq. (2) and (3) gives,

$$\varepsilon \big|_{T} = 1 - e^{\frac{-1}{mCp_{htf}R_{T}}}$$
(6)

Consequently, the equation is based on the local *NTU* which varies with time. However, rather than using time, one can apply the phase change fraction, δ , into this equation. Therefore, the average phase change effectiveness calculated using the ε -*NTU* method, is then calculated by the integration of ε |_T to the limit of 0 to 1.

$$\overline{\varepsilon}_{ntu} = \int_{0}^{t} \varepsilon \big|_{T} d\delta$$
(7)

Accordingly, the final expression of this equation is presented by the equation below:

$$\overline{\varepsilon}_{ntu} = \sum_{i=1}^{\tau} \frac{1 - e^{\frac{-1}{mCp_{hyf}R_T}}}{\tau}$$
(8)

Where τ is the total number of time steps during phase change.

Belusko and Bruno model

A generic representation of the mathematical model incorporating the ε -*NTU* method on PCM thermal storage systems with parallel plates has been done [1] and has been further described in Belusko *et al.* [7]. The model with the specific dimensions of PCM slabs and gaps for fluid flow has been illustrated in Figure 1.



slabs [1]

Ideally the volumetric shrinkage of the PCM phase front could be represented by the rectangular profile as shown in Figure 2. This assumes heat transfer within the PCM slabs as a two-dimensional process with the phase change front moving from top to bottom and from upstream to downstream.



Figure 2 Approximation of solid/liquid front during phase change [1]

This thermal resistance is a function of both the heat transfer area and the overall heat transfer coefficient, from Eq. (4). The equation is solved by applying Eq. (9), the overall heat transfer coefficient and Eq. (10), the heat transfer area correlation.

$$1/UA = 1/hA + (H - y)/kA$$
(9)

Eq. (9) assumes that the axial heat conduction is negligible due to the low thermal conductivity of the PCM [8], and natural convection within the PCM is ignored which is applicable to thin slabs [9]. The heat transfer area, A is rectangular in shape with the PCM slab width of W and length of the flow path, x. Therefore, A = xW. To calculate the average phase change effectiveness, one can use Eq. (2). This equation ignores the sensible component in the TES system. As the latent heat transfer occurs, the phase change fraction for a PCM slab could be represented by δ:

$$\delta = xy/LH$$
(10)

Applying Eq. (10) into Eq. (4), the total thermal resistance in PCM slabs can be defined as:

$$R_T = 1/hxW + H/kxW + \delta LH/kx^2W$$
(11)

Hence the heat exchange effectiveness of the TES can be calculated using the equation below:

$$\varepsilon = 1 - e^{\frac{-1}{\hat{m}Cp\left(/hxW + H/kxW + \partial LH/kx^{2}W\right)}}$$
(12)

Performing a single differentiation on the above equation with respect to dx and equating it to zero, one can determine the minimum effectiveness, $\varepsilon_{min} = 1 - \exp(-hLW\delta/mCp)$. Belusko and Bruno [1] identified that this equation was valid only if $y \le H$, therefore from Eq. (10), $x \ge \delta L$. If this condition is met then the phase change profile is defined as two dimensional. If this condition failed than the phase change profile was one dimensional with the front vertical moving from upstream to downstream. For a one dimensional front, the effectiveness is defined by:

$$\varepsilon = 1 - e^{-\frac{hLW\delta}{mCp}}$$
(13)

Eq. (13) consists of a single independent parameter and therefore integrating the equation from a phase fraction of 0 to 1, the average heat exchange effectiveness of the TES system with parallel plates can be defined. This study highlights that a one dimensional representation can deliver a single solution to the effectiveness of PCM encapsulated in plates.

Tay et al. model

The ε -NTU technique has been applied to a tube-in-tank TES system Three configurations of TES [10]. tanks were investigated and are shown in Figure 3 having (a) a single tube, (b) two tubes, and (c) four tubes placed within the system. Since the mathematical representation of the total thermal resistance was simplified to a single length tube, and therefore one dimensional, the phase change is assumed to occur from the internal surface of the tube to the external boundary of the PCM. However, there was ambiguity on the shape of the phase change front around the tubes therefore both square and round shapes are assumed.



Figure 3 Schematic of (a) one tube tank, (b) two tubes tank and (c) four tubes tank [3]

The thermal resistances for both arrangements are analytically solved, calculated from the HTF in the middle of the tubes through the tube material and then the PCM which has undergone phase change. Therefore, the total thermal resistance is calculated using Eq. (5). Replacing the definitions of all the resistances above, the equation becomes:

$$R_{T} = \frac{1}{(2\pi R_{i}Lh_{f}) + (\ln(R_{o}/R_{i}))/(2\pi k_{w}L) + 1}{(Sk_{PCM})}$$

(14)

Therefore, the total resistances considering the shape factor can be written into these forms;

$$R_{T} = \frac{1}{(2\pi R_{i}Lh_{f}) + (\ln(R_{o}/R_{i}))/(2\pi k_{w})}$$
$$(\ln(R_{o}/R_{i}))/(2\pi k_{PCM}L)$$

(15)

$$R_{T} = \frac{1}{(2\pi R_{i}Lh_{f}) + (\ln(R_{o}/R_{i}))/(2\pi k_{w}L)}$$

1/[(2\pi L/(\ln(0.54Z/R_{o}))k_{PCM}]

(16)

The phase fraction (δ) is defined as:

$$\delta = (A_{r,z} - A_o) / (A_{\text{max}} - A_o)$$
(17)

Therefore, the phase front based on R or Z is defined in terms of δ . Therefore the average phase change effectiveness for a tube-in-tank TES system can be represented by substituting R or Z into Eq. (7).

The application of the ε-NTU technique was successfullv developed and experimentally validated for characterising a tube-intank TES system [10]. The variation between both cylindrical and square mathematical representations was found to be negligible. The experimental study showed that for freezing the 1-D representation was accurate, however for melting the representation deviated particularly with systems which had small tube lengths. This was identified as being caused by assuming natural convection is negligible in the analysis.

Conclusions

The application of the ε-NTU technique successfully was developed and experimentally validated for characterising a tube-intank and parallel plates TES system. Future research work proposed to L)expand this investigation by assuming that the phase change front could be two dimensional for liquid based systems, whereas for air based systems it can be assumed +one dimensional. Therefore, it also can be concluded that the ε -NTU method is suitable for investigating the thermal resistances in the TES system. The current research project of packed bed of sphere with the average effectiveness value can be explicitly expanded. Focus should be made on the phase change effectiveness correlation as a function of solid-liquid fraction of PCM, shape factor, temperature different. Or in

other word, the total thermal resistances within the TES system, which is the factor need to be minimised.

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Antitheft System Using GSM With Camera And Motion Sensor

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Abstract -

Currently the car security alarm system has become an essential part for all car users as it prevents the car from being stolen. In order to overcome this issue, a car anti-theft system which includes a motion sensor and camera with GSM technology presented on this paper. The purpose of this project is to develop GSM based car anti-theft system with camera and motion sensor is a car security system that is designed to protect and alert the car owner. The system implemented together with conventional car alarm system with additional motion sensor and camera feature attached to the system. The methodology involved in developing this project is software desian. circuit construction. PIC interfacing, finally test and analysis of the system. This project is designed by using PIC microcontroller, motion sensor, GSM modem, SIM card, camera. The system will trigger the owner via android application in a mobile phone to send a Short Messaging Service (SMS) if trespasser is detected inside the car. This system is capable of controlling several functions in car alarm system such as turning off car engine, activating the sound alarm of the car and snapping photo of the intruder In addition, the car owner can control the car feature via phone to capture the unrecognized personal, turn on alarm system or stop the engine. This system provides effective, real time vehicle location of the car owner and has security features to check its status at all times through a mobile phone.

Keywords: GSM Technologies, Motion sensor, PIC 16F87XA, SMS (Short Message System)

1. INTRODUCTION

Anti-theft car system utilizes an embedded system design with Global System Mobile (GSM) to monitor and protect a car. It secures the car against theft. The statistics of car stolen kept increasing by year. Based on the statistics from PIAM (General Insurance Association of Malaysia), in 2010 a total of 8736 cases of vehicle theft were reported. Based on the weakness of car alarm system that exists today, this system based on GSM mobile device is developed to secure the car. In order to overcome this issue, a car antitheft system which includes a motion camera with sensor and GSM technology will be presented. This project, GSM based car anti-theft system with camera and motion sensor is a car security system that is designed to protect and alert the car

owner on certain situation that needs prompt attention to the car. This system is collaborated with motion sensor that is electronic device used to detect motion. When these situations occurred, the sensor will transmit the signal to user's mobile phones. Users can make immediate attention to overcome the problem.

The system is intended to design a car security system that unrecognized user can be detected by motion sensor and the car system can be controlled by mobile phone. The camera was installed inside the car owner to detect and snap the photo of intruders. This module is applied to send Short Message Service (SMS) to the user's mobile phone. When any sensor of car alarm system is activated, this module compiles SMS about the car alarm system and transmits it immediately to user mobile phone. This system is capable to control several functions in car alarm system such as turn off car engine, activate the sound alarm of the car and snap the photo of the intruder.

This system acts as bi-direction communication system because the owner can access the system and return information through mobile phone. The SMS is used as the control medium to transmit instruction from mobile phone to the security system. The system also sends SMS to alert owners when the car has disturbance such as collision or attempted break in. At the same time, this system utilizes microcontroller and GSM modem as mean of communication.

2. PROBLEM STATEMENT

Due to insecure environment the ratio of car theft increases rapidly. These situations are excessively happening when the users park the car at dangerous place or unauthorized parking. Although there are a lot of car security systems that had been produced lately with more advanced technology, the result is still disappointing as the number of car theft attempts still increases.

One major problem in those car alarms is tuning and adjustment. Certain car alarms are too sensitive, while the rest can withstand a major vibration without a single beep. As a result, the public lose interest in the car alarms since they could be falsely triggered [1]. On the other hand most cars use traditional alerts systems (with no mobility or multimedia facilities). Costs of advanced car security systems are exorbitant and are mainly used in expensive cars [2].

This is proven by statistic that shows that 96% of the public are not aware when they hear a car alert alarm. The user would not know if their car is alarming. It also shows that the alarm itself does not contribute much in preventing a car theft and these car alarm systems cover limited areas, the area is just less than 100m[3].

Some of the issue is that there is limited capability to interact with car owner meaning that the owner did not know the status of the car while leave the car for longer time. If somebody or unauthorized person entered the car, the car system cannot trigger the owner directly and intruder can steal the car easily.

The automotive theft and the hijackings had been taken place by common ways of stealing cars .This is done by deactivating the alarm or

steering wheel lock by cutting wires, but the methods proposed in above surveys would also sound ineffective [4].

Having a security system for automobile is almost default as vehicles in considered being a valuable possession. With the development of technoloav and enhanced security features, the car thieves also has become technologically upgraded enough to disable those features. Hence keeping this in mind we have integrated the existing different security system units in one sinale unit with some improvisations so it becomes impossible for the thieves to disable the system [5].

It is much safer to have a that monitors svstem and communicates to the device owner without putting human life to risk in the name of "Watchman". This tends to utilize the availability of GSM network. mobile phone and electronics circuit to achieve an automated system which is programmed to work as a thinking device to accomplish this purpose [6].

Therefore, this is reason, the GSM based car alarm system with camera and motion sensor is proposed to prompt the user by using short messaging services (SMS). SMS is a good choice of the communication to replace the conventional alarm, because it can be done and does not require much cost [7].

They are many types of car security system that available in the market nowadays. All of these security systems were designed to fulfil the car owner's needs according to their usage. Not all car owners have the same reason to equip their car with the security system. Differ to the other car security systems, GSM based car anti-theft system with camera and motion sensor was designed to improve current car security system and new functionality was added to make this system different from others.

3.0 PROJECT PLAN

Before proceed to full assembly level, all the planning on the task have been scheduled properly in order to get the objective of this project can achieve successfully.

Project methodology that has been followed:-

- 1) Project planning
- 2) Literature review
- 3) Software design and circuit construction
- 4) PIC interfacing to the data transfer from RS232
- 5) Circuit design
- 6) Test and analysis

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Figure 3.1 Planning methodology flow-chart

3.1 CAR ANTI THEFT SYSTEM

The basic features of the Car Anti-Theft system is as follows.

- Motion sensor detect of unrecognized authorization to car
- 2. SMS notify the owner when motion sensor is detected
- 3. The control SMS is using GSM and microcontroller
- MMS upon notification, owner is optional to take the picture of unrecognized personal.
- 5. The control of MMS and camera is using Android Phone
- Next, upon confirmation, owner is optional to take action on unrecognized personal, to stop the engine or let go.
- 7. The control of stop engine is using microcontroller

4.0 FINAL ANALYSIS

After done all the analysis and verification for the each component. the last step was program part and developed new Java program for Android phone. This part took around a month to completed, as it was very challenging to develop the Java program. After done the programming for microcontroller part, trial process on assembly all components like GSM modem, motion sensor, serial port, microcontroller together on a PC board.

Analysis 1

Then, plug in the power supply 12V to the Cytron startup kit, toggle the switch at the start-up kit to on. After confirmed the critical area is not over voltage by using multimeter, then plug in 12V power supply to GSM modem and press SW1 to confirm connection between microcontroller and GSM modem is good. When connection is ok, LCD will show the system was ready as show in Figure 1

Figure 1: LCD Show system is ready



Analysis 2

Once the connection between GSM modem was good, the next step was to verify the motion sensor by sending the output high to microcontroller, and microcontroller will requested the GSM modem and send a message to alert the particular phone. Microcontroller will supply 5V to motion sensor thru the board.

Due to the sensitivity of the motion sensor, thus need to order a lens cover to reduce the sensitivity for this motion sensor. Motion sensor acts like a switch to turn on the circuit running. When message was received from GSM modem, it means that the system already working on half part of the system. Now the testing will carried on to the rest of function, which was using particular phone communicate with GSM function the modem and microcontroller with reply the option selection 1, 2 and 3 as message received before.

When reply 1, car engine will stop immediately. LED at start-up kit is indicated as car engine and it was off immediately when received message. System need to reset with press the reset button at start-up kit. Figure 2 below show the process of system with option 1.



Figure 2 - Flow chart of system with option 1

Analysis 3

When reply 2, car alarm will sound out 30 seconds. LED at startup kit is indicated as car alarm and it was blinking for 30 seconds when received message. System will auto ready without reset the system.



Figure 3 : Flow chart of system with option 2

Analysis 4

When reply options 3, antithief system will be ignore. System need to reset with press the reset button on start-up kit. Operating system for the camera phone is Android, Program will develop to auto snap the photo and send to the particular phone. This program will always running at background even thus phone was rebooted.





Figure4: Flow chart of systemwithoption3

CONCLUSION

The GSM car anti theft system with camera and motion sensor are gives higher level of security features compared to the conventional car alarm system. This project, covered with camera and motion sensor that is designed to protect and alert the car while the SMS are used to locate the location. This system provides effective, real time vehicle location and reporting. Additionally, the car owner can remote controlled any security features and check its status at all times through a phone. Lastly, by adding vehicle location information, The GSM car anti theft system with camera and motion sensor could be the one that every car owner wishes for in securing their cars.

RECOMMENDATION

This project deals with the design and development of a theft control system for vehicle. Ideally this project could be more convenient and secure with the use of satellite modems instead of cell phones as tracking device as the system may fail when there is no network coverage. This design can be more enhanced in future to support mobile data LCD display, web based tracking software and also PC based stand alone software.

In future in addition to MMS, SMS like to add recorded audio telephonic call that means after sending MMS from car automatically a telephonic call will go to owners mobile with already recorded audio. It will get its applicability in almost all security systems including organizations and automobiles.

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SOFTWARE PIRACY: FACTORS AND STUDENTS' PERCEPTIONS

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Abstract— The issue of software piracy in Malaysia has been widely debated. This article reports the results of a survey concerning the use of pirated software among students. The survey was conducted in order to accomplish the main goal that is to know the perceptions of students towards software piracy and to identify factors that can contribute to piracy. This study used quantitative methodological approach and questionnaire was used as the instrument. Thirty respondents participated in this study. The findings are discussed, and the findings show that factors and perceptions concerning consequences of software piracy have significant effects on software piracy intentions. Finally, the article concludes with some implication, and identifies areas of further research.

Keywords-software piracy; factors;

perception; consequences.

Introduction

Just as personal computer use has been increasingly used everywhere, so has the use of the computer for criminal and deviant activity. One kind of computer crime is software piracy. Mastura, Thurasamy, Tee (2008) believe that "Software piracy occurs when a person illegally copies the available commercial software in order to avoid charges and fees, or when a person makes unauthorized copies of an organization's internally developed software for personal use or distribution"(p.1). "Software piracy is considered a prevalent problem in companies, academic institutions. and among people" (Moez, Mohamed, and Wynne, 2004, p.1). While more than half of the university and college students in Malaysia think pirating software are acceptable, what proportion of students use pirated software? What are the students' perception regarding software piracy and why do they use the pirated software?

Besides giving impact to the individual in academic institutions,

software piracy also can cause a great impact to the organizations. Mastura, Thurasamy, Tee (2008) described that:

Pirated software may affect system capability in organizations where it may fail to perform wanted features, options and functions. This can cause disruption to the business function and potentially mean losing out to competitors. The software would not be supported by the vendor or distributor if it is not properly licensed. Therefore, users lose out in the warranty of the product delivering its intended capability (p.1).

Software piracy actually can give impacts and consequences especially to software companies and programmers as many of employees and students purchase and use pirated software. (Moez, Mohamed, and Wynne, 2004; Teston, 2008). In term of future, this can lead to reduction of future job of computer science and information system graduates.

However, due to the easiness of software to be pirated, it apparently also makes the behaviors that cause it to be difficult to detect. George and David (2004) summarized that there are basically two factors in which contribute to this issue that is internet has become a medium for software piracy. The second factor is the software piracy will not occur if and only if the legal software owner have an authorization of the software and make it acknowledgeable to the people that the software has its legal owner.

Siegfried believed that an easy access of internet had worsened the issue on plagiarism of the intellectual properties in the cyber world. His also revealed that studv most students' believed there is no ethical problem with illegal download of software or music from the internet. He also encourages academics to stress the importance of moral ethic in the cyber world as well as the consequences of software piracy. It is hoped that with better ethical knowledge provided to the students, it can change their beliefs of technology ethics on software piracy (Siegfried, 2004).

Besides that. less personal supervision, few rules and regulations. sanctions to govern individual behavior. and greater emphasis professionalism is on perhaps the characteristics of educational environment. The lack of supervision probably means that academia's activities in his or her office generally unnoticed. ao Therefore, this may contribute to why the academia uses the pirated software.

In this study which will be focusing to the academic environment, besides the students, educators were also will be selected because they can exert considerable influence on the ethical behavior of students. In fact, there is informal and unclear evidence that the educators even encourage students to emulate piracy the

behavior. Furthermore, it would be easy to educate students if educators were convinced of the curses of pirated software. Thus, the purpose of this study is to investigate the PSP students' perception towards software piracy and the factors that contribute to software piracy.

METHODOLOGY

The purpose of conducting the survey is to collect the information from respondents in order to achieve the purpose of the study. The purpose of the study is to examine the factors that can contribute to piracy software and students' perceptions piracy itself. on Respondents students and are lecturers that have been randomly selected.

Materials

А quantitative methodological approach was used in this research in order to achieve objectives. The instrument used in this study was a set of questionnaire which was divided into two sections. The first part is the demographic information that presented information about the respondents' profiles. The second part on the other hand, assessed respondents' perception on four main factors that can contribute to software piracy which are software industry, social norms, influence and intellectual property law.

The questionnaire consists of 13 statements measurable on a 5-point Likert scale range from totally disagree = 1 to totally agree = 5. The statements were closed ended to ensure the smooth flow of answers and ease of data analysis. Besides that, for demographic information, it was not reckoned that extensive demographic information is relevant to the findings of the study. Through the questionnaire, it was possible to implicitly see how aware they are towards software piracy and what perceptions they hold towards it in terms of the factors that influence software piracy.

Participants

Copies of the questionnaire were distributed to 30 randomly selected students and lecturers. The focus of the survey is to elicit beliefs and perceptions regarding the factors that influence piracy. Gender bias was intended to be avoided but inevitable occurred due to the difference in ratio between male and female participants available at the time of questionnaire distribution. The participants are aware that all the data and measurements obtained from the research will be stored confidentially. They are also aware that their data is for internal use only.

Data Collection and Procedure

The questionnaires are distributed randomly to students and lecturers by sending the form through online by using Google Docs. The questionnaire's link is sent to the respondents' emails and to their Facebook account. By using Google Docs, it can help to reduce and save the money and time to develop the questionnaires. The researcher also is able to contact large numbers of

people quickly, easily and efficiently online usina the questionnaire. Besides that, it can also ease the respondents to answer the questions as it does not require any time restriction as the questionnaire can be answered through online; in which it can be answered within 24 hours. After 3 days collecting the data, the information organized is and analyzed.

Data Analysis

After the data was collected, it was organized and analyzed. As the questionnaires are developed in Google Docs, all responses are assembled automatically into а Google Docs spreadsheet, which it is saved as an Excel spreadsheet. For analysis of closed-ended questions, the data was analyzed by using descriptive statistics. Frequency tables were also drawn and from these. the data that has been collected were presented in pie diagrams and bar graphs.

FINDINGS

For the demographic information of every respondent, the respondents are students and lecturers that basically from various courses and departments. The respondents' profiles are summarized in Figure 1.



Figure 1. Age group and Gender

As shown in Figure 1, from 30 respondents, 80% of the respondents are from 21 to 30 years old that is 24 respondents which is the majority of age group. The lowest age group consists of 3% of respondents which are between 31 to 40 years old. As for the gender, there were 60% and 40% of female and male respondents of that took part the survev respectively. Besides that. the respondents also have been asked about their understanding of software piracy and whether they ever used pirated software or not and their consideration regarding the piracy in the demographic issue The questionnaire. respondents' percentages are shown in Figure 2.



Figure 2. Understanding and consideration regarding issue of software piracy

In Figure 2, 90% of 30 respondents indicated that they understood the meaning of software piracy whereas another 10% of respondents do not understand what software piracy is. Besides, 86% of the respondents stated that they have used the pirated software while only 14% stated that they never used the pirated software. For the respondents' consideration regarding issue of piracy, 47% of respondents which is the highest indicated that percentage the respondents really do not care about the issue of piracy, followed by 27% and 13% of respondents considered the issue of piracy is important and extremely important respectively. Only 10% and 3% of respondents considered the issue as not important and extremely not important.

For the second part of questionnaire which is The Perception part, the questions were divided into 4 main parts, which are software industry, social norms, influence and intellectual property (IP) law. The summary of software industry can be seen in Figure 3.



Figure 3. Software industry

There are 3 questions that have been asked to the respondents in software industry part. For their perceptions about original software, from 30 respondents, over half of those surveyed reported that they strongly agreed that the original software is expensive. None of them strongly disagree about it. Moreover, in response to Question 2, most of those surveyed (30%) indicated that they strongly agree that there are no functionality or user experience between original and differences pirated software. There was also no difference by 20% of the respondents that disagree and agree with the statement. In addition, there was also

high number of respondents (23%) who chose neutral as their perception for the statement. As for their third perception about the easiness to download the pirated software from internet than to purchase the original software, it was found that the majority of them strongly agree that it is easier to download the pirated software from internet rather than purchase it. None of the respondents strongly disagree or disagree with the statement.

For the second part of The Perception questionnaire that is Social Norms, there were 3 questions that were asked to the respondents and the summary of it is shown in Figure 4.



Figure 4: Social Norms

For the perceptions about whether they will use the pirated software if many others are doing so, most of the respondents that were 47% of them agreed with the statement itself. Only few of them strongly disagree and disagree that is 3% and 7% addition, respectively. In the respondents also asked were whether what others are buying and using for computer software will influence their purchasing decision. Almost half of the respondents (40%) it. agreed with А minority of participants disagree that what others are buving and using software can influence their decision whereas 30% of them responded neutrally. For the third statement that ask about their perception about most people use pirated software, there was а significant positive correlation between strongly agree and strongly disagree. Majority of the respondents thought that most people use the pirated software and none of them totally disagree with the statement.

Besides, for the third part that is the influence, it consists of 4 perception questions that need to be answered by the respondents. It is to collect the information about their perceptions regarding factors that influence the software piracy. The collected data are summarized as shown in Figure 5.



Figure 5. Influences

More than half of respondents agreed that convenience factors can affect the decision of purchasing the pirated software accordingly. Approximately 27% of the respondents responded neutrally for this statement and only responded 3% strongly disagree while none of them responded disagree. As for the second statement, the overall response for this question is poor. There is no significant difference was found between disagree, neutral and agree that family influence can affect the decision of purchasing software. In addition, majority of the respondents (37%) agreed that peer and friends influence can affect the decision of purchasing software. Only 23% of them expressed the belief that they strongly agree with the statement, 20% are in neutral mode, 13% of them disagree with it and only few of them totally disagree that peer and friends can influence to affect the

respondents regarding decision of purchasing software.

The last part of the questionnaire's second section is the intellectual property (IP) law. The respondents are required to state their perception for 4 questions and all the data have been illustrated in Figure 6.



Figure 6. Intellectual Property

Only 3% and 23% of respondents thought that the punishment severity of pirating software is totally high and high respectively. Majority of them (40%) thought neutrally about the punishment severity whereas 10% and 23% of them thought that the punishment was totally not severe enough. The respondents also were to be asked about the probability that they would be caught if they are committed to software piracy and the overall response was poor. Majority

of the respondents though neutrally whereas minority of them thought that the probability that they would be caught is totally high. For the last question, 30% of the respondents which is the majority were not aware about the punishment of committing software piracy. The lowest percentage is 7% that indicated the respondents that is totally aware about the punishment of committing software piracy.

DISCUSSION

Based on the statistical analysis, as the data has been hypothesized, it is very clear that almost all the communities understand the meaning of software piracy and the results also shows that most of them (86%) have admitted that they used the pirated software. It is proven that the respondents do not see any problem with using the pirated software as most of them do not care at all regarding the issues of software piracy. Although the survey did not ask them to explain the reasons for their opinions, there are a few misconceptions that help promulgate this belief. The reasons may be due to the owner is not losing anything and the wanted software is available over the Internet that the person can download it for free.

This study also seeks the perceptions of the respondents on what are the factors that can influence the piracy behavior. For the first part that is Software Industry, the findings of the current study are consistent with study conducted by Eric and Lau (2006) who found that the original software that is currently available is expensive and sometimes over-priced. Some people especially students cannot afford to purchase the software and they tend to download the pirated software that actually is cheaper or free and even have the same functionality with the original software. The findings in Software Industry part are in agreement with Eric and Lau's (2006) findings that showed that affordability is the key factor that may contribute to piracy behavior. The analysis showed that the respondents cannot agree more that the main reason that they use pirated software is because it is cheaper, widely available and has an equivalent version of the original software.

For the second part that is the Social Norms, the statistical analysis shows that the respondents tend to use the pirating software if many others are doing so. It seems possible as the respondents may think that others are able to download and use the pirated software without any harm or punishment. So this automatically can influence their purchasing decision as they tend to follow others. Another possible explanation for this is because others may also think that pirated software was easy to download and also easy to get away with. This can be seen in Chart 4 that almost all respondents totally agree that most of people use pirated software and this may be due to that reason.

Another important finding is in Influence part that discussed the influence factors that can contribute to software piracy. It is interesting to note that in all 3 main cases that are family, peers and friends and teachers and lecturers, the highest significant percentage goes to peers and friends influence followed by family influence and lastly teachers and lecturers influence. This may be due to individuals are affected by the values of family members or friends. According to the researchers, users' attitudes toward pirated software usage were defined basically by the beliefs of other people in their environment especially the peers and family as they are an important effect because it creates an environment that shapes an individual's behavior. So the users that firstly do not believe in software piracy generally do it as everyone is doing it. For example, a student originally has little intention to play a new game; but many of his friends acquire illegal copies of that game and talk about it; he may actually obtain the game through piracy. In regard to compliance, consider an individual who believes that using or buying pirated software is unacceptable; they may still use the pirated application when they feel the need to comply with the expectations of the referent group.

As for the last part that is the Intellectual Property (IP) law, contrary to the expectations, this study did not find a significant difference on the punishment severity of pirating software between agree and disagree. Most of the respondents thought neutrally as it may be due to respondents have no opinion or lack of enough information to form an opinion. It is difficult to explain this issue, but it may be due to respondents not recognizing the severity of software punishment and the probability that they would be arrested if they pirate the software. As for the awareness about the punishment of committing software piracy, it is stated that most of the respondents were not aware of the punishment. This result may be because of most of them actually purchase and download the pirated software because they believe that there is no potential ethical problem by using pirated software or even pirate the software. Thus this means that thev probably do not acknowledge and understand the intellectual property (IP).

CONCLUSION

This paper has presented a study that gave an account of and the influence software reasons that piracy. To reiterate, this study sets out to investigate the students' perceptions and factors that can contribute to software piracy. The major finding of the research that can be stated is that software producers and governments should consider software industry, social norms, influence and intellectual property (IP) Law in order to solve problems about pirate software usage. In order to gain better understanding about this phenomenon, the author analyzed every perception that can contribute

to the factors that involved in software piracy behavior. The practical contribution predicts that the findings of the study will provide deeper insights and new knowledge for IS practitioners fighting piracy.

Overall, the findings of this study several implications suggest for software manufacturers to reduce piracy. Here, manufacturers should revise their distribution strategies especially for intensive distribution of software packages and reduced should provide prices that not potential software pirates with availability and ease of purchase of these products and, therefore. significantly reduce the likelihood to pirate software from other convenient sources. Besides, it also provides hope for the future, especially for a majority of students to clearly indicate that software piracy is unethical as through this research, it is found that moral beliefs and perceptions have positive relationship with the intention of using pirated software.

However, this study somewhat is not accurate enough as it was found that the questionnaire does not include some of possible questions that could make the study more reliable to accomplish the objective. It is recommended that further study could be carried out on students from other universities or colleges to compare the findings. Above all, this study has contributed comprehensive understanding towards main factors of committing software piracy and moral beliefs and perceptions also can be used as a guideline in reducing software piracy especially among Malaysians.

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Supervisor Support, Role Overload and Organizational Citizenship Behavior In Malaysian Polytechnics

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Polytechnic Department of Education aims to be Malaysia's main provider of innovative human capital through transformational education and training for the global workforce by 2015. Thus. polytechnics will become more dependent on lecturers who are willing to go beyond their call of duty and contribute to successful change. Although interest in OCBs has been extensive. research on its antecedents among human service occupation especially polytechnic lecturers within the Malaysian context has been scarce. Hence, this research investigates the effects of supervisor support and role overload lecturers' on organizational citizenship behavior. Data were obtained through mailed survey from 393 lecturers in 11 polytechnics in Malaysia. The results provided evidence that supervisor support and role overload played important roles in influencing lecturers' organizational citizenship behavior.

Keywords: organizational citizenship behavior, supervisor support, role overload, polytechnics, Malaysia

Introduction

Malaysia's education system continues to face new challenges and undergo frequent reforms. These changes have caused a shift in the way in which higher education is viewed (Mohammad, Habib & Alias, 2011). Department of Polytechnic Education aims to be Malaysia's main provider of innovative human through transformational capital education and training for the global workforce 2015. by Thus. will polytechnics become more dependent on lecturers who are willing to go beyond their call of duty and contribute to successful change. These behaviours are termed as organizational citizenship behaviors (OCBs). Voluntary behaviour of employees is important in education organisations because, in the educational institutions, the additional role is performed along with the official tasks and is often part of the official roles (Mohammad, Habib and Alias, 2011). Currently, lecturers in Malaysian polytechnics face the multiple roles in their daily routines such as teaching. conducting research, involve in industrial attachment as well co-curricular activities. These lecturers who are

being overburdened with these multiple tasks might experience stress at their workplace and thus reduce their willingness to perform over and above their call of duty. Hence, the aim of this research is to investigate the effects of supervisor and role overload support on lecturers' organizational citizenship behavior.

Numerous studies have examined the antecedents of OCBs. The underlying motive for engaging in OCB lies in the social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960). Recent research has revealed that employees may be motivated to perform or not to perform work behaviors (such as OCBs) from the perspective of the job demandsresources (JD-R) model (Bakker, Demerouti. & Schaufeli, 2003: Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). According to this model. involvement in any organization may be produced by two specific sets of working conditions: job resources and job demands. Job resources refer to those physical, psychological, social or organizational aspects of the job (Bakker et al., 2003). It is assumed that job resources have motivational potential and are likely to stimulate employees to engage in favorable work attitudes and behaviors. In contrast, iob demands refer to those physical, social or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological

and psychological costs (Demerouti, 2001). al.. Based on the et Conservation of Resources Theory (COR) (Hobfoll, 1989), job resources are likely to increase OCB whereas job demands are likely to reduce OCB. Since research using this perspective is relatively scanty, this paper aims to review the relevant literature and subsequently propose a conceptual model linking job resources, job demands, and OCB.

LITERATURE REVIEW

Organizational Citizenship Behavior (OCB) represents individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization (Organ, 1988, p. 4). OCB consists of informal contributions that participants can choose to make or withhold, without regards to considerations of sanctions or formal incentives. They are often described as behaviors that "go above and beyond the call of duty". The employees who perform citizenship behaviors considered are "good soldiers" (Organ, 1988) for their effort contributed without formal exchange or reward in the employment contract. Organ (1988) provided a multidimensional scale of OCB. The scale consists of five dimensions that make up the OCB construct which are conscientiousness. altruism. sportsmanship, courtesy and civic virtue. Graham (1989) proposed a four-dimension model of OCB

consisting of interpersonal helping, individual initiative, personal industry, and loval boosterism. Williams and Anderson (1991)) found a twodimensional structure of OCBs, and defined it as: (1) benefits directed at the organization in general, such as duties that performing are not but which required improve organizational image and performance (OCBO), (2)and benefits directed at individuals within the organization, such as altruism and interpersonal helping colleagues who have heavier workloads (OCBI).

Although most scholars agree on the multidimensionality of the OCB construct, a review of the literature reveals a lack of consensus about its dimensionality (Somech & Ron, 2007). Podsakoff, MacKenzie, Paine and Bachrach (2000) identified almost 30 potentially different forms of OCB and categorized them into seven dimensions based on prior conceptualizations and taxonomies of OCB (Organ, 1988, 1997; Van Dyne et al., 1994). The seven dimensions are helping behavior, sportsmanship, organizational loyalty, organizational compliance, individual initiative, civic virtue, and self-development. Due to the overlapping of the behavioral elements of OCB, Williams and Anderson (1991) have suggested that certain elements be combined into conceptually distinct subgroups based on the targets of these behaviors. These behaviors are labeled as OCB directed toward the organization (OCBO) and OCB directed toward the individual (OCBI).

Most of the OCB literature prefers to focus on employees in more commercial settings such as hotels (Chiu & Tsai, 2006; Hemdi & Nasurdin, 2008), sales (Ackfeldt & Coote, 2005; MacKenzie, Podsakoff & Ahearne, 1998: Netemever, Boles, McKee & McMurrian, 1997), banks (Emmerik, Jawahar & Stone, 2005; Karatepe & Uludag. 2008). and manufacturing industry (Hsieh & Hsieh, 2003; Organ & Lingl, 1995). The most common taxonomy of OCB in these studies relates to the one proposed by Organ (1988) where OCB consists of five dimensions conscientiousness, (altruism, sportsmanship, courtesv and civic virtue). According to some scholars (Bogler & Somech, 2005; Hannam & Jimmieson, 2002; Erturk. 2007: Oplatka, 2009). OCB in noncommercial context such as teaching has largely been ignored.

As for the educational setting, Somech and Drach-Zahavy (2000) identified three components of teachers' OCBs. The first component consists of OCB towards the school. OCB towards the school refer to behavior beneficial to a larger and more impersonal organization. Somech and Drach-Zahavy (2000) suggested that these behaviors represent innovative and initiative activities, which are not part of the job description. The second component consists of OCB towards team These OCBs represent member. behaviors intentionally directed at helping teachers in one's own team and refer to behavior beneficial to one's own group of colleagues. The

third component consists of OCB towards students. These OCBs are behaviors directly and intentionally aimed at improving the quality of teaching and helping students to improve their achievements. In this paper. following the recommendations made by Williams and Anderson (1991), the three dimensions of OCB identified by Somech and Drach-Zahavy (2000) can be further regrouped into two categories. OCBs targeted towards the school would be termed as OCBO. On the other hand, OCBs targeted towards peers and students would be termed as OCBI. Our hope is to contribute to the extant literature by conceptualizing OCB in educational setting using а combination past taxonomies of (Somech & Drach-Zahavy, 2000; Williams & Anderson, 1991). Furthermore, we intend to provide an insight on the antecedents of OCB within the Malaysian context using the JD-R framework. The central tenet of the JD-R model is that job induce a motivational resources process whereas job demands evoke an energy depletion process (Bakker et al., 2003).

Job Resources

Schaufeli and Bakker (2004) contend that two sets of variables can be distinguished in any kind of job, namely, job demands and job resources. Job resources refer to those physical, psychological, social or organizational aspects of the job that either/or (a) reduce job demands and the associated physiological and psychological costs; (b) are functional in achieving work goals and (c) stimulate personal growth, learning and development (Demerouti et al., 2001). Resources may be provided at a variety of different levels within an organization. For example, at the organizational level, job resources include pay, career opportunities, or job security. Interpersonal resources may be provided in the form of supervisor and/or co-worker support, or a positive team climate. Since teaching entails interpersonal relationships, this paper will focus on two interpersonal resources which comprised of supervisor support and peer support.

Supervisor Support and OCB

Supervisor support can be defined as the degree to which supervisors value subordinates' contributions and care about subordinates' well-being (Kottke & Sharafinski, 1988). The importance of supervisory relationship on employee attitude and behavior has been the subject of numerous studies. Past research has demonstrated that in general, higher supervisor support can enhance employees' display of OCB (Podsakoff, MacKenzie, Paine & Bacharach, 2000). The findings from two meta-analyses conducted by Podsakoff, Mackenzie and Bommer (1996) and Le Pine, Erez and Johnson (2002) confirmed a modest positive correlation between supervisor support and OCB. The

findings revealed that supervisor is helpful in support motivating employees' OCB. Somech and Ron (2007) conducted a study on 104 teachers in elementary schools in Haifa, Israel and the results showed that there was а positive and relationship significant between perceived supervisor support and four dimensions of OCB which are altruism. conscientiousness. sportsmanship and civic virtue. According to Blau (1964), people always seek to reciprocate those who benefit them. When a supervisor engages in helping behavior toward an employee, the employee will be obliged to repay the supervisor so that the exchange is mutually beneficial. On the hand, if an employee's sense of support from the supervisor is violated, he or she will subsequently reduce or withhold OCB (Van Yperen, Berg, & Willering, 1999). Therefore. this study hypothesized that:

Hypothesis 1: Supervisor support will be positively related to lecturers' OCB (OCBO and OCBI).

Hypothesis1a: Supervisor support will be positively related to lecturers' OCBO.

Hypothesis 1b: Supervisor support will be positively related to lecturers' OCBI.

Job Demands

Job demands refers to those physical, social or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (Demerouti, et al., 2001). Although job demands are not necessarily negative, they may turn into iob stressors when meeting those demands requires a high degree of effort (Bakker, Demerouti, Schaufeli. 2003: Schaufeli & & Bakker, 2004). As such, greater job demands are likely to reduce employees' motivation to engage in OCB. Examples of job demands in an organizational environment include: high workloads, role overload, role conflict, time pressures and shift work. Although job demands are not necessarily negative, they may turn into job stressors when meeting those demands requires a high degree of effort (Bakker, Demerouti, & Schaufeli, 2003; Schaufeli & Bakker, 2004). Since the Malaysian educational environment has been subiected to frequent changes. challenges, and uncertainties, this paper will focus on two job demands which comprised of role conflict and role overload. These two variables have been known to constitute stressinducing circumstances across a variety of work organizations (Van Sell, Brief & Schuler, 1981).

Role Overload and OCB

Role stressors such as role overload has been found to have significantly negative relationships with some of the organizational citizenship dimensions. In Malaysia, a study conducted by Yew (2006) in 15 private institutions of higher learning

in Penang revealed that role overload and role ambiguity had significant and negative relationships with all five dimensions of OCB (conscientiousness, sportsmanship, courtesy, civic virtue and altruism). With a sample of 277 nurses among three public hospitals in Kedah and Perlis, Mohd Salleh (2007) examined the direct effects of role perception (role conflict, role ambiguity and role overload) on OCB. The results revealed that only role overload was significantly and negatively related to OCB that benefits internal customers. Jex and Behr (1991) argued that rolerelated stressors are strongly related to the employees' well-being. Thus, it can be concluded that when employees are burdened with heavy workload, they are unlikely to engage in OCB. Hence, the following hypotheses are offered:

Hypothesis 3: Role overload will be negatively related to lecturers' OCB (OCBO and OCBI).

Hypothesis 3a: Role overload will be negatively related to lecturers' OCBO.

Hypothesis 3b: Role overload will be negatively related to lecturers' OCBI.

METHODOLOGY

Sample and Procedure

Respondents for this study were lecturers teaching full time in 11 polytechnics in Malaysia. These polytechnics were chosen as they have been operating for quite a number of years and have more academic staff as compared to the other polytechnics. The total number of academic staff in these 11 polytechnics is 4000. 550 questionnaires were distributed with 50 questionnaires allocated to each polvtechnic. distribution The and collection of the survey instruments took about two months. A total of 393 questionnaires were found acceptable and analyzed, yielding a response rate of 71.3%

Measurements

The research instrument measuring organizational citizenship behavior comprised of eleven items each adapted from the work of Emmerik and Euwema (2007). Supervisor support was assessed using 14 items adapted from Somech & Ron (2007) Role overload was measured by five items adapted from Bamberger and Conley (1990). All items were measured on a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. Demographic information such as education, age, gender, marital status, ethnicity, subject job specialization, position, job tenure, and organizational tenure were also requested.

Method of Analysis

A principal component factor analysis with varimax rotation was conducted to validate the dimensionality of the study constructs. Following Snell and

Dean (1992), a loading of 0.50 or greater on one factor is considered. Likewise, items will be deleted when the difference between the loadings is less than 0.10 across factors. Results of the factor analysis on organizational citizenship behavior two-factor revealed а solution. Similarly, a single factor solution was discovered for supervisor support and overload role respectively. Hierarchical regression analysis was undertaken to test the two hypotheses of this study. Several demographic variables such as age, gender, job tenure and organizational tenure that may be related to the dependent variable, but were not of direct interest to this study, were controlled. The demographic variables were age (Schappe, 1998; Wagner & Rush, 2000), gender (Farh, Earley & Lin, 1997; Farrell & Finkelstein, 2007; Kidder, 2002; Kidder & McLean Parks, 2001: Lovell et al., 1999), organizational tenure (Wayne, Shore, Bommer & Tetrick, 2002), and job tenure (Morrison, 1994; Skarlicki & Latham, 1995).

RESULTS

Profile of Respondents

The total number of respondents was 393 where, 143 (36.4%) were male and 250 (63.6%) were female. Ethnic representation of the sample is as follows: Malays (89.3%), Chinese (4.8%), Indians (4.6%), and other races (1.3%). Most of the respondents (299 or 76.1%) were married, 74 (18.8%) were still single, 16 (4.1%) were divorced and another 4 (1.0 %) were widowed. In terms of their highest educational qualification, 5 (1.3%)respondents held Doctoral degree, 120 (30.5%) respondents held Master degree. 255 (64.9 %) completed their Bachelors, and 13 (3.3 %) respondents held Diploma. As for positions held in polytechnics, the majority of the respondents were lecturers with 322 (84.5%), 48 (12.2 %) were head of senior lecturers. 11 (2.8%) were head of programs, and 2 (0.5 %) were head of departments. In terms of subject specialization, 175 (44.5%) of the respondents were teaching engineering subjects, 41 (10.4%) were specialized in IT, 58 (14.8%) were specialized in Commerce, 43 (10.9%) in Mathematics, Science and Computer, and 76 (19.3%) in General Studies subjects. The respondents' age ranged from 24 to 58, with a mean value of 35.87 years (SD = 7.20 vears). The mean value for organizational tenure is 7.75 years (SD = 5.57 vears). The respondents had organizational tenure ranging from one year to 30 years. On the average, the lecturers have been working in their respective polytechnics for quite a long time (7.75 years). As for job tenure, it ranged from one year to 34 years with mean value of 10.63 years (SD = 6.85years). In other words, on the average, the respondents in this sample have been in the teaching profession for about 11 years.

Means, Standard Deviations, Reliabilities and Correlations of the Study Variables

Descriptive statistics such as mean scores, standard deviations, reliabilities, and inter correlations of
the study variables are provided in Table 1.

Table 1: Descriptive Statistics, Correlations, and Reliabilities of the Study Variables

Var	Mean	SD	SS	RO	OC	OC
					BO	BI
SS	3.87	0.67	(.95)			
RO	3.64	0.80	14**	(.75)		
OCBO	4.09	0.58	.36**	.05	(.70	
)	
OCBI	3.89	0.65	.19**	.12*	.48*	(.74
					*)

Note: ** p<0.01, * p<0.05; Figures in parentheses denote the reliability coefficients for the study variables.

As shown in Table I, on the average, the performance of OCB targeted organization - OCBO (M = 4.09, SD = 0.58), OCB targeted at individual -(M= SD= OCBI 3.89, 0.65). supervisor support (M = 3.87, SD = 0.67), and role overload (M = 3.64, SD = 0.80), were judged to be relatively high by the respondents. The reliability coefficients for the study variables were in the range of 0.70 to 0.95, which meets the minimum acceptable standard of 0.6 for exploratory research as suggested by Hair et al. (2006). Similarly, five out of six correlations between the study variables were found to be significant (p<0.05). Role overload had no significant correlation with the dimension of OCB which is one OCBO.

Regression Results

Results of regressing the dependent variables (the two dimensions of

OCB- OCBO and OCBI) against the two independent variables (comprising of supervisor support and role overload) are shown in Table 2.

Table 2: Regression Results Involving SupervisorSupport, Role Overload and OCB

		Depe	endent Va	ariables
			0	CBI
Predictors	осво		S	td. β
			M 1	M 2
	Std (
	2			
Step 1: Co.				
Variables	10	06	13	08
Age ^a				
Gender ^b	.11**	.09*	.03	.03
Organizational tenui	.11*	.07	.16**	.12**
Job tenure ^d	03	03	03	04
Step 2: Ind Variable				
Supervisor support		.32*`	.1	0**
Role overload		.07		.08*
R²	.03*	.17*`	.03**	.14**
Adj. R²	.02*	.15*`	.02**	.12**
R² Change	.03*	.14*	.03**	.11**
F-Change	2.83*	16. 4	2.60**	12.74**

Note. N=393, ***p<.01, **p<.05, *p<.10, ^a above 36 years and below=1;^bfemale=0, male=1; ^cabove 8 years below=1; above 11 years=0, 11 years and below=1

As illustrated in Table 4.2, it can be seen that control variables accounted for 3.0 % ($R^2 = .03$, *F*-change = 2.83, p<.05) of the variance in OCBO. Of the four control variables, only gender was significantly and positively related to OCBO (β =.11, p<.05). On adding the variables relating to supervisor support

and role overload the R^2 increased to 17. This indicates that supervisor support and role overload were able to explain an additional of 14.0% (R^2 change = .14, p<.01) of the observed variations on OCBO.

As for another dimension of OCB, the control variables accounted for 3.0% (R^2 =.03, *F*-change = 2.60, p<.05) of the variance in OCBI. Of the four control variables, only organizational tenure was significantly and positively related to OCBI (β =.16, p<.05). On adding the supervisor support and role overload, the R^2 value increased to 14. This indicates that supervisor support and role overload were able to explain an additional of 11.0% (R^2 change = .11, p<.05) of the observed variations on OCBI.

The results of the analysis revealed that supervisor support was found to have significant and positive relationship with both dimensions of OCB (OCBO and OCBI). The results of the analysis demonstrated that role overload had significant and positive relationship with OCBI. The results revealed positive and significant findings between job demands and OCB which are unexpected findings as they contrast with the prediction.

DISCUSSION, IMPLICATIONS, AND LIMITATIONS

The main objective of this research was to examine the effects of supervisor support and role overload on organizational citizenship behavior (OCB- organization and OCBindividual). This study found that supervisor support had a significant and positive relationship with OCBO and OCBI. This finding implies that lecturers who believed that their supervisors valued their contribution and cared about their well-being tended to exhibit higher levels of OCB. The finding is consistent with Podsakoff, Mackenzie and Bommer (1996). Le Pine. Erez and Johnson (2002) and Somech and Ron (2007). Moreover, the findings support the basic premise of social exchange theory (Blau, 1964) in which people always seek to reciprocate those who benefit them. In other words, when a supervisor engages in helping behavior toward an employee, the employee will be obliged to repay the supervisor so that the exchange is mutually beneficial. In addition, this finding showed that social exchange can be used to explain whv subordinates become obligated to their supervisors to perform in ways beyond what is required of them in the formal employment contract (Settoon, Bennett & Liden, 1996).

findings The of this study demonstrated that role overload had a significant relationship with OCBI. However. this relationship was contrary to expectation as the relationship turned out to be a positive one. This finding is congruent with the study conducted by Weatherly and Tansik (1993) who found that the front desk employees responded to role stressors by workina harder to satisfy work demands and engage in OCB. One plausible explanation for this could be

due to the fact that respondents age are between 24 to 58, with an average age of 35.87 vears (SD=7.20). Even though these lecturers experience high workload, since they have been in the teaching profession for quite some time, with an average of 11 years (SD= 6.85) for their job tenure, most of them are experienced lecturers who are used to this kind of workload. Thus, they are able to cope with their heavy workload. The sampled lecturers were relatively experienced in terms of their organizational tenure with an average of 8 years (SD= 5.57). Being in the teaching profession for a considerable length of time may have helped them develop copina mechanisms to manage their heavy workload. In such situation, these lecturers may view that it is their responsibilities to educate the students, and therefore, are willing to engage in the voluntary behaviors.

In of implication, terms since supervisor support was found to have significant impact on lecturers' performance of OCB, directors of polytechnics and head of departments should take several routes that may enhance lecturers' OCB. Thus, directors and head of departments in polytechnics are encouraged exhibit supportive to behaviors towards their lecturers such as "providing help when needed. appreciating their extra efforts, treating them fairly, taking pride in their accomplishments and caring about their well-being". These behaviors might portray to lecturers that their supervisors are beina supportive, which in turn will lead them to go over and above their call In addition, it of duty. is also suggested that specific training coaching and programs (e.g. mentoring) are developed to help directors and head of departments learn to exhibit supportive behaviors. One suggestion that could be used by the Ministry of Education in order to reduce the lecturers' heavy workload is by hiring more administrative staff so that the clerical work that burden the lecturers could be lightened. Another suggestion to reduce the heavy workload of the lecturers, the Ministry of Education could reduce the number of students in each class (30 students in each class).

As for the limitation, future research on OCB might want to consider job resources and job demands variables other than those examined in this study so as to check whether they vield similar predictive patterns. Possible predictors of job resources could include performance feedback (Bakker, Demerouti & Euwema, 2005; Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Schaufeli & Baker, 2004) and coping strategies (Maslach, Jackson & Leiter, 1986). As for job demands, future research could consider work-family conflict (Bakker et al., 2005) and physical environment (Demerouti et al., 2001). In addition, future research might want to include personal resources such as self efficacy (Bandura, 1989; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007) and optimism

(Xanthopoulou et al., 20007) as they would provide greater insights into the antecedents of OCB.

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HOW LEAN MANUFACTURING FAILED?

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Abstract

This case study is discussed the implementation problems in Lean Manufacturing. The case studv discussed base on Ortiz (2008) Case Study: How Lean Manufacturing Fail, from his book, Lesson From a Lean Consultant: Avoidina Lean Implementation Failures on the Shop Floor. From the study, some of the failure is identified such as poor management commitment, poor consultancy, and role of supervisor and lack of consistency.

Introduction

Lean is a powerful organization and manufacturing model that most experts agree could be the dominant paradigm worldwide in the next five to 10 years. Among the benefit of using lean manufacturing is to lower the production cost, as well as effective use of space and equipment. Benefit of lean can be categorized as;

- Improved Customer Service; delivering exactly what the customer wants when they want it.
- Improved Productivity; Improvements in throughput and value add per person.

- Quality; Reductions in defects and rework.
- Innovation; staff are fully involved so improved morale and participation in the business
- Reduced Waste; Less transport, moving, waiting, space, and physical waste.
- Improved Lead Times; Business able to respond quicker, quicker set ups, fewer delays.
- Improved Stock Turns; Less work in progress and Inventory, so less capital tied up (Kilpatric, 2003).

2. HOW LEAN MANUFACTURING WORKS?

manufacturing Lean focus on eliminate the seven wastes there are: transportation. overproduction, motion, waiting, inventory, defect and over processing (Kilpatric, 2003). However, current lean implementation failure rates-well over 50% according to many lean and professionals-are advocates much too high for this to happen (Anvari, et. al., 2011).

Lean in definition can be: lacking in richness, fullness, quantity; poor that in word brings up unfortunate connotation (Kilpatric, 2003). Lean is a business methodology, not a simply manufacturing tool (Roziman, 2007). In other word, it requires total commitment from top management level and must flow down to all departments and throughout all level of business. Failure to understand how improvements are made can affect another area in transformation failure. Many believes that by simply applying the tool such as visual management, value stream mapping, kaizen, or even 5S will get them guick success(Anvari, et. al., 2011). Is there any time to learn the theories and concept needed to sustain the transformation? Is there any review done on the theories and concepts thoroughly and align the business to the methodology? Is there any plan on how to sustain and improve the concepts? How about the management decision and goal?

3. CASE STUDY

Base on a case study by Ortiz (2008), he provided a great example base on his own experience as a lean manufacturing engineer at a company that fail to achieve success while implementing lean manufacturing. Lean in term of definition is a systematic approach to identify and eliminate the waste through the continuous improvement concept, by following the product at the pull of the costumer to achieve perfection. In his case study, there were several aspects that he touches as a contribution for failure in lean implementation.

3.1 Poor Management Commitment

First the poor management is commitment. Managers that not pay attention and not aware about the goal of implementing lean will be confused and loss focuses. As a leader and manager it is on their hand to set a goal, vision, mission, and change the company culture by demonstrates the commitment and accountability for the changes. They have to show total commitment to the process and listen to people under who also have the same vision to achieve the continuous improvement. From the case study Ortiz (2008) believed that, the top management made a lot of mistake. The company only selected two managers to attend the workshop while in lean manufacturing it is important to involve many people, from various departments. When many people were trained by lean concept, they can return to their department and train their additional employee. When there only two managers involve, their only focus on their own department.

3.2 Poor Consultancy

The other problem in the case study was the consultant appointed. The consultant never gives the proper training on kaizen or how kaizen events were conducted. Ortiz (2008), find that the consultant make the

employee become confuse and at the same time, lower the employees' morals. It's all because the lack of communication and structure consultant between the and employee involved. At this time, the management should play their role. But it has same featured as audit; the management is always 'busy' entertaining the consultant rather that focus on why the consultant is paying for. Hiring a lean consultant should be very helpful, but only if the consultant selected is knowledgeable and proficient, provides hand-on consulting and has excellent communication skills. It's not about how much you pay or how long the consultant play the game, but how effective and efficient the consultant work and how much the company can improve. The company that was more concern about impressing the consultant than listen to its people neither will provide neither direction nor improvement.

3.3 Lack of Consistency

Lack of accountability was the other problem in the case study. It affects the performance of the whole line of assembly. When operator resists operating with the new standard and requirement, it will affect the whole team. Moreover, the supervisor refuse to enforces the new procedure allow the operators to do and whatever they wanted. It is because in the mind of employee, new procedure means more work. In this case, new environment of continuous improvement cannot be implemented. In order to implement something new

the first things that a manager have to consider is how to make it as a culture. For example, 5S maybe can be implemented very easy in 'all Japanese' company because it is part of their own culture. But how to implement 5S in other places where 5S is not a culture? The answer is the manager has to make it as a culture starting within him or herself. Show that it can be implemented. Show the commitment and willingness to achieve the goal. Make the employee believe that the goal can be achieved. Give full support and by doing that, it will motivate the employee and at the same time naturally follow the new standard and requirement. It will automatically become a culture when the result in term of profit can be interpreted.

3.4 Role of Supervisor

Another problem occur in the case study is when the production manager begin to change the roles of supervisor. the production А supervisor is like a key player for a production line. The problem is when the supervisor is placed with the new supervisor from outside the line, the conflict will arise when the supervisor don't have any trained about lean manufacturing and try to use the method that he used in his previous place which are not systematic as new line his in charges. It will affect the morale of all the team involved and it will create argument into agreement without any solution. To avoid this, the management should not replace staffs that work very good in a team. If the managers want to

employ a new staffs or replace the old staff, make sure that the staff have enough knowledge about the line and some knowledge about lean manufacturing. Business committing to lean transformation should not use the time benefit gained from Lean as an excuse to pile more work onto their employees. Simply adding more to the pile only work lower productivity, morale, and both the physical and mental health of the employee. Taking the time to work with the employee, learning the to identify necessary task, removing unnecessary work and discovering more available time to do more valuable work without increasing the overall workload will result in better understanding between employee and manager, more trust, communication and overall employee performance.

Conclusion

It seems that the failure of lean manufacturing is not because of the lean itself, but it is more to the person who involve in lean itself. In the case study, Ortiz (2008) was the lean manufacturing engineer where he had a lot of idea to expand the lean manufacturing in the company. However, he doesn't get any support the top management and from insignificantly been accuse of the failure of the lean implementation. Base on Ortiz (2008) case study, it shows that the top management plays the biggest role in succession of implementing lean. It is because lean is not a simply manufacturing

tool. Lean is a business methodology. Its cover all aspect in the business. The waste reduction is not only focus on the production line but most of the waste the can be eliminate is outside the production line itself such as transportation, waiting time, inventory Commitment and so on. and communication is the key to success manufacture. The in lean top management also must have a clear in implementing doal lean manufacturing and give full support to the lower subordinate. Listen to the employees who have the same vision in continuous improvement. When assign a consultant, make sure they done their job well and value for the money. Train the employees and make sure that they have the knowledge about lean manufacturing. Involve all people and make a strong team. Make sure managers know what they are doing and accountable in any decision their made (Oakland, 1996). Last and not least create the culture of continuous improvement as the main culture of the company.

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A STUDY OF GENERATION FLUX LEADERS

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Abstract

Leadership plays an essential role in success the of managing organization. This article is presented on the GenFlux leadership styles (the criteria of GenFlux Leaders). The transactional and transformational approaches have significantly given impact in managing the organization in the current competitive business environment. Other leadership constructs such as entrepreneurial, ethical, innovative and creative have emerged from the leaders in this article and require further discussion in the future.

Keywords: GenFlux leader, leadership styles, transactional leadership, transformational leadership

Introduction

It is no secret that the modern workplace is confusing and chaotic environment. This can be especially true for people over 50 accustomed to navigating within a (generally) more predictable framework. Often they find themselves under constant pressure to adapt to new work situations – just when they hoped to be at the height of their careers. But along with change comes opportunity. Generation Flux Leaders as described by Safian (2012) [1] in his articles are those leaders regardless of their age, or size of company, who dealt with this unpredictable changing environment. They dealt with chaos and uncertainty, and yet were able to thrive with it. GenFlux leaders are described to have unique psychographic qualities and are labeled as prone to adaptability and flexibility, willingness to learn and decisiveness as well as proactive as the world change rapidly. On the other hand, the GenFluxers believe that hierarchy in organization is essential in which it provides guidance or mechanism to monitor the implementation of their business operation. However, they also rely on teamwork of bottom up channel, rather than top-down communication, which serves as useful

Information sources of what is happening in the market place.

1. CRITERIA OF GENFLUX LEADER

You have to optimize for the first derivative. Even the biggest, most traditional companies must be more nimble.	CLARA SHIH CEO, Hearsey
The imperative is simple but daunting: Make the organization feel small even if it isn't.	TROY CARTER CEO, Atom Factory
You have to build an organization that is capable of acting like a start- up but can operate at large scale simultaneously	Aaron Levie CEO, Box
Leadership is about ambiguity. You need a balance between command-and- control and bottom-um. It's not one of the other.	PADMASREE WARRIOR Chief Strategy and Technology Officer, Cisco
A smarter organization needs multiple, different kinds of brains, of intelligence, rather than specialists.	JOHN LANDGRAF President and GM, FX Network
We had to change our structure to become a network. We had to go for flexibility.	STANLEY MCCHRYSTAL Retired Four- Star General U.S Army
long gone. We'd worry about using	CEO, W.L Gore & Associates

one tool across	s the	
whole		
organization.	lt	
has to	be	
situational.		

Table 1: Criteria of GenFlux Leader

What they said refer to Table 1 above, it has been stated the criteria of GenFlux Leader from what the leader said. Fast Company says that what defines members of Generation Flux is a "mind-set that embraces instability that tolerates - and even recalibrating enjovs careers, business models and assumptions.' Unlike Generation X and Generation Y, Generation Flux refers to a psychographic, not a demographic. You can be a Generation Flux employee at any age.

Four (4) tips for becoming a Generation Flux Employee [2]:

- (i) Become a habitual "skill hoarder"
- (ii) Commit to a daily dose of learning
- (iii) Mix up your media
- (iv) Take timeouts for yourself

2. DEMANDS OF LEADERSHIP

GenFlux leaders must embrace hierarchical top down leadership and bottom-up systems. They must: (i) Develop leaders and encourage failure. (Kelly, Gore); (ii) Encourage experimentation and implement efficient processes. (Parker, Nike); (iii) Institutionalize constant change. (Smith, Intuit); and (iv) Be ready to constantly throw aside

previous assumptions. (Crowley, Foursquare) (in Safian, 2012).

In addition, the GenFluxers are also aware that the rule of current competitive advantage is "be creative die", thus they continuously or promote and encourage creativity among their people. This kind of leaders also knows that the future is ambiguous and uncertain. that nothing can predict success, as much as nothing can predict failure, but somehow rather, decision need to be made, risks are unavoidable. These are the challenge that they have and eniov to take on. But one thing for sure, they are not afraid of failure as it is part of learning process. This hard experience or known as tacit knowledge is invaluable to them, which shaped their current success. They are very focus of what the near future can bring them whereby they see opportunities while others see problem and uncertainty.

At the first instance, GenFlux leaders may not be the smartest or the most intelligent person in their league but they are those leaders that are hunger for success or accelerated achievement, and possess high adaptability when face with volatility. They enjoy the work that they indulge in, and act as proactive as possible, not just waiting for others to eat their share of competitiveness. 'Cadence of change' culture is embraced and being nurtured within the organization. Safian (2012), in his first article on GenFlux leaders described that business leaders need to be creative, adaptive, and focused in their techniques, staffing and philosophy. Thus it is imperative that they must be sufficiently enthusiastic, passionate, and energetic enough to perform their duty as the leader of the

organization or in the organization where they work. Craving for new experience and new knowledge make them more versatile and multiskilling in adapting to new challenges.

The GenFlux leaders are both street smart or book smart people that build a good team comprising people with multiple intelligences. which strengthen and complement their own intelligence / knowledge. These qualities of GenFlux leaders are shown by Mark Parker (Nike's CEO), Aaron Levie (CEO of Box), John Landgraf (President of FX Networks), and others, just to name a few, as mentioned in Safian's second article titled Secret of Generation Flux Leaders (2012).

1. MALAYSIA FLUX LEADER (TAN SRI DATO' SERI DR TONY FERNANDES)

Tan Sri Anthony Francis Tonv Fernandes, is a Malaysian Indian entrepreneur. He is the founder of Tune Air Sdn Bhd, who introduced the first budget no-frills airline, Air Asia, to Malaysians with the tagline "Now Everyone Can Fly". Fernandes had reinvented and remodeled Air Asia based on the highly successful Irish budget airline, Ryannair. It targeted millions of Asians who had never flown and wanted inexpensive basic transportation, fitting well with its slogan of "Now everyone can fly".

As a Low-Cost Carrier, Air Asia imposed major cost-cutting measures such as using a single type of aircraft, online and paperless ticketing to eliminate travel agents commission, charging for in-flight meals and seating, reducing turnaround time on

the ground and ensuring frequent flights. By the year ended 30th June 2006, Air Asia had served 65 cities and carried 9.3 million passengers (Ismail, 2010) [3]. Fernandes is now running a profitable enterprise, a remarkable revival of the loss making state-owned enterprise that he took over from the Malaysian Government.

1. LEADERSHIP STYLE

Tony Fernandes' foresight and vision has turned Air Asia to become one of the well known airline brands in the world. Manv observers have attributed the success of Air Asia due to the strong leadership of Tony Fernandes. He was able to create organizational aood culture and stressed the importance of working as a team.

As the leader in a big organization which has 10,000 employees, he is easily approachable and accessible to all his staff. Schien (2004) [4] noted in his study that organization leaders play a key role of establishing an organizational culture that articulated the behaviors, rules and values critical to the achievement of an organization's mission and strategies. There is no bureaucracy involved in his office and all employees are free to access his office if there is anything important to be discussed and needed an urgent solution.

On leadership philosophy, Tony Fernandes is known to be a leader who believes in openness. He does not believe in hierarchical structure. Believing in talents within the organization and inspiring employees to achieve their dream as he believes everybody have their own dreams just like him. He strongly believes in teamwork and treats all his employees as 'All-stars'.

Tony Fernandes, was quoted by saying this.

"In Air Asia, we consider ourselves basically a **dream factory**. We deliberately decided that we wanted a company where people can pursue their passion and we wanted to make use of all the **talent** that we have inhouse. The culture that we have stems from the fact we want **openness** and we want people to be **creative** and **passionate** about what they do. In order to do that, we've got to **inspire** them."

As what he believes in the current business scenario where business has become much more competitive therefore. having too much bureaucracy could impede the growth of the business. The work culture in introduced Air Asia by Tony Fernandes has made a big impact on the growth of the organization as the employees were very happy to move forward in the same direction. Employees have been treated as family hence, they feel very proud to be part of the team. Any contribution of ideas for the benefit of the organization is well accepted and the management rewards these outstanding ideas. Tony Fernandes' leadership stresses the importance of good interaction among all the staff as he maintains a non-hierarchy practice in the office. The internal integration within the organization articulates the good working environment (Schein, 2004). For such a good leadership practice, he has gained trust and respect among his dedicated employees.

CONCLUSION

Leaders need to creates times for reflection and ask their staffs to do it individually.

Leadership will need to make time to clear their brains. Some of the things that matter most unfold in the same rhythm they always have.

Failure is part of the success. Successful leaders exhibit mastery of core competencies, including integrity. passion, communication, team-building, team leadership. credibility, strategic thinking, resultsdriven, vision, and accountability. Business organizations are affected by the type and character of leadership found within the organization.

Business today is nothing if not as **Opportunities** paradoxical. for leadership exist at all levels of experience and within all professions. Individuals should look for opportunities to lead and practice skills their leadership and competencies.

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THE IMPACT OF WORK STRESS ON JOB PERFORMANCE OF ACADEMIC STAFF IN SIX MALAYSIAN POLYTECHNICS IN NORTHERN REGION

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Abstract

The polytechnic Education Department (JPP) has outlined some plan of action and a timeline for achieving the plan targets. Among the plans are the developments of 50 curriculums in new programme consistent to The Needs Key **Economics** Activities (NKEA) requirement and an implementation of the 18 Advance Diploma Programme and twinning programme on 2015 next coming. As a leader in technical education and vocational training (TVET), polytechnic is responsible for producing the quality technology in line with The National Education Philosophy generally and The National Higher Education Strategic Pelan (PSPTN) particularly. This goal also will fulfil the needs of industries that require high competent graduates in all aspects including soft skills and have knowledge of entrepreneurship. The outcome based education (OBE) in curriculum assessment instructional (CIA), staff competence, increase empowerment English Language among staff, rated under polyrate, quality policy department, recognition,

collaboration and internalization are some of major transformation agenda. The recognition requirement of the Malaysian Qualification Agency (MQA) based on the Malaysian Qualification Framework (MQF) is challenge for another the polytechnics. All these activities are recorded and monitored under the Key Performance Indicator (KPI) by Ministry. These phenomenons eventually increase the workload among staff. [1]

Introduction

This chapter describes the frame of study. It focuses the the on background of the study, highlights the problem statements faced by the polytechnics staff. research objectives for this study, followed by research question. The definition of key terms also given to get more clearly for those may not familiar with polytechnics the system. Then followed by significance of study for future researcher regarding to the topic or institution, polytechnics staff, the top manager, the Polytechnic Education Department (JPP) and the Ministry of Education Malaysia.

1. BACKGROUND OF THE STUDY

The changes of globalization rapidly has made technical and vocational education are one of the main agenda for Malaysia development through the Nation's Vision 2020. Therefore in order to achieve a developed nation status, there are a lot of things to be noted. First, increase in manpower in the area of technical and vocational education and second increase the number of technical and vocational education institution. After over forty years stood as an institution of technical education and vocational training of the country, polytechnics continuously grow up in response to mainstream of education. Some new policies have been launched under the leadership of the Prime Ministry today. In the 10th Malaysia Plan, The Government Transformation Programme, The Economic Transformation Programme and The New Economic Model parallel to Malaysia principle of "People First, Achievement Preferred". The Ministry of Higher Education has proclaimed the policy in The Strategic Plan of The National Higher Education (PSPTN; Pelan Strategik Pendidikan Tinggi Negara) and currently in its second phase [1].

Thus, inevitably polytechnics also had development programs to meet the aspiration of the country with the launched of the transformation Agenda Polytechnics on February 25, 2010 [1]. As a result, polytechnics are classified into three categories: Premier Polytechnic, Conventional Polytechnics and Metro Polytechnic. development certainly The arise some major implications in polytechnics education system especially for their lecturers or academic staff. Transformation of polytechnics has three main goals for the institution. First, to make it as a top choice for at least 50 percent from Sijil Pelajaran Malaysia Candidate, increasing 85 to percent of polytechnic's graduate as a leader in Technical Education and Vocational Training (TVET) and last but not least, the polytechnics graduates are comparable and competitive to universities [1]. The Polytechnics Education Department (JPP) is planning to make the polytechnics as the first choices for excellent and medium excellent from SPM leavers with excellent polytechnic's lecturers. The human capital development required a systematic planning and long-term plans. Regarding on the situation, the polytechnic Education Department (JPP) has outlined some plan of action and a timeline for achieving the plan targets. Among the plans are the developments of 50 curriculums in new programme Needs Key consistent to The Economics Activities (NKEA) requirement and an implementation of the 18 Advance Diploma Programme and twinning programme on 2015 next coming. For fulfil the mission, the Polytechnics Education Department (JPP) has put an efforts to raise the qualified academician with having at least 165 having

doctorate degree while 2,600 having master and 20 percent lecturers have professional certification industry. As a leader in technical education and vocational training (TVET). polytechnic is responsible for producing the quality technology in line with The National Education Philosophy The generally and National Higher Education Strategic Pelan (PSPTN) particularly. This goal also will fulfil the needs of industries that high competent require graduates in all aspects including soft and have knowledge skills of entrepreneurship. Therefore, it is important for the polytechnics to have a healthy culture, starting with the vision, mission and clear objective, an efficient of administration team, a conducive climate, good interaction between employees, students and community surrounding. The fourth essence of PSPTN is to empower the higher education institution, which is to ensure that the system of Higher Education governance in Institution is efficient, effective and moving continuously towards autonomy by strengthening the leadership system and top management institution in order to provide excellence services. Therefore. the levels of iob satisfaction among staffs inevitably become an important element in the transformation agenda.

The outcome based education (OBE) in curriculum instructional assessment (CIA), increase staff competence, empowerment English Language among staff, rated under polyrate, quality policy department,

recognition, collaboration and internalization are some of major transformation agenda. Several mechanism have been introduced in enhancing the teaching and learning method like Online Distance Learning (ODL) and use the CIDOS. The recognition requirement of the Qualification Malaysian Agency (MQA) based on the Malaysian Qualification Framework (MQF) is another challenge for the polytechnics. All these activities are recorded and monitored under the Key Performance Indicator (KPI) by ministry. These phenomenons eventually increase the workload among staff. Extension from the polytechnics transformation. the scholarship department from Ministry of Education Malaysia has increase the allocation of scholarship to the polytechnics staffs who want to further the education into local or abroad institution weather in Master or Doctor of Philosophy. This step will enhance the development of among knowledge polytechnic academic staffs. Through the transformation pelan, it will change polytechnics role as the platform in providing the human development base on technology and industry. Nevertheless. the pelan of transformation programme will require polytechnics to have committed and competent workforce to perform the job scope by right profession and expertise. The task of academic staffs is to convey and extent the quality knowledge and skills to the polytechnics student through the teaching and learning

process beside the other additional task.

1.1 Problem Statement

Refer to Sved Saad Hussain Shah [2], in workload and performance of Employee, workload has significant effect on the employees performance. If the workload is too high or too low, it would give low performance. Nevertheless, it is a management task to create a culture in the organization. Vice versa, if workload extensive high, the is it is responsibility of the leader to decrease the workload level. Stress means different things to different people. Many people describe it as feeling tense, anxious, or worried. Scientifically, these feelings are all manifestations of the stress experience, a complex programmed response to perceived threat that can have both positive and negative results. Stress is seen partially as a response to some stimulus, called a stressor. A stressor is a potentially harmful or threatening external event or situation. Stress is more than simply a response to a stressor, however. It is the consequence of the interaction between an environmental stimulus (a stressor) and the individual's response. That is, stress is the result of a unique interaction between stimulus conditions in the in the environment and the individual's predisposition to response in a particular way. Stress is defined as an adaptive response, moderate by individual differences. that is а consequence of any action, situation, or event that places special demand on a person [2]. It is important to note that not all stress is bad: as a matter of fact, stress is needed to help all individuals function at a productive level. This "good stress" (or eustress) occurs when the individual perceives or interprets an event or situation in a positive way. So stress is viewed as the response of a person to certain stimulus condition (action, situation, events) or stressor. This allows us to focus attention on aspects of the organizational environment that are potential stress producers. Whether stress is actually felt or experience by a particular individual will depend on that person's unique characteristics. Furthermore, note that this definition emphasizes that stress is an adaptive response. Stress is result of dealing with something (eg: a person, an event, a problem) placing special demands on us. Special here means unusual, physically or psychologically threatening, or outside our usual set of experiences. Starting a new job assignment, making an important presentation, missing a plane, making a mistake at work - all of these actions, situations, or events may place special demands on us. In that sense, they are potential stressors. It potential because say not all stressors will always place the same demand on people. For example, having a performance appraisal meeting with the boss may be extremely stressful for someone and not the least stressful for someone co-worker. For an action, situation, or event to result in stress, it must be perceived by the individual to be a

source of threat, challenge, or harm. lf there perceived are no consequences-good or bad-there is no potential for stress. Table below illustrates. three kev factors determine whether an experience is likely to result in stress or not. Frequently not knowing places more demands on people than does knowing, even if the known result is perceived negative. as Finally. duration is а significant factor. Generally, the longer special demands are placed on us, the more stressful they are. Being given a distasteful job assignment that lasts only a day or two may be mildly upsetting, while the same assignment lasting for six months could be excruciating. Most people can endure short periods of strenuous physical activity without tiring; prolong the duration, however and even the fittest among us will become exhausted. Role conflict is present whenever a person receives conflicting messages about what individual expected to do in the job. Component of role conflict include being torn by conflicting demands from a leader about the job and being pressured to get along with people with whom they are not compatible. Regardless of whether role conflict results from organizational policies or from other person, it can be a significant stressor for some individuals. A research analysis of 137 research studies that gathered information from 35,365 employees found that role conflict has negative effect on employee performance. Role conflict also leads to other problems for employees and organisations [3]. The under loadoverload continuum is presented in the figure 1. The optimal stress level best provides the balance of challenge, responsibility and reward. The potential negative effects of overload can be increased when overload is coupled with low ability to control the work demand. Research individuals suggests that when experience high work demands with little or no control over these demands, the physiological changes that occur persist even after the individual has left work. Perhaps the most persuasive individual stressor of all is the unrelenting pace of change that is part of life today. Research of Performance Pressure as a Double-Edge Sword: defines that pressure would determines the performing in particular occasion weather the success or failed [4]. According to Md. Shariful Alam [5] in the research of Relationship between Employee Recognition Employee and Contribution in Service industry, most of organizations today are not emphasize on importance of staff. recognition to their This research has proven that employees with good recognition from their leader tend to be more self-esteem, high confident level, positive minded to accept on new challenging job and more committed to be innovative [6]. Sapora Sipon [7] research against that stress would give negative health impact on teachers. Continuously stress needs to be addresses through stress management programme and effectively. Jungwee Park in Work Stress and Job performance stated that work stress is define as the harmful physical and emotional as a

result of job requirement doesn't meet the workers capabilities, resources and needs [8]

1.2. Research Question

Therefore, this study would attempt to achieve five main questions as follows;

- a) What is the perception of work stress to academic staff for their workload factor?
- b) What is the impact of work stress to academic staff for time pressure?
- c) What are the factors of work stress to academic staff for recognition factor?
- d) What is the level of work stress to academic staff for insufficient facilities?
- e) What is the impact of work stress to academic staff for student misbehaviour?

1.3. Research Objective

Therefore, this research is trying to accomplish five main objectives as follows;

- a) To determine the level of work stress to academic staff pertaining to workload factor.
- b) To examine the level of work stress to academic staff relating to time pressure factor.
- c) To measure the level of work stress to academic staff relevance to recognition factor.

- d) To determine the level of work stress to academic staff pertaining to insufficient facilities factor.
- e) To measure the level of work stress to academic staff related to student misbehaviour factor.

1.4. Definition of Key Terms

For better understanding in this research, here are some definitions of key terms regarding to the subject matter.

a) Polytechnics The Higher Education of Institution under Ministry of Education Malaysia to support the ministry in fulfilling its responsibility to generate semi-skilled employment and middle executives. Currently, by the 30 polytechnics in the country. more than 300,000 graduates have been through a variety programme of study in engineering, technology and commerce have contribute to the society and country. [1]

b) Academic Staff

Academic Staff is an individual who is responsible in teaching and learning process for achieving the polytechnics mission. Until 2012, there are 2 percent (106 persons) having PhD, 34 percent (1800 persons) are master holder and 3366

are degree holder in the Malaysian Polytechnics worldwide [1].

c) Work Stress

Work stress is a problem faced by an employee in many organizations today. Basically it will affect the mental and physical of employees and eventually in the long run it will affect the organization performance.

d) Job performance

Job performance is an output individual or service measured bv quality and quantity produced from everv employee or staff in particular tasks. Usually it determined by individual's motivation and the willingness to do the job [3].

e) Workload

Work Load is an excessive requirement and pressure that are not meet to worker's knowledge and capabilities, where there is less opportunity of and practical slightly support from others.

f) Time pressure

The Time Pressure means lack of time or shortage of time to complete a particular task or job. It is a situation where individual an unable to achieve a

specific goal or mission that set earlier due to shortage of time.

g) Recognition

Recognition is defined as admission, approval and genuine appreciation.

h) Insufficient facilities

Insufficient facilities mean lacking the requisite qualities or resources to meet a task. In this research perspective, it refer to lack of equipment that academic staff can be used for instance Overhead Projector (OHP). Liquid Crystal Display Projector (LCD Projector), Laptops, not environment conducive and others.

i) Student Misbehaviour

Misbehaviour is defines as the acts in the workplace that are done intentionally and constitute a violation of rules pertinent to bad behaviour. In this context, it refers to the student's bad attitude such discipline as problem, not attend to social the class. registration behaviour, subject problem, parent's interference and others.

1.5. Significance of the study

The finding of the study is expected to contribute beneficial information to

the relevant parties and others interest.

a) Polytechnics Staff

This study is expected to be guidance for the academic staff of polytechnics and the entire academician generally in carrying the responsibility. This is because they are among the group who facing the anxious stress.

b) Top manager

Hopefully the top manager of all polytechnics like directors. deputy directors. heads of department, and heads of unit can keep in seeing this case as an issue of concern in order to reduce or put aside the factor contribute to work stress.

c) Polytechnics Education Department (JPP)

In pursuina ideals of mission and vision of polytechnics, this party should taking into account the academic staff's welfare in term of their emotion and social life because they are major capital in contributing interest to the stakeholder. [1]

d) Ministry of Education Malaysia

The ministry is the main player in drafting the

plans and actions to be taken to ensure Malaysia can be a developed country and competitive to others. According to Md. Hasebur Rahman [11] in the article of Job Employees Stress _ Performance and Health: A Study on Commercial in Bangladesh. Bank when stress is excessive, it would lead to various symptoms on an employees that can harm to their job performance and Health. So it would interference the ministry's direction as a whole.

e) Future researcher

For the future researcher who has same interest to the issue may can use the finding to in order to get more understanding to the topic related and use this result to improve the unfavourable situation.

CHAPTER TWO: LITERATUR REVIEW

2.1 Literature gap

A gap in the literature is a research question relevant to a given domain that has not been answered adequately or at all in existing peerreviewed. A gap in the literature may emerge when the question has not been addressed in a given domain, although it may have been answered in a similar or related area. The researcher found that there are less emphasizing on student misbehaviour

where is actually contribute to the academician's job performance. According to Robert Scott Mcgowen [12], factors of physical surroundings that affect behaviour are known as ambient environmental conditions (O'Neill, 2000).

2.2 The Person-Environment Fit Model

A review of the literature suggests that researchers have attempted to find an explanation regarding the potential relationship exists between that stress, an individual, and the environment. It has been theorized that if there is not an accurate fit between the person and the environment, strain will occur. person More specifically, а environment fit suggests that individual fit certain occupations based on the interaction of a multitude of variables. Theoretically, P-E Fit -predicts that the magnitude of strain experienced by an individual is proportional to the degree of misfit between the individual and their occupation [13] . Individual's -varv in their needs and abilities just as jobs very in their incentives and demands. Work environment would interact with an individual's characteristics which determine individual's strain and give impact to behavior and health. The most crucial of health is when there between are matching work environment and persons. There will be a healthy condition when the person's characteristics such as employee's attitude, talent, skill. capability and resources can fulfil the job's demand and simultaneously work environment can meet worker's potential their skill need. and knowledge (French, 1973). The lack

of person-environment fit would arise problem such as strain due to less ability to fulfill jobs demand. The continuous strains can give bad health, lower productivity of job and other job problems

2.3 Effort-Reward Imbalance Model (ERI)

The Effort-Reward Imbalance Model always related to recognition with job performance. The model describe that it is a process of reciprocity between efforts and suitable rewards and the mismatch between the factors would cause to stressful experience [13]. Reward can be in terms of monev. the of progressiveness carrier opportunities, self esteem and self security. An effort comes from two components: First is intrinsic effort, that is individual motivation and second one is extrinsic effort or external encouragement such as workload. An individual who puts high efforts on his or her iob but compensate with low rewards would suffer emotional exhaustion 21 times compare to those who with low efforts but obtained high rewards. The theory perceives that woman who paid less than men with the equal job generally suffered work stress the most severe.

2.4 Workload

Occupational stress is defined as the perception of a discrepancy between environmental demands (stressors) and individual capacities to fill these

demands for example, argued that the causes of occupational stress include perceived loss of job, and security, sitting for long periods of time or heavy lifting, lack of safety, complexity of repetitiveness and lack of autonomy in the job.

2.6 Recognition Factor

According to Md. Shariful Alam [2]. appreciation is a basic for human need. The worker response to appreciation as expression that their work a well done. When their works are valued it will lead to raise the productivity and motivated them to improve and maintain their good job. Recognition (acknowledgement and approval) precedes and can lead to desired employee outcomes such as a promotion, a raise or an assignment to a prestigious, desired project. In other words, recognition may have considerable outcome utility and incentive value for future employee behavior. Also, it should be noted that recognition given by those who have the power and resources to make desired outcomes a reality for the recipient, will have stronger effects than those recognition givers who do not have such power or resources.

2.7 Time pressure

Pressure based on performance are differ from external pressure such as crisis pressure and time pressure. The team which facing pressure on performance would tend to perform well distinct to meeting a deadline or survivina for а crisis. Effective communication is very crucial for understanding the distinction for predicting team process because as note, "It is being paramount matter when we accountable for certain issues in predicating behaviour. rather than something that we are not responsible.

2.8 Insufficient Facilities

According to Nnuro, Edward Kwaku [9], occupational stress is caused by lack of resources and equipment; work schedules (such as working late or overtime and organizational climate considered are as contributors to employees stress. Occupational stress often shows high dissatisfaction among the employees, job mobility, burnout, poor work performance and less effective interpersonal relations at work

2.9 Student Misbehaviour

According to Robert Scott Mcgowen [12] in the research of The Impact of School Facilities on Student Achievement, Attendance, Behavior, Completion Rate And Teacher Turnover Rate In Selected Texas High Schools the factors of physical surroundings that affect behavior are known as ambient environmental conditions.

2.10 Theoretical framework



Figure 1 Theoretical Framework CHAPTER 3: METHODOLOGY

3.1. Population

Refer to the Sekaran (14] described the population of a research as the study of a large group of interest for which a research is relevant and applicable. The Management and staff of Polytechnic constitute the target population for this research. All the departments of the polytechnic comprising of academic staff only to take part in the exercise. The population includes six polytechnics in the Northern Region. They are Ungku Omar Polytechnic, Ipoh, Perak (PUO). Seberang Perai Polytechnics. Permatang Pauh, Penang (PSP), Balik Pulau Polytechnics, Penang (PBU), Tuanku Sultanah Bahiyah Polytechnic, Kulim, Kedah (PTSB), Sultan Abdul Halim Muadzam Shah Polytechnics, Jitra, Kedah (POLIMAS), and Tuanku Sved Siraiudin Polvtechnic, Arau, Perlis (PTSS). The respondents selected are academic staffs only. [1]

3.2. Sampling Technique

The systematic sampling method was used to select participants for the svstematic sampling studv. The design involves drawing every nth element in the population starting with andomly chosen element between 1 and *n* Sekaran [14]. The systematic sampling technique is a way of selectina respondents which determines how to select members of a population that will be studied. By this method, every "nth" member is selected from the total population for inclusion in the sample population. The respondents were selected from starting member of a group а example academic staff and then the means was repeated in other groups to select the other respondents. This technique is more efficient because it improves accuracy of estimates.

3.3. Sample and Sample Determination

Based on Krejcie and Morgan's [15] table for determining sample size, for a given population of 2017, a sample size of 322 would be needed to represent a cross-section of the population. No calculations are needed to use table.

3.4. Procedure of Data Collection

With the assistance of Administration Department from every polytechnic, 322 out of 2017 who were registered to receive emails from organization were selected by systematic sampling, contacted via email, and asked to participate in the research. Participants were informed that they were voluntary, that the survey would take approximately 20 minutes to complete the questionnaire. To have a valid and a reliable data, the

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researcher ensured that the questionnaires were well prepared which allowed error minimization. The questionnaire had close-ended questions which respondents were asked to tick the appropriate answer. Some of the questions were openended which offered respondents the opportunity to express their views freely.

To obtain the range (K). the population size (N) is divided by the sample size (n). This is illustrated by the following equation :

$$k = \frac{N}{n}$$
$$k = \frac{2017}{322}$$
$$k = 6.26$$
$$k = 6$$

Firstly, a random number between 1 to 6 is selected. In this case, the number that has been selected at random is r, therefore, the next elements to be chosen are r + k, and so on until obtain 322 staff for 6 polytechnics.

3.5. Research Instruments

Open and closed-ended questionnaires were designed for the respondents. The questionnaires were divided into various sections to capture the critical areas spelt out in the objectives for the study. The questionnaires were administered personally and the contents explained to some staff who requested to be guided personally through email responses. A total of three hundred

and twenty two (322) questionnaires were sent out and were distributed to academic staff of the Polytechnic.

3.6. Data Analysis

The data was analyzed in consonance with the set objectives of the study as indicated below:

- To determine the level of work stress to academic staff pertaining to workload factor.
- To examine the level of work stress to academic staff relating to time pressure factor.
- To measure the level of work stress to academic staff relevance to recognition factor.
- To determine the level of work stress to academic staff pertaining to insufficient facilities factor.
- 5) To measure the level of work stress to academic staff related to student misbehaviour factor.

3.7. Likert scales

Each level on the scale is assigned a numeric value or coding, usually starting at 1 and incremented by one for each level. [16]

For example:

- i. Strongly disagree
- ii. Somewhat Disagree
- iii. Neither agree nor disagree
- iv. Somewhat agree
- v. Strongly agree

3.8. Descriptive Analysis

Descriptive Analysis as described [can be used to:

- 1) Descriptive the characteristics of the sample;
- Check variables for any violation of assumptions;
- 3) Address specific research question.

Boxplot is used to check if there are any outliers. In boxplot, points are considered outliers if they extend more than 1.5 box length from the edge of the box. When an outlier is found, it needs to be corrected by checking back the questionnaire for possible mistake in entering the data. If it is an error, correct it and repeat the boxplot. If it turns out to be a genuine score, we need to decide what to do about it. Some statistics writers suggest removing all extreme outliers from the data file. [14]

3.9 Questionnaire Development

The for independent measure variables and dependent variables compiled into are а set of questionnaire. А research questionnaire was designed to capture data for exploring the impact of work stress on job performance of academic staff in six polytechnics in the Northern Region. The questionnaire was split into six parts. The item of the section A asked on background information or demographic. The rest section B until G measured five variables of this study.

3.10 Factor Analysis

Factor analysis is a 'data reduction' used to reduce a large set of data or summerized them into a smaller set of correlated factors or components. It does this by looking for clumps or groups among the inter correlations of a set of variables, thus reducing into a more them manageable number. There are two major of factor analysis. namelv principle components analysis (PCA) and factor analysis (FA). KMO predict if data are likely to factor well based on correlation and partial correlation. KMO is used to identify which variables to drop from the factor analysis because of their lack of multicollinearity. KMO measure varies between 0 and 1, and values closer to 1 are better. Principal component analysis requires that the Kaiser-Meyer-Olkin measure of sampling adequacy to be greater than 0.50 for total set of variables as well as foe each individual variable.

3.11 Reliability analysis

Reliability analysis was carried out for both instruments used. The lower limit of 0.70 for Cronbach's alpha as suggested by and 0.30 for item-total correlation. Construct validity was established by carrying out factor analysis by Varimax rotation for both instruments. A minimum factor loading of 0.50 was applied for the loading to be considered significant.

3.12 Correlation Analysis

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Correlation analysis is used to describe the strength and direction of the linear relationship between two variables. Pearson product moment coefficient is used in this study. Pearson correlation coefficients (r) can take on values ranging from +1.00 to -1.00. The sign in front of the number indicates whether there is a positive correlation (as one variable increase, so too does the other) or a negative correlation (as one variable increase, the other decrease). The size of the absolute value provides an indication of the strength of the relationship. A perfect correlation of 1 or -1 indicates that the values of one variable can be determined exactly by knowing the value on the other variable. On the other hand, a correlation of 0 indicates no relationship between the two variables. SPSS bivariate correlation analysis was conducted to determine the inter correlations among all variables (independent, mediating dependent variables) and using Pearson product moment correlation analysis.

- Small r = 0.10 to 0.29
- Medium r = 0.30 to 0.49
 Large r = 0.50 to
- 1.00

3.13 Regression Analysis

The purpose of multiple regressions to predict a single variable is (response variable) from one or more independent variables (Predictor variables). Multiple regressions is an extension of linear regression with two or more predictor variable. It formulates the model by considering all the predicator variables to have equal weight. In this study, regression analysis will be used to test the relationship between Work stress and job performance.

4. CONCLUSION

I expect my results to show a strong correlation between the workload and job performance of academic staff. There are also an inverse relationship between time pressure and job performance. If an academic staff are given positive recognition, then they will have a positive job performance. There is a positive relationship between insufficient facilities at a workplace with academic staff job performance. The greater the student misbehaviour, the lower the job performance among academic staffs.

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CHALLENGES FACED BY THE ENGLISH LANGUAGE LECTURERS IN POLYTECHNIC : ACADEMIC AND NON ACADEMIC TASKS

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Abstract

This paper discussed the challenges encountered by the English language lectures in their everyday routine at work. The areas of challenges can be divided into two aspects, which related to academic and nonacademic tasks. Both areas are thoroughly explained in the discussion.

Index	Terms:	Challenges,
Polytechnic,	English	Language
Lecturers		

Introduction

No matter at which level an educator is involved in teaching activities, be it at primary level, secondary level and tertiary level, teaching has never been easy. This is because teaching is a challenging task and teaching other language welcomes more interrelated features of the task (Suhaili Abdullah and Faizal Abd. Majid, 2013). Therefore, this articles attempts to share the challenges and problems faced by English language lecturers in Polytechnic, Basically, the English language lecturers in polytechnic have very little opportunity to share the kinds of constraints that they face with the English language teachers in school because of the different setting. The challenges and problems faced by the English language lecturers in polytechnic are indeed deserves for attention as the consequences affected not only the lecturers, but also the students.

The sense of awareness of what is happening around the language teaching field is crucial as this aspect will eventually has some impacts on a lecturer's professional surrounding. The challenges and need to be properly problems addressed so that the room for improvement will always evolve. Hopefully by recognizing what are the challenges and problems face by the English Language lecturers in their everyday working life, the information could be shared with the wider audience and in future we could see some continuous quality improvements to be made later. In this article we will discuss the aspects that have been determined as problematic by the English Language lecturers. There are five challenges and problems faced by the English Language lecturers in polytechnic which will be further discussed in this article.

Concerns Related To Students

The primary challenge and problem faced by the English language lecturers in polytechnic surrounding the students' well-being. Countless studies have proven that teaching English as a second language comes with the language learning drawbacks along with it. The main issue in any second language

classroom is about students' proficiency in the second language. One main concern among the English Language lecturers nowadays is the fact that the students who have been accepted into polytechnic system many of them come with low English grade in their SPM examination and many of them too are found to have failed their English paper at SPM This issue can be quite level. bothering as the quality of the students that the English language lecturers are getting is very poor nowadays. In polytechnic, students are grouped according to their courses such as, engineering or commerce students. basically, these students are well exposed in their content skill such as mechanical, accountancy, IT and such but, their proficiency in English is relatively differs from one another even though they are grouped in a same class. So the challenge is to cater to students with different proficiency.

Generally polytechnic students posses poor command of English except for some of them. In a typical English classroom in polytechnic, there will be three groups of students who posses different command of English language which categorised into can be poor. intermediate and good. So, with respect to all the different commands, lecturers have to struggle putting extra effort to narrow these gap between students. Thus. Enalish language lecturers always have problems when it comes to dealing with this kind of classroom in terms of preparing materials of teaching, conducting assessments and also maintaining the objective of using English language in the class as much as possible with the students and serve the students with different level of proficiency all together.

English language syllabus for polytechnic students has been improvised and improved over the time. Communicative Enalish Courses are offered to semester one, semester three and semester five students to enhance the communication skills. Still, the low proficiency level among majority of the students is believed to be related to the English language anxiety which communicative no anv English courses could help reducing this problem. More importantly, a number of studies has also revealed that language anxiety experienced by the learners originates from the leaner themselves (Normazidah Che Musa et. All, 2012). According to a study done by Noor Hashimah Abdul Aziz, 2007, majority English language learners are very nervous when speaking in English and they face great difficulty to express themselves in English. This situation also looks like a common scenario among polytechnic students where they are frequently found to be using their first language in the English language classes. This will have a great impact on the lecturers who painstakingly prepared the days' lesson but the students are not actively participating. It will create the sense of burden and tension for the English language lecturers. In a long run the lecturers will be emotionally discouraged by the the attitude of the students' towards learning English. Language learning is supposed to be a self motivated attitude and requires effort from the learners too. If the learners are not productive enough during the lesson, the entire learning process will be ruined.

As an educator of English language who are responsible to enhance the proficiency level of the

students, the lecturers have tackle some petty issues related to students such as oversee the students' attendance because class attendance is being a deciding point and treated as a top priority in eliminating or continuing the students' following academic session. Commonly for an English language lecturer to have around 250 students to monitor for a whole semester. So this issue of overseeing the student's attendance very challenging as it a tedious task for the lecturers because the number of documents that need to be prepared if the students failed to come to class for a specific amount of time. This issue sometimes will divert the English language lecturer's role when they have to pay attention to unrelated teaching concerns as the task such as mentioned above. The lecturers have to follow a few procedures in the attempt to monitor the students attendance in their respective classes. They have to contact the students' Academic Advisor and the parents at the same time. In many cases, the lecturers found no valid reason or justification of the students' absentee which can be very frustrating.

In contradictory, a student who posses good attendance record, but with very poor English language skills, are deemed "to bad to fail". The lecturers are also responsible to answer the failure of each students in his or her class. Among the English Language lecturers, they know that it is close to impossible to fail a student who has a good attendance record. So, this is basically insignificant for a language lecturer to deal with and can be troublesome in a daily routine. For an instance, if the English lecturer is about to fail a student, the lecturer to cross-check with has other departments if the students have the

same problem with them as well. The English language lecturer can only fail the students if he or she receives nodes from other departments. This so called understanding is perceived as a limitation to the English lecturer and again can be very frustrating to them. In this kind of situation, the English language lecturers often argues the credibility to the them.

Concerns Related To Classroom.

Teaching Communicative English courses when the objective of the course is mainly to enhance the students' oral communication skills can be very tough when a lecturer has a big number of students in one class. In а typical language polytechnic classroom in it is considered normal to have around 35-50 students. With this number of student, imagine how can a lecturer do his or her best to enhance the communication skills within the 15 weeks of teaching. The main objective most of the time can be almost distracting form the path.

Lecturers have to conduct communicative activities within 1 - 2hours duration of lesson and to make sure that all 35-50 students are fully involved and able to acquire the specific skills can be very challenging and problematic most of the time. And the students will suffer the consequences whereby their performance will not improve. To see the active engagement of students in class is hard with the amount of students that Lecturers have to monitor. According to Jerolyn Nordlund 2013, students who are actively engaged will behave appropriately in classroom and also tend to have higher attention level questions .ask more and act teacher's direction. according to

Often, with a large number of students in a communicative class, it is doubtful that the students can have a higher level of attention. Again, Jerolvn Nordlund 2013 did mention that a well organised classroom has discipline problems. less more cooperative students. happier teachers, parents and administrators. with regard to this point, it is challenging for the English lecturers to achieve the objective when the size of the class is larger. Indeed, it is challenging for the English lecturers to manage a big class.

Non-academic Tasks

Central to the discussion of students non – performance in Enalish language among the polytechnic students is the issue of the lecturers' workload. It is undeniable that experiential knowledge is equally important as lecturers' formal teacher - education background, yet this particular job inventory consumed most of the lecturer's time and occupied their personal space that led to undefined workloads. which is а cliché constraint experienced other by educators regardless of their institutions (Suhally Abdullah and Faizah Abd Majid, 2013). Though indirect management skills instill a different experiential knowledge to English lecturer, this will also hamper the particular lecturer's participation in classroom teaching. Acquiring English language takes a long and extensive duration for students to master it and that doesn't happen in a limited schedule. For the students to excel in their command of English Language, they should be guided and should be exposed to the use of the language concurrently. If the lecturer is being pressured with loads of work,

the teaching and learning process will be short- sighted. Many lecturers have reflected that it was not what they came into teaching for.

"I'm sure some of the paperwork we have to do could be done by, if we had a large enough admin. Team in school. Lots of the stuff we type up and put onto computers should be being done by secretaries. It's secretarial work. It's not teaching skills, it's not what we're trained to do. I think that would really help." (Female Deputy Head, 11 years' experience)

Source : A Report commissioned by the National Union of Teachers concerning the workloads in Primary Schools by Maurice Galton and John MacBeath with Charlotte Page and Susan Steward.

A list of non – academic tasks has been assigned to the English Language Unit lecturers in Malaysian Polytechnics. the The lecturers are closely involved with MQA audits where they are scrutinized for their filings and documentation. The paperwork load is an issue that is burdening many teachers. Lecturers use non-teaching paperwork time to do and administrative tasks although with meetings and running clubs the paperwork is often pushed to the extremities of the day. The process of scrutinizina filinas and documentations for MQA audits is a detailed task for lecturers as it has a heavy impact on the whole unit. Also English lecturers are overwhelmingly burdened with conducting numerous English activities to accommodate them in the institutes' academic calendar.
In Polytechnic, English Language unit is subjected to be a subordinate unit where the unit is involved with offering assists and supports to the main units where else needed. This responsibility adds weight on English lecturers' shoulders and limits their time in the office to focus on their own group of students. Some English lecturers are also involved in dual positions. That defines the lecturer is also involved in administrative jobs like being a staff in Students Affair Department or the Examination Unit. Apart from handling the classes, an immense time is allocated to contribute to these inter departmental work. The amount of time available for teaching each day does not allow for a broad and balanced curriculum. After office hours lecturers carried out administrative tasks such as ordering equipment, preparing resources for future lessons or running clubs and other extracurricular activities including coaching the institutes' various sports teams(Suhally Abdullah and Faizah Abd Majid, 2013). This further clarifies that the Enalish lecturers are mostlv unavailable to hold betterment classes for their students after the office hours due to the lecturers' hectic schedule. A mere 16 hours of teaching English during the office hours will not do a good justification to students, especially if the class is comprised of mixed ability students.

Improving the English Language acquisition among the weak students is not an easy task. They should be exposed to various kinds of exercises, drills and practices which will consume a large amount of time of both the lecturers as well as students. Delegating loads of nonacademic tasks to lecturers will not to any rationalize the initiative taken to enhance students English proficiency level. This issue has to taken seriously and to be tacked accordingly as not to disappoint the current English lecturers and the budding new lecturers.

Concerns related to professionalism

issue of inadequate An received knowledge is rising among the lecturers teaching English in The scenario Polytechnics. is associated with some of English lecturers in the Polytechnic system are araduates of non-TESL background. TESL is a Teaching English as a Second Language degree programme specialises in producing teachers teaching English. After their completion of their degree, they are placed in Polytechnics based on their application. Unlike TESL graduates who are trained in the field of teaching English, non TESL graduates will have a tougher time juggling to teach the students. These non - TESL graduates who are not familiarised with teaching methodologies will have a tough time managing an English classroom. They often lament that they could not understand certain teaching styles and to apply which method to suit their students in learning English This will cause Language. the lecturers to work harder to prepare for the lessons and to eventually deliver the lessons. Apart from this, there are this issue of lack of language courses or workshops provided for the English lecturers. Most of the courses offered are not related, laid off or not benefitting the English Language lecturers. Mostly the courses are taken up in regard of fulfilling the 10 days course for a year mandate.



Policy or Institutional Requirement or Practice

Apart from the fulfilling nonacademic tasks and other English Language teaching and learning related issues, English Language lecturers are also pressured with institutions policy, requirement and issues. The identified practice excerpts that centred on classroom related concerns and policy or institutional requirement or practice issues were concluded as the final source of participants' challenges in teaching English to their students(Suhally Abdullah and Faizah Abd Majid, 2013). Lecturers are frequently called to attend courses which are mostly not related to them and in any way can contribute to the welfare of Enalish the unit or for the improvement of English Language as whole. Examples of the а continuous professional courses they are Kursus attended Tatacara Alih. Module Pengurusan Aset language Design Course, OBE course and X-Compile using CIDOS Workshop(Suhally Abdullah and Faizah Abd Majid, 2013). The English Language lecturers are seeing no value in undergoing these types of courses as it is very time consuming and not benefitting them in regards to teaching and learning environment.

Communicative English syllabuses were introduced after receivina feedback from the industries that Polytechnic students are lack of communicative skills.(Graduate Tracers Report, 2012) Previously English for Specific Purpose(ESP) syllabuses were thought in Polytechnics. English Language Lecturers are mostly dissatisfied that the new syllabuses were introduce without the lecturers being exposed to the implementation

fully. The process and the procedures of implementing the Communicative English syllabuses were left in the care of the lecturers on the execution. A proper workshops and briefing should sessions have been standardise conducted to the implementation of the new syllabus and any forthcoming changes. This will deter the confusions among the lecturers on how to carry on certain assessments and evaluation procedures. The lack of information on the procedures will eventually give direct impact to the students as well as jeopardising the quality of the English Language.

Another issue which is substantial to the English lecturers to score is the preparation to apply for the grade promotion. Unlike school teachers who are eligible to be promoted according to time based scheme. Polytechnic lecturers have been shouldering a huge imposition fulfilling a great number of of academic and accomplishment tasks to get promoted. They will have to actively involved in publication and innovation activities to achieve their promotion. This adds a huge burden to English Language lecturers who are already busily occupying their limited time to the teaching and other non-academic challenges.

Conclusion

This article is intended to share the challenges and the obstacles a typical English Lecturer is going through in the daily process of teaching and learning activities in a Polytechnic. Five major challenges have been identified through this article. These are issues related to students, concerns related to classrooms, English Language

lecturers involvement in nonacademic tasks, lecturers concerns related to professionalism and an obliged to Institutional's requirement and practice.

The challenges mentioned have an immense impact on students' performances in respect to their English Language acquisition. This scenario has be tackled to immediately by relevant authorities to further produce students who are unable to meet industrial needs. This is especially when Polytechnic is an institution where it is responsible to outsource human capital, in this case students who are undergoing their studies in their respective fields.

English Language is not a difficult task not to be accomplished by Polytechnic students. It can be done with the right guidance and attention given by the lecturer. In fulfilling this constraint, lecturers too need to be given some loose freedom so that the lecturers could do the best in their means. Collaboration and cooperation from all sectors and alterations in the working condition for the English lecturers are needed to have an efficient teaching and learning conditions in Polytechnics. If not the challenges faced by the English lecturers in Polytechnics will remain unsolved.

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KAJIAN KEBERKESANAN PERISIAN PREZI TERHADAP KURSUS FUNDAMENTAL PROGRAMMING

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ABSTRAK

Kajian ini bertujuan untuk mengenalpasti keberkesanan perisian Prezi dalam pengajaran pembelaiaran dan pelaiar terhadap kursus Fundamental Programming. Seramai 26 orang pelajar semester 2, Diploma Keiuruteraan Elektronik (Komputer) Sesi Disember 2013 di Jabatan Kejuruteraan Elektrik, Politeknik Seberang Perai terlibat dalam kaiian ini. Kaiian ini merupakan kajian tinjauan. Data dikumpul melalui borang soal selidik dan keputusan penilaian berterusan. Borang soal selidik mengandungi 16 item untuk mengukur rekabentuk dan minat pelajar terhadap perisian Prezi ini. Manakala keputusan penilaian berterusan pelajar bagi kursus Fundamental Programming ini untuk mengukur digunakan pencapaian pelajar. Data-data yang dikumpul dianalisis secara deskriptif dengan menggunakan perisian SPSS. Statistik deskriptif melibatkan pengukuran min. Selain itu. frekuensi dan digunakan untuk peratusan mengukur pencapaian pelajar.

kajian menunjukkan Dapatan bahawa rekabentuk perisian Prezi untuk Kursus Fundamental Programming pada tahap sederhana (min keseluruhan =3.78). Selain itu, pelajar

mempunyai tahap minat yang tinggi (min keseluruhan = 3.81) terhadap perisian Prezi dalam Fundamental kursus Programming. Berdasarkan pencapaian penilaian berterusan kursus untuk Fundamental Programming Sesi Disember 2013, peratusan yang dicapai oleh 26 orang pelajar yang mencapai skor gred diantara A dan B adalah sebanyak 88%. Ini menunjukkan penerimaan pelaiar amat berkesan dalam pengajaran dan pembelajaran berasaskan perisian Prezi.

1.0 PENGENALAN

Perkembangan teknologi maklumat dan komunikasi telah banyak mempengaruhi budaya kehidupan masa kini, terutamanya dalam bidang Pengaplikasian pendidikan. teknologi ini dalam pengajaran dan pembelajaran memberikan satu aniakan baru dalam teknik pedagogi pendidik. Pengajaran dan pembelajaran berbantukan komputer telah menjadi suatu perkara penting dalam proses pengajaran dan pembelajaran. Penggunaannya yang secara menghasilkan terancang akan pembelajaran yang berkesan, aktif dan bermutu. Ismail Zain (2002)mengatakan bahawa media ialah cara dimana

informasi dapat disampaikan kepada pelaiar. Menurut Yusup Hashim (1997)pula, media merupakan alat yang dapat membantu pengaiar meningkatkan proses pengajaran dan menyediakan sumber untuk pembelaiaran pelajar. Jadi. peranan media ialah untuk memenuhi kedua-dua proses ini untuk meningkatkan proses komunikasi. menyediakan pelbagai kaedah atau teknik mengajar, meningkatkan motivasi pelajar dan melahirkan masyarakat yang bermaklumat serta berfikiran kritis dan tajam. Selain itu, penggunaan media perisian dalam proses pengajaran dan pembelajaran di dalam kelas merupakan salah satu alat bantu mengajar yang dapat membantu pensyarah dalam peningkatan prestasi pelajar. Rozinah (2005) bahawa menyatakan perisian multimedia memberi motivasi kepada pelajar dengan menjadikan pembelajaran lebih menarik apabila pelajar memahami apa yang dipelajari dalam konteks yang sebenar. Menurut Woolfolk (1998), minat dan usaha merupakan aspek dikatakan telah yang mempengaruhi kejayaan pembelajaran seseorang.

Perisian Prezi merupakan salah satu media pembelajaran yang menverupai seperti Power Point, tetapi mempuntai ciri-ciri yang lebih canggih dan menarik. Menurut Tarr (2009) dalam buku Mohamed Amin Embi (2011), Prezi mempunyai kelebihankelebihan seperti mudah untuk menggabungkan imej, bunyi dan video di dalam satu Selain persembahan. itu. persembahan melalui Prezi dibina

pada 'kanvas' yang membolehkan pegguna untuk meletakkan katakata, gambar, video dan objek lain untuk persembahan. Perisian Prezi amat mudah untuk digunakan.

2.0 PERNYATAAN MASALAH

dan pembelajaran Pengajaran berbantukan komputer telah menjadi suatu perkara penting dalam proses pengajaran dan pembelajaran. Atas kesedaran kepentingan pengajaran dan pembelajaran berbantukan komputer, BTP (Bahagian Teknologi Pendidikan) telah menetapkan objektif-objektif menjayakannya. dalam usaha Salah satu objektif BTP ialah menggalakkan pengajar menyampaikan pelajaran dengan cara kreatif dan inovatif melalui penggunaan pelbagai jenis media pendidikan. Oleh itu, pengkaji ingin mengkaji sejauh manakah keberkesanan perisian Prezi dalam pengajaran dan pembelajaran terhadap kursus Fundamental Programming.

3.0 OBJEKTIF KAJIAN

Objektif kajian ini adalah untuk mengenalpasti keberkesanan perisian Prezi terhadap kursus Fundamental Programming.

4.0 PERSOALAN KAJIAN

Berdasarkan objektif kajian, persoalan yang akan dijawab ialah:



i) Apakah mutu rekabentuk perisianPrezi terhadap kursusFundamental Programming?

- ii) Adakah perisian Prezi dapat meningkatkan minat pelajar terhadap kursus Fundamental Programming?
- iii) Apakah tahap pencapaian pelajar dengan menggunakan perisian Prezi terhadap kursus Fundamental Programming?

5.0 METODOLOGI KAJIAN

5.1 Reka Bentuk kajian

Kajian ini berbentuk tinjauan dengan menggunakan teknik soal selidik. Menurut Sarantakos (1993) dalam buku Lim Chona (2007). selidik Hin soal digunakan dengan meluas dalam penyelidikan, termasuklah penyelidikan pendidikan. Dalam kebanyakan penyelidikan, soal selidik adalah kaedah tunggal memungut data. Penggunaan soal selidik membabitkan kos yang rendah dan datanya juga senand dianalisis (Cohen, manion, & Morrison, 2000) dalam buku Lim Chong Hin (2007).

5.2 Sampel Kajian

Kajian ini dijalankan ke atas 26 responden daripada pelajar semester dua Diploma Kejuruteraan Elektronik (Komputer) di Jabatan Kejuruteraan Elektrik, Politeknik Seberang Perai yang mengambil kursus Fundamental pada Programming Sesi Disember 2013.

5.3 Instrumen Kajian

Instrumen yang digunakan dalam kajian ini adalah borang soal selidik berskala Likert dan keputusan penilaian berterusan. selidik yang Soal digunakan mengandungi 16 item, jaitu 8 item berkaitan dengan rekabentuk perisian Prezi dan 8 item lagi berkaitan dengan minat pelajar terhadap perisian Prezi dalam kursus Fundamental Programming. Sebanvak 26 keping borang soal selidik telah diedarkan untuk diisikan oleh responden. Borang yang telah diisikan oleh responden dikumpulkan untuk dianalisa.

Kaedah skor min digunakan untuk menganalisa data bagi setiap item dalam borang soal selidik. Menurut Noor Suraini (2000), skor min diterjemahkan dalam julat tertentu untuk menentukan tahap rendah, sederhana dan tinggi seperti Jadual 1 dibawah.

Jadual 1: Tafsiran Bagi Skor Min

Julat	Tahap
1.00 -	Rendah
2.40	
2.41 -	Sederhana
3.80	
3.81 -	Tinggi
5.00	

Selain itu, maklumat berkenaan pencapaian pelajar dalam Penilaian Berterusan Sesi Disember 2013 bagi kursus Fundamental Programming diambil kira sebagai instrument kajian.

Maklumat-maklumat yang diperolehi telah diproses melalui kaedah analisis dengan menggunakan perisian "*Statistical Package For Social Sciences*" (SPSS), iaitu kaedah statistik deskriptif dengan mengenalpasti min, frekuensi dan peratusan.

5.4 Kajian Rintis

Satu kajian rintis telah dijalankan kepada sampel terpilih mengenai rekabentuk dan minat pelajar terhadap perisian Prezi dalam kursus **Fundamental** Programming. Penyelidik telah memilih seramai 18 pelajar sebagai sampel kaiian rintis. Najib Menurut Mohd. Abdul Ghafar (2006), jumlah reponden seramai 15 - 20 orang telah untuk mencukupi analisis indeks kesahan luaran dan kebolehpercayaan soal selidik ...

Hasil daripada kajian rintis yang dijalankan didapati nilai Cronbach Alfa adalah 0.96. Menurut Lim Chong Hin (2007), nilai Cronbach Alfa >=0.90 adalah berada di tahap kebolehpercayaan yang amat baik. Ini menunjukkan item bagi soal selidik ini mempunyai tahap kebolehpercayaan yang sesuai digunakan tinggi dan dalam kajian ingin yang dijalankan.

6.0 DAPATAN KAJIAN

Daripada analisa yang dibuat, dapatan kajian adalah seperti berikut:

6.1 Penilaian Rekabentuk Perisian Prezi Terhadap Kursus Fundamental

Programming

	Item	Ν	Mean	Std. Deviation
1.	Persembahan Prezi menarik	26	3.8077	.40192
2.	Kombinasi warna memuaskan	26	3.6923	.47068
3.	Grafik memberi gambaran jelas	26	3.8462	.36795
4.	Saiz tulisan memudahkan saya untuk membaca	26	3.7308	.53349
5.	Nota ringkas dan padat	26	3.7692	.51441
6.	Susunan topik memudahkan saya untuk mengikutinya	26	3.769	.4297
7.	Cara persembahan topik-topik menarik	26	3.8462	.36795
8.	Bahasa yang digunakan mudah difahami	26	3.8077	.40192
	Jumlah	26	3.78	

Jadual 2 : Penilaian Responen Terhadap Rekabentuk Perisian Prezi

Jadual 2 menunjukkan hasil analisa ke atas reponden bagi setiap item berkenaan rekabentuk Prezi dalam kursus perisian Fundamental Programming. Skor min pada tahap tinggi diperoleh bagi item 1, 3, 7 dan 8. Item ke 3, grafik memberi gambaran jelas dan item ke 7, cara persembahan topik-topik menarik mencatatkan skor min yang tertinggi, iaitu 3.8462. Ini mungkin disebabkan perisian kerana Prezi membolehkan pengguna untuk zoom masuk dan keluar dari persembahan telah menarik pelajar. Selain itu. perhatian pembelajaran media yang canggih, kreatif berserta bantuan audio dan video dapat membantu dalam pengajaran dan pembelajaran. Skor min pada

tahap sederhana bagi item 2, 4, 5 dan 6. Skor min keseluruhan pula adalah 3.78, iaitu berada di tahap sederhana.

6.2 Penilaian Minat esponden Terhadap Perisian Prezi Dalam Kursus Fundamental Programming

	Item	Ν	Mean	Std. Deviation
1.	Prezi ini berjaya menarik minat	26	3.8846	.32581
2.	Prezi ini membantu pembelajaran	26	3.8462	.36795
3.	Prezi ini memperbaiki teknik pengajaran	26	3.7308	.53349
4.	Prezi ini berjaya menarik perhatian saya dalam kelas	26	3.7308	.60383
5.	Prezi ini memudahkan saya memahami sesuatu topik	26	3.7308	.45234
6.	Saya dapat menjawab soalan- soalan latihan	26	3.8077	.49147
7.	Video-video memudahkan pemahaman saya	26	3.8846	.32581
8.	Dengan adanya Prezi ini, saya lebih berminat belajar kursus "Fundamen tal Programming"	26	3.8462	.36795
	Jumlah	26	3.81	

Jadual 3 : Penilaian Minat Responden Terhadap Perisian Prezi Dalam Kursus Fundamental Programming

Jadual 3 menunjukkan hasil analisa untuk tahap minat reponden terhadap perisian Prezi dalam kursus Fundamental Programming. Skor min pada tahap tinggi diperoleh bagi item 1. 2. 6. 7 dan 8. Item 1. Prezi ini berjava menarik minat dan item 7, videovideo memudahkan pemahaman sava telah mendapat skor min yang tertinggi, iaitu 3.8846. Hasil ini menuniukkan bahawa perisian Prezi amat memberansangkan. Skor min pada tahap sederhana bagi item 3, 4 dan 5. Skor min keseluruhan pula adalah 3.81, iaitu berada di Dapatan tahap tinggi. ini menunjukkan bahawa pelaiar mempunyai minat yang sangat positif terhadap perisian Prezi dalam kursus Fundamental Programming. Walau bagaimanapun, pelbagai aktiviti pembelaiaran vang kreatif. inovasi dan menarik minat pelajar akan dipertingkatkan.

6.3 Penilaian Pencapaian Reponden Dengan Menggunakan Perisian Prezi Terhadap Kursus Fundamental Programming

Gred	Frekuensi	Peratus
A	2	7.69
A-	7	
		26.92
B+	11	42.31
В	5	19.23
B-	1	3.85
Jumlah	26	100

Jadual 4 : Penilaian Pencapaian Responden Terhadap Kursus Fundamental Programming

Jadual 4 menunjukkan pencapaian responden dalam kursus Fundamental Programming berdasarkan keputusan penilaian berterusan

sesi Disember 2013. Ini adalah berdasarkan kepada pencapaian responden dalam aktiviti kuiz. keria makmal, projek, ujian praktikal dan ujian teori. Daripada analisa tersebut didapati bahawa tiada pelajar gagal dalam kursus Fundamental Programming. Terdapat 2 orang pelajar mendapat skor A (7.69%) dan 7 orang pelaiar mendapat skor A-(26.92%)dalam kursus Fundamental Programming. Purata skor gred yang diperolehi oleh responden adalah di antara A- dan B. Ini jelas menunjukkan Keberkesanan Perisian Prezi dalam Kursus Fundamental Programming berada ditahap yang amat memuaskan.

7.0 KESIMPULAN

Berdasarkan dapatan kajian dan kajian persoalan jelas menunjukkan bahawa perisian Prezi yang dibangunkan untuk pengajaran proses dan pembelajaran dalam kursus Fundamental Programming amat berkesan dan banvak memberikan kesan positif kepada para pelajar Politeknik. Melalui ini, para pelajar dapat menguasai dan mengaitkan kefahaman dan pengetahuan yang sedia ada dengan pengetahuan baru dari industri multimedia.

Rekabentuk perisian Prezi dalam kursus Fundamental Programming telah mencapai skor yang tinggi. Media pembelajaran vang canggih, kreatif berserta bantuan audio dan video dapat membantu dalam pengajaran dan pembelajaran. Penerimaan pelajar di sini menunjukkan bahawa

keberkesanan perisian Prezi Fundamental Programming diterapkan ke dalam pengajaran dan pembelajaran amat membanggakan.

Selain itu, kajian ini juga mendapati pelajar bahawa mempunyai minat yang tinggi terhadap penggunaan perisian Prezi dalam proses pengajaran dan pembelajaran untuk kursus Fundamental Programming. Minat pelajar perlu dipupuk sepanjang proses pengajaran dan pembelajaran supaya pencapajan pelajar lebih memberangsang. Kesan dari minat yang positif mampu mendorong pelajar berfikiran kritis, bersikap positif meningkatkan dan atkif, kemahiran berinteraksi dan berkomunikasi.

Sebagai pengukuran, di dalam penilaian berterusan bagi sesi Disember 2013 untuk kursus Fundamental Programming, Program Kejuruteraan Elektronik (Komputer), peratusan vang dicapai oleh 26 orang pelajar yang mencapai skor gred diantara A - dan B adalah sebanyak 88%. Ini menunjukkan bahawa penerimaan pelajar amat baik dan berkesan dalam pembelajaran berasaskan perisian Prezi.

Secara umumnya, penerapan perisian Prezi dalam pengajaran dan pembelajaran perlu dipertingkatkan kepada kesemua sukatan pelajaran di Politeknik selaras dengan perkembangan teknologi yang begitu cepat berubah.

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KAJIAN KEPERLUAN TERHADAP PROGRAM BAHARU DIPLOMA KEJURUTERAAN PERISIAN DALAM KALANGAN PELAJAR SEKOLAH SEKITAR PULAU PINANG

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ABSTRAK

Kajian ini bertujuan bagi mengenalpasti keperluan terhadap program baharu Diploma Kejuruteraan Perisian dalam kalangan pelajar sekolah sekitar Pulau Pinang. Rekabentuk kajian ini ialah kajian tinjauan dengan menggunakan pendekatan kuantitatif. Data primer diperolehi melalui maklum balas para pelajar sekolah menengah dengan menggunakan instrumen soal selidik. Justifikasi untuk membangunkan program tersebut adalah berdasarkan daripada hasil dapatan kajian ini, untuk mengadakan potensi kolaborasi dengan pihak swasta, rekabentuk kurikulum vang mengikut keperluan industri. menggunakan kaedah Pengajaran dan Pembelaiaran (P&P) selari dengan perkembangan teknologi masa kini dan pemilihan lokasi yang bersesuaian dengan kawasan Implikasi pelaksanaan industri. harus diberi penekanan vang untuk menjayakan program ini adalah tenaga pengajar, infrastruktur, pasaran modal insan dan kebolehpasaran pelajar.

1.0 PENGENALAN

Pengajian di politeknik merupakan kesinambungan pendidikan di sekolah dalam usaha untuk memastikan para pelajar mempunyai pengetahuan vang seimbang, berkemahiran industri dan insaniah yang mencukupi serta bersikap positif agar dapat melahirkan modal insan yang dapat memberi sumbangan bermakna kepada pembangunan negara. Hala tuju Transformasi Politeknik mempunyai matlamat untuk membina upaya baharu politeknik bagi membangunkan sumber manusia negara untuk memenuhi keperluan Model Ekonomi Baharu (MBE) yang memberi penekanan kepada inovasi dan kreativiti. upava Seiring dengan Pelan Strategik Pengajian Tinggi Negara (PSPTN) dan transformasi pendidikan dan latihan negara, Transformasi Politeknik adalah untuk menghasilkan modal insan yang mempunyai mentaliti kelas pertama dan menepati kehendak pasaran. Justeru itu. adalah penting bagi memastikan kemahiran bersesuaian yang dengan pekerjaan supaya dapat memenuhi permintaan sumber tenaga kerja yang diperlukan oleh

negara. Berdasarkan artikel yang oleh dikeluarkan myMetro, Malavsia kini telah mengalami perubahan ekonomi yang ketara sedang mencapai dan tahap pembangunan positif di mana sudah berganjak negara dari sektor pertanian kepada perindustrian. kemudian berkembang lebih pesat kepada telekomunikasi sektor serta teknologi maklumat. Transformasi yang dilakukan kerajaan bakal mewujudkan lebih 3.3 juta peluang pekerjaan terutama dalam bidang teknologi maklumat. Maka sejajar perkembangan dengan industri teknologi maklumat dan bidang komunikasi (ICT), kejuruteraan perisian merupakan teknoloai penggerak pembangunan sosial yang mampu mewujudkan masyarakat bermaklumat dan berteknologi. Oleh yang demikian, adalah wajar untuk program pengajian yang berasaskan bidang ICT amnya dan bidang Kejuruteraan Perisian ditawarkan khususnya untuk pelajar mendalami teknologi maklumat. Secara tidak langsung, aspirasi dapat mendokong pengajian tinggi negara serta merupakan satu usaha yang dapat merealisasikan objektif Transformasi Politeknik yang antaranya mempelbagaikan dan penawaran program meluaskan minat yang mampu menarik pelajar ke politeknik. Bidang kejuruteraan perisian pada asasnya bertujuan untuk membangun, mengubah suai dan menyelenggara perisian supaya

sesuatu perisian itu menjadi lebih berkualiti, murah, mudah dibina dan memenuhi keperluan pengguna. Bidang ini telah berkembang daripada hasil beberapa faktor antaranya kesan pertumbuhan sistem perisian yang berskala besar dalam pelbagai keperluan ekonomi dan peningkatan akan tahap kepentingan dalam aplikasi keselamatan kritikal. Diploma Kejuruteraan Perisian adalah program yang dicadangkan oleh Jabatan Pengajian Politeknik (JPP) untuk ditawarkan kepada semua pelajar lepasan Sijil Pelaiaran Malavsia (SPM) dalam mencapai visi JPP untuk menjadi pembekal nombor satu modal insan inovatif melalui pendidikan dan latihan untuk tenaga kerja global menjelang 2015. Diploma Kejuruteraan Perisian adalah program sepenuh masa selama tiga tahun yang terdiri daripada semester enam keria kursus dengan satu semester penuh Para adalah latihan industri. pelajar akan dibekalkan dengan asas yang kukuh dalam memahami keperluan pengguna dan asas pembangunan sistem perisian untuk kerjaya dan ekonomi masa hadapan mereka. bagi setiap insititusi Namun, pendidikan tinggi, pelajar merupakan pelanggan kepada sesebuah institusi tersebut. Sesuatu program hanya dapat dilaksanakan sekiranya wujud pelanggan yang berminat untuk melanjutkan pengajian mereka. Oleh demikian, dapatan yang

kajian keperluan ini sangatlah berguna untuk mengenalpasti keperluan terhadap program baharu Diploma Kejuruteraan Perisian dalam kalangan bakal pelajar.

2.0 OBJEKTIF

Dalam kajian keperluan ini, penyelidik telah menentukan objektif-objektif tertentu dalam memastikan keberkesanan kajian di samping dapat memberi input kepada pihak politeknik iaitu:

- i. Mengetahui profil pelajar.
- ii. Mengetahui tahap kecenderungan minat pelajar terhadap bidang pengajian.
- iii. Mengetahui kesediaan pelajar untuk menyambung pengajian dalam program Diploma Kejuruteraan Perisian.

3.0 METODOLOGI KAJIAN

Reka bentuk kajian adalah kajian tinjauan dengan pendekatan kuantitatif vand berbentuk Menurut deskriptif. Wiersma (1995), kajian berbentuk deskriptif dapat memberi gambaran atau maklumat mengenai sesuatu keadaan pada suatu masa tertentu, di samping membantu membuat perancangan pada masa akan datang. Data primer diperolehi melalui maklum balas responden daripada beberapa buah sekolah menengah sekitar Pulau Pinang dengan instrumen menggunakan soal selidik. Penentuan populasi dan persampelan adalah seperti yang dicadangkan oleh Kreicie dan Morgan (1970). Pemilihan sampel bagi setiap kategori adalah berdasarkan kepada kemudahcapaian penyelidik ke atas responden. Ini memudahkan penyelidik untuk mengedar dan mengumpul soal selidik yang diberikan secara langsung kepada responden. Seramai 194 orang responden yang terdiri daripada pelajar Tingkatan Lima bagi sesi persekolahan tahun 2014 terlibat dalam kajian ini.

Penvelidik membina satu set soalan soal selidik vang melibatkan 10 soalan yang dikemukakan kepada responden untuk memberi maklum balas berhubung keperluan terhadap baharu Diploma program Kejuruteraan Perisian. Soal selidik ini dibahagikan kepada 2 Bahagian bahagian, iaitu А berkaitan profil pelajar dan Bahagian B berkaitan kesediaan menyambung pelajar untuk pengajian dalam program Diploma Keiuruteraan Perisian. Bahagian A mengandungi 5 soalan yang merangkumi soalan tentang jantina, jenis sekolah, aliran pengajian, ahli keluarga terdekat sedang vang atau pernah belajar di Politeknik dan minat pelajar untuk menyambung pelajaran ke Politeknik. Bahagian B juga mengandungi 5 soalan iaitu mengenai minat pembelajaran secara kaedah gabungan teori dan praktikal, minat dalam bidang Kejuruteraan Perisian, minat mengikut keutamaan tentang bidang pengkhususan, keperluan kepada dalam bidang pergetahuan Kejuruteraan Perisian untuk lebih berdaya saing di dalam kerjaya

dan keperluan kepada pengetahuan dalam pembangunan perisian.

4.0 ANALISIS DAPATAN KAJIAN

Analisis dapatan kajian dilakukan dengan menganalisis borang soal selidik yang dikumpulkan daripada responden. Instrumen kajian dianalisis menggunakan perisian *Statistical Package for Social Science (SPSS) 13.0 for Windows*. Dapatan kajian dibahagikan kepada 4 bahagian iaitu:

- i. Taburan responden frekuensi menaikut dan peratus bagi faktor jantina, ienis sekolah, aliran pengajian dan ahli keluarga terdekat yang sedang atau pernah belajar di Politeknik.
- ii. Taburan responden terhadap bidang pengajian mengikut frekuensi dan peratus bagi faktor minat pelajar untuk menyambung pelajaran ke Politeknik, minat pembelajaran secara kaedah dabundan teori dan praktikal minat dalam dan bidang Kejuruteraan Perisian.
- iii. Tafsiran Min bagi tahap kecenderungan minat pelajar terhadap bidang pengkhususan.

Taburan kesediaan responden pelajar untuk menyambung pengajian dalam program Diploma Kejuruteraan Perisian.

5.0 KEPUTUSAN

iv.

Jadual 5.1 menunjukkan taburan profil pelajar dengan jumlah keseluruhan responden pelajar seramai 194 orang.

Pemboleh Ubah		Keseluruhan (N= 194)		
		Frekuensi	Peratus (%)	
	Lelaki	102	53.0	
Jantina	Perempuan	92	47.0	
	Jumlah	194	100.0	
	Kebangsaan	150	77.0	
Jenis	Teknik/Vokasional	44	23.0	
Sekolah	Agama	0	0.0	
	Jumlah	194	100.0	
	Sains	56	29.0	
	Teknik/Vokasional	66	34.0	
Aliran	Sastera/Agama	28	14.0	
Pengajian	Perdagangan/ Perakaunan	44	23.0	
	Jumlah	194	100	
Ahli	Ya	43	22	
Keluarga Belajar di	Tidak	151	78	
Politeknik	Jumlah	194	100	

N= Bilangan Sampel

Jadual 5.1: Taburan Profil Pelajar

Jadual 5.2 dan Rajah 1 menunjukkan dapatan minat pelajar sekolah untuk menyambung pengajian di Politeknik dalam bidang Kejuruteraan Perisian. Sebanyak

77% pelajar berminat untuk menyambung pengajian di Politeknik dan 23% tidak berminat Manakala sebanyak 85.6% pelaiar berminat dengan pembelajaran secara kaedah gabungan teori dan praktikal dan 14.4% tidak berminat. Didapati 71.6% pelajar berminat dalam Kejuruteraan bidang Perisian manakala 28.4% memilih tidak.

	Keseluruh		an (N= 194)	
Pemboleh Ubah	Fre	kuensi	Perat	us (%)
	Ya	Tidak	Ya	Tidak
Berminat menyambung pengajian di Politeknik	150	45	77.0	23.0
Berminat dengan pembelajaran secara kaedah gabungan teori dan praktikal	166	28	85.6	14.4
Berminat dalam bidang Kejuruteraan Perisian	139	55	71.6	28.4
N= Bilangan Sampel				

Jadual 5.2: Taburan Minat Pelajar Terhadap Bidang Pengajian



Rajah 1: Minat Pelajar Terhadap Bidang Pengajian

Kajian ini juga melihat kepada minat pelajar dalam menentukan keutamaan bidang pengkhususan berdasarkan **Jadual 5.3**. Tafsiran Min Bagi Tahap Kecenderungan Min di mana ia telah diubahsuai daripada Wiersma (1995).

Skor Min	Tahap Penilaian
1.00 hingga 2.40	Rendah
2.41 hingga 3.80	Sederhana
3.81 hingga 5.00	Tinggi

Jadual 5.3: Tafsiran Min Bagi Tahap Kecenderungan (Wiersma, 1995)

Jadual 5.4 menunjukkan tahap kecenderungan minat pelajar terhadap bidang pengkhususan mengikut Min seperti yang telah ditakrifkan berdasarkan Jadual 5.3.

		Min	Tahap Penilaian
Kejurutera	aan Perisian	3.85	Tinggi
Teknolog (Pengatu	Maklumat caraan)	2.38	Rendah
Teknolog (Rangkaia	Maklumat an)	2.43	Sederhana
Teknolog (Teknolog	Maklumat ji Permainan)	2.47	Sederhana

Jadual 5.4 Analisa Data Mengikut Min Bagi Tahap Kecenderungan Minat Pelajar

Terhadap Bidang Pengkhususan

daripada dapatan yang Hasil diperolehi tentang kecenderungan minat pelajar terhadap bidana pengkhususan mengikut keutamaan masing-masing di didapati mana bidang Perisian menjadi Keiuruteraan pilihan pertama para respondan di mana ia mencatatkan Min sebanyak 3.85 yang berada pada julat tahap penilaian yang tinggi. Seterusnya diikuti bidang pengkhususan Teknologi Maklumat (Rangkaian) serta bidang Teknologi Maklumat Permainan) (Teknologi yang berada pada julat sederhana. Kedua-dua bidang ini memperoleh Min masing-masing iaitu sebanyak 2.43 dan 2.47. Manakala Min untuk bidang Maklumat Teknologi (Pengaturcaraan) adalah sebanyak 2.38 iaitu berada pada julat yang rendah.

Jadual 5.5 dan Rajah 2 menunjukkan dapatan kesediaan responden pelajar untuk menyambung pengajian dalam program Diploma Kejuruteraan Perisian secara jelas. Daripada jadual tersebut didapati 77.8% pelajar memerlukan pergetahuan Keiuruteraan dalam bidang Perisian untuk lebih berdaya saing di dalam kerjaya dan 22.2% menyatakan tidak perlu. Justeru itu, kajian mengenai keperluan pengetahuan dalam pembangunan perisian dari fasa awal perancangan projek dan analisis keperluan sehingga penyenggaraan perisian selepas pelaksanaannya turut dikaji di mana sebanyak 74.7%

menyatakan perlu dan 25.3% adalah tidak perlu.

Di samping itu, hasil dari analisa dapatan didapati responden pelajar lebih perlu maklumat tentang Diploma program Kejuruteraan Perisian iaitu seramai 66% dan 34% lagi pernah mendapatkan maklumat. Keinginan pelajar untuk melanjutkan pelajaran dalam bidang Kejuruteraan Perisian SPM/ selepas SPMV adalah sebanyak 56% dan 43% menyatakan tidak.

Pengetahuan responden tentang peluang pekerjaan selepas tamat pengajian dalam bidang Kejuruteraan Perisian turut dikaji sebanvak mana 39.7% di mengetahui akan bidang ini dan 60.3% didapati tidak mengetahuinva, manakala 64.4% pelajar adalah berminat dengan prospek kerjaya dalam bidang Kejuruteraan Perisian sama ada dari sektor swasta atau agensi kerajaan dan 35.6% menyatakan tidak berminat. Selain itu, didapati pelaiar sebanvak 66% ingin menceburkan diri dalam pembangunan dan perisian. pengubahsuaian pengurusan projek berkaitan perisian dan menjamin kualiti perisian manakala 34% lagi menyatakan tidak.

	Keseluruhan (N= 194)			
Pemboleh Ubah	Frekuensi		Peratus (%)	
	Ya	Tidak	Ya	Tidak
Keperluan kepada pergetahuan dalam bidang Kejuruteraan Perisian untuk lebih berdaya saing di dalam kerjaya	151	43	77.8	22.2

Keperluan pengetahuan dalam pembangunan perisian dari fasa awal perancangan projek dan analisis keperluan sehingga penyenggaraan perisian selepas pelaksanaannya	145	49	74.7	25.3
Pernah mendapat maklumat berkaitan bidang Kejuruteraan Perisian	66	128	34	66
Ingin melanjutkan pelajaran selepas tamat SPM/SPMV dalam bidang Kejuruteraan Perisian	110	85	56	43
Mengetahui peluang pekerjaan selepas tamat pengajian dalam bidang Kejuruteraan Perisian	77	117	39.7	60.3
Berminat dengan prospek kerjaya dalam bidang	125	69	64.4	35.6
Ingin menceburkan diri dalam pembangunan dan pengubahsuaian perisian, pengurusan projek berkaitan perisian dan menjamin kualiti perisian	128	66	66	34
N= Bilangan Sampel				

Jadual 5.5: Taburan Kesediaan Pelajar Untuk Menyambung Pengajian Dalam Program Diploma Kejuruteraan Perisian



Rajah 2: Taburan Kesediaan Pelajar Untuk Menyambung Pengajian Dalam Program Diploma Kejuruteraan Perisian

6.0 JUSTIFIKASI

Program Diploma Kejuruteraan Perisian adalah relevan untuk diwujudkan berdasarkan hasil dapatan data primer yang dikumpul dari responden. Dapatan kaiian menuniukkan bidang Kejuruteraan Perisian diperlukan adalah dalam kalangan bakal pelajar mengikut arus teknologi semasa di samping menyahut hasrat kerajaan untuk meningkatkan ekonomi dalam rantaian nilai untuk menjadi negara berpendapatan tinggi.

6.1 Mengarusperdanakan dan memperluas akses kepada pendidikan teknikal dan latihan vokasional (TVET)

Melalui penawaran program Diploma Kejuruteraan Perisian. ia dapat mengarusperdanakan dan memperluas akses kepada TVET vang berkualiti. Politeknik merupakan sebuah institusi vang menetapkan dalam bahawa enrolmen pendidikan berasaskan TVET adalah perlu ditambah dan kualiti latihan secara keseluruhan dipertingkatkan untuk meningkatkan dengan tahap kemahiran ketara tenaga kerja. Penetapan ini bertujuan adalah untuk menambah bekalan modal berkemahiran di insan Malaysia melalui penyediaan pendidikan berkualiti kepada pelajar yang mempunyai kecenderungan dan keupayaan dalam bidang teknikal dan vokasional yang dapat diguna segera dalam pasaran pekerjaan.

Raiah 3 menuniukkan pelbagai komponen dalam TVET serta pilihan laluan daripada TVET kepada akademik dan peluang pekerjaan yang di antaranya politeknik. ialah Pelajar lepasan politeknik juga setanding dengan institusi lain vang mempunyai banyak peluang untuk menyambung pelajaran, seterusnya boleh memilih untuk terus bekerja atau menyambung pelajaran ke peringkat yang tertinggi.



Rajah 3: Dwi-laluan ke arah mendapat pekerjaan

6.2 Industri ICT di Malaysia

Bidang kejuruteraan perisian menduduki tangga teratas set kemahiran vand amat diperlukan oleh industri ICT di berdasarkan Malaysia, tinjauan Knowledge Worker Exchange Sdn. Bhd. (KWX) terhadap industri ICT tempatan dan keperluan sumber manusia pada tahun depan. Bilangan itu amat kritikal kerana keperluan syarikat ICT antarabangsa dan tempatan terutamanya svarikat memperoleh yang status Koridor Rava Multimedia (MSC). Pada masa yang sama prospek kerjaya dalam bidang ini juga amat diperlukan bagi graduan yang mempunyai kemahiran tinggi dalam bahasa pengaturcaraan Visual Basic, C++, Java/J2EE, Active Server, PHP dan Perl adalah amat diperlukan.

Pengarah Urusan KWX, Ungku Harun Al Rashid

Ahmad berkata, syarikat ICT menghadapi cabaran utama iaitu mencari calon sesuai dalam bidang perisian yang berpengalaman luas. Kebanyakkan syarikat ICT terpaksa mendapatkan tenaga kerja jurutera perisian berpengalaman dari India dan juga United Kingdom. Selain itu, bagi sektor pangkalan dan perdagangan data elektronik (e-dagang), industri memerlukan mereka vang mahir dalam bidang SQL Server 2000. Microsoft Access, MySQL, Oracle 9i. XML, MS.Net, Notes dan Domino. Semua ini adalah aplikasi pangkalan data yang dimanfaatkan oleh majoriti svarikat ICT Malavsia dan mereka memerlukan tenaga keria dalam bidang Unaku berkenaan. Harun berkata, berdasarkan tinjauan dilakukan vang sumber manusia yang berkemahiran dalam bidang jaminan mutu perisian, analisis orientasi objek, pengurusan projek dan keiuruteraan semula perniagaan sukar amat diperoleh. Oleh sebab itulah, tenaga keria dalam industri Teknologi Maklumat haruslah dilatih dan diberi pendedahan agar profesion tersebut tidak hanya dimonopoli oleh negara pihak luar.

6.3 Peluang Pekerjaan

Bakal pelajar lepasan Diploma Kejuruteraan Perisian mempunyai peluang kerjaya yang meluas dalam bidang ICT di mana *bidang ini*

berpotensi besar dalam pemasaran bakal graduan. Mengikut laporan dari JobStreet.com pasaran kerja dalam industri ICT. khususnya perkomputeran dan pembangunan sistem masih lagi mendapat kedudukan 3 teratas selepas pembuatan industri dan elektronik. Ini menuniukkan bahawa peratus popular kerjava graduan ICT dan Sains Komputer masih di tahap membanggakan. Menurut laporan itu juga, industri pembuatan dan elektronik juga memerlukan kepakaran dari bidang ICT atau komputer. Fakta ini dapat dibanggakan dan seterusnya menjadi pemangkin dan pembakar semandat kepada graduan bidang ICT dan Sains Komputer. Terkini dalam akhbar portal US.NEWS, kerjava sebagai jurutera perisian, juru analisa sistem dan pembangun laman web adalah senarai keriava paling menarik dalam tahun 2014.

7.0 KESIMPULAN

Program Diploma Kejuruteraan waiar Perisian adalah untuk ditawarkan oleh politeknik berdasarkan hasil dapatan yang menunjukkan majoriti bahawa responden berminat untuk menvambung pengajian di politeknik dan mengikuti program. Kajian juga mendapati keutamaan bidang pengkhususan juga diberikan oleh responden kepada Kejuruteraan Perisian berbanding pengkhususan yang lain di mana tahap penilaian yang diperolehi

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berada pada julat yang tinggi. Di samping itu, kesediaan bakal pelajar untuk menyambung pengajian dalam program Diploma Keiuruteraan Perisian mencatatkan keputusan juga yang tinggi. Keseluruhan responden juga menyatakan bahawa mereka memerlukan pengetahuan dan maklumat untuk memenuhi prospek kerjaya dalam Kejuruteraan Perisian bidang mengikut pasaran semasa yang mana permintaan dalam industri ICT amat tinggi terutama ke arah mencapai wawasan negara maju pada 2020. Menurut tahun kenyataan dikeluarkan vang Singapore Exhibition Services (SES), penanda aras Indeks Kesediaan Perangkaian (NRI) Forum Ekonomi 2012 Dunia menyaksikan (WEF) yang Malaysia tersenarai di tangga ke-29 daripada 142 negara dunia kesediaannya menunjukkan dalam bidang ICT. Oleh yang demikian, dengan penawaran program Diploma Kejuruteraan Perisian dilihat bakal meniadi menjadikan pencetus dalam politeknik sebagai salah sebuah institusi dapat yang memperkembangkan penyelidikan dan inovasi dalam ICT bidang seterusnya melahirkan modal insan berkualiti. Hal ini secara tidak langsung dapat memenuhi sasaran kerajaan yang telah membuat pelaburan dalam pendidikan dan latihan untuk memastikan lebih ramai rakyat Malaysia berupaya memenuhi 3.3 untuk juta pekerjaan baru yang memerlukan kelayakan diploma atau vokasional. Sehubungan dengan matlamat kerajaan itu. yang menyasarkan Malaysia untuk menjadi sebuah negara

berpendapatan tinggi yang inklusif dan mampan menjelang 2020 dapat dicapai.

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KAJIAN TAHAP SOSIAL PELAJAR BAHARU JABATAN TEKNOLOGI MAKLUMAT & KOMUNIKASI SESI JUN 2013, POLITEKNIK SEBERANG PERAI : SATU TINJAUAN

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ABSTRAK

Penyelidikan ini mengkaji tentang gejala sosial tahap dalam kalangan pelajar baharu Jabatan Teknologi Maklumat & Komunikasi (JTMK). Politeknik Seberang Perai (PSP). Kajian ini merupakan satu kajian kes deskriptif. berbentuk tinjauan Subjek kajian terdiri daripada 85 orang pelajar Semester 1 kemasukan Sesi Jun 2013 di Data JTMK. dikumpul menggunakan borang soal selidik yang diedarkan kepada para pelajar semasa Minggu Suai Kenal (MSK) vang telah dilaksanakan. Data yang diperolehi dianalisis menggunakan statistik deskriptif dan kualitatif Hasil kaiian menunjukkan pelbagai ienis gejala sosial yang sememangnya berlaku dalam kalangan pelajar pada masa kini. Hal ini bukan disebabkan oleh masalah sikap pelajar itu sendiri sahaja malah belakang keluarga juga latar merupakan faktor penyumbang gejala sosial ini berlaku. Tindakan susulan akan diambil

berdasarkan dapatan penyelidikan di mana pelajar yang dikesan bermasalah akan dirujuk Unit Psikoloai dan kepada Kerjaya PSP dan Penasihat Akademik (PA) juga adalah dipertanggungjawabkan untuk memantau perkembangan sahsiah pelajar dari semasa ke semasa. Hasil daripada kajian ini membantu iuga dapat para pensyarah dan pihak pengurusan PSP untuk merancang strategi pendekatan atau seterusnva dengan mengambil tindakan susulan yang sesuai untuk membendung masalah ini.

Kata kunci: tahap gejala sosial

1.0 PENGENALAN

Setiap kita mendengar hari, sahaja berita-berita vang berkaitan dengan gejala sosial. Kebiasaanya masalah ini melibatkan pelajar-pelajar sekolah ataupun remaja-remaja vang berumur dibawah 21 tahun. Gejala sosial dalam kalangan pelajar ini boleh disama ertikan dengan salah laku pelajar,

keruntuhan akhlak dan sebagainva. Masalah ini semakin hari, semakin meruncing dan membimbangkan. Oleh itu, dalam institusi pendidikan kehidupan sosial memainkan peranan penting dalam melahirkan anak muda yang mampu menuju hala tuju dan membangunkan sesebuah negara maju di samping dapat memberi kejavaan dan kecemerlangan dalam pendidikan di semua peringkat. Di sini peranan institusi pendidikan sangat penting bukan sahaja dalam memberi pendidikan malah memberi pendedahan yang kepada pelajar dari berguna semua aspek termasuklah dari segi kehidupan sosial pelajar dan sebagainva.

2.0 PERNYATAAN MASALAH

Selaras dengan misi PSP yang telah ditetapkan iaitu untuk menghasilkan modal insan cemerlang bagi memacu ekonomi negara selaras pelan transformasi politeknik. pengkaji mengambil untuk melaksanakan inisiatif kajian tentang tahap gejala sosial dalam kalangan pelajar baharu JTMK, PSP sebagai usaha untuk pembentukan modal insan berkualiti yang bersahsiah tinggi. Berdasarkan Abdul Rahman Ahmad (2006), antara salah satu aspek yang mencirikan modal insan adalah di mana modal insan dipengaruhi oleh aspek luaran iaitu persekitaran dan la ikatan sosial. memainkan pentina dalam peranan menentukan tahap modal insan dimiliki oleh seseorang yang

individu. Pengkaji bercadang untuk mengkaji sejauh mana tahap gejala sosial pelajar yang baharu mendaftar di politeknik dengan mengambil kira dari aspek luaran. Gejala ini sekiranya tidak dibendung akan sistem mempengaruhi pengurusan di politeknik selain mencemarkan nama baik politeknik di mata masyarakat. Masalah ini berlaku mungkin dipengaruhi oleh tiga faktor utama iaitu diri sendiri, keluarga dan persekitaran. Oleh itu, terdapat tiga objektif kajian dibentuk untuk mengenalpasti seiauh mana tahap gejala sosial yang berlaku dalam kalangan pelajar politeknik.

3.0 OBJEKTIF KAJIAN

- 1. Mengetahui profil pelajar.
- 2. Mengenalpasti jenis-jenis gejala sosial yang berlaku dalam kalangan pelajar.
- Mengenal pasti faktorfaktor kecenderungan pelajar terhadap gejala sosial.

4.0 Skop Kajian

Kajian ini hanya dijalankan di PSP yang tertumpu kepada pelajar baharu JTMK PSP kemasukan sesi Jun 2013. Hasil daripada kaiian ini hanva mewakili pelajar baharu JTMK, PSP sahaja dan tidak menggambarkan keseluruhan pelajar politeknik yang terdapat di Malaysia.

5.0 METODOLOGI

5.1 Populasi Dan Sampel Kajian

Populasi bagi kajian ini ialah 148 orang pelajar baharu semester satu JTMK, sesi Jun 2013 PSP Sampel ialah sejumlah individu diambil bagi mewakili yang populasi. Sampel dipilih secara rawak menggunakan persampelan rawak mudah memilih sampel dari populasi dari senarai yang banyak. Setiap orang mempunyai peluang untuk dipilih (Mohd Najib Ghafar, 2004). Saiz sampel pula adalah orang sebanyak 85 vang ditentukan mengikut saiz sampel mengunakan dengan kaedah Table Krejcie dan Morgan (1970).

5.2 Instrumen Kajian

Penyelidik membina satu set soalan soal selidik vang melibatkan 35 soalan vang dikemukakan kepada responden untuk memberi maklum balas berhubung tahap gejala sosial dalam kalangan pelajar baharu JTMK, PSP. Soalan soal selidik terbahagi kepada tiga bahagian iaitu A, B dan C. Bahagian A mengandungi item-item demografi seperti program, iantina, etnik, umur, kediaman pendapatan pelajar, keluarga, kelayakan akademik bapa, kelayakan akademik ibu dan status ibu. Bahagian B pula mengandungi 12 soalan untuk mengenalpasti jenis-jenis gejala sosial yang biasa pelajar lakukan. Bahagian C pula mengandungi 12 soalan mengenai faktor-faktor kecenderungan pelajar terhadap

gejala sosial. Responden diminta menyatakan tahap persetujuan berdasarkan empat peringkat yang telah dinyatakan dalam Skala Likert. Penggunaan soal selidik berasaskan Skala Likert dipilih kerana Skala Likert mempunyai kebolehpercayaan dan kesahihan yang tinggi.

Jadual 1 : Skala Likert

Nilai Skor	Skala
1	TIDAK PERNAH
I	(0 kali)
C	KADANG-KADANG
Z	(1-2 kali)
2	KERAP
3	(3-4 kali)
1	SANGAT KERAP
4	(lebih 5 kali)

Melalui analisis secara deskriptif, data-data telah dipersembahkan dalam bentuk skor min dan Pengkaji peratusan. telah menggunakan perisian Statistical Social Package for Science (SPSS) 13.0 for Windows untuk menganalisis segala data deskriptif yang telah diperolehi. Bagi data maklumat dan latar belakang responden. data deskriptif dihuraikan secara dengan menggunakan kaedah kekerapan dan peratusan. Manakala bagi aspek jenis gejala dan faktor-faktor yang sosial mempengaruhi, data dianalisis berdasarkan skor min dan ukuran tahap. Skor min yang diperolehi daripada borang soal selidik akan merujuk kepada tahap yang telah dikodkan seperti tafsiran min dalam Jadual 2 daripada sumber Wiersma, 1995.

Nama Program

Jadual 2: Tafsiran min

Skor Min	Ukuran Tahap
3.81 hingga 5.00	Tinggi
2.41 hingga 3.80	Sederhana
1.00 hingga 2.40	Rendah

6.0 DAPATAN KAJIAN

6.1 Bahagian A - Maklumat dan Latar Belakang Pelajar

6.1.1 Nama Program

Berdasarkan analisis kajian yang dibuat seramai 85 orang responden dari JTMK, PSP telah menjawab borang soal selidik vang diedarkan. Program Diploma Teknologi Maklumat (Pengaturcaraan) adalah seramai 45 orang iaitu bersamaan dengan 53% manakala Program Diploma Teknologi Maklumat (Rangkaian) adalah seramai 40 orang yang bersamaan dengan 47%. Pengkaji mengkhususkan JTMK program di untuk menveluruh pemantauan di peringkat jabatan. Rujuk Jadual 3.

Jadual 3 : Bilangan Pelajar Mengikut Program

NAMA PF	JUMLAH	
DIP	DNS	PELAJAR
45	40	85

6.1.2 Jantina

Hasil kajian yang telah dianalisis, pengkaji mendapati pelajar perempuan iaitu seramai 50 orang (59%) dan 35 orang (41%) pelajar lelaki. Pengkaji memasukkan item ini bertujuan untuk mengetahui respon pelajar lelaki dan perempuan mengenai masalah gejala sosial. Selain itu jantina mempengaruhi iuga sesuatu keputusan dalam kajian agar maklumat diperolehi tepat dan seimbang. Rujuk jadual 4.

Jadual 4 : Bilangan Pelajar Mengikut Jantina

JA	JUMLAH	
LELAKI	PEREMPUAN	PELAJAR
35	50	85

Rajah 1 : Peratusan Mengikut Program



6.1.3 Etnik

Daripada dapatan kajian yang telah dijalankan, etnik pelajar juga dianalisis. dalam kajian ini. Maioriti responden terdiri daripada etnik Melayu seramai 69 orang (81%), 15 orang daripada etnik India (18%) dan 1 orang daripada etnik Cina (1%). Pengkaji berpendapat etnik juga mempengaruhi jenis gejala sosial vang berlaku dalam kalangan pelajar. Rujuk Jadual 5.

Jadual 5 : Bilangan Pelajar Mengikut Etnik



Rajah 3 : Peratusan Mengikut Etnik



6.1.4 Umur

Analisis terhadap faktor umur juga diambil kira yang mana responden berumur 18 hingga 20 tahun adalah seramai 84 orang (99%) dan hanya seorang sahaja yang berumur 21 tahun ke atas (1%). Dapatan kajian menunjukkan responden terdiri daripada pelajar lepasan SPM yang baru menamatkan zaman persekolahan. Rujuk jadual 6.

Jadual 6 : Bilangan Pelajar Mengikut Umur

U		
18 - 20		
Tahun	Atas	FLLAJAN
84	1	85

Rajah 4 : Peratusan Mengikut Umur



6.1.5 Kediaman Pelajar

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Berdasarkan dapatan kajian yang telah dijalankan, kediaman pelajar di bandar turut mempengaruhi dalam kajian ini. Kebanyakan responden tinggal di bandar sebanyak 57 orang (67%) responden berbanding luar bandar sebanyak 28 orang (33%) responden. Pengkaji berpendapat kediaman pelajar di bandar juga merupakan salah satu penyebab pelajar lebih cenderung dalam aktiviti gejala sosial. Rujuk Jadual 7.

Jadual 7: Bilangan Pelajar Mengikut Kediaman

KEDIAMAN		
BANDAR	LUAR BANDAR	PELAJAR
57	28	85

Rajah 5 : Peratusan Mengikut Kediaman Pelajar



6.1.6 Pendapatan Keluarga

Kajian seterusnya untuk melihat taburan responden mengikut pendapatan keluarga. Pelajar yang mempunyai keluarga berpendapatan rendah adalah seramai 18 orang (21%) iaitu dari RM 999 dan ke bawah. Kebanyakan responden datang dari keluarga vand berpendapatan sederhana di mana seramai 25 orang (30%) berpendapatan RM 1000 hingga RM 1999, manakala keluarga vang berpendapatan RM 2000 hingga RM 2999 iaitu seramai 19 orang (22%) dan juga seramai 12 orang (14%) mempunyai RM 3000 hingga RM 3999 pendapatan keluarga. Minoriti responden mempunyai keluarga yang berpendapatan melebihi RM 4000 hingga RM 4999 iaitu orang seramai 4 (5%) pendapatan keluarga. Seterusnya, 7 orang (8%) menyatakan pendapatan keluarga sebanyak RM 5000 dan atas. Hasil analisis ke ini berguna untuk melihat kemampuan keluarga responden dari segi kewangan. Rujuk Jadual 8.

Jadual 8: Bilangan Pelajar Mengikut Pendapatan Keluarga

PENDAPATAN KELUARGA						JUMLAH
RM999 dan ke bawah	RM1000 - 1999	RM2000- 2999	RM300 0- 3999	RM400 0- 4999	RM500 0 dan ke atas	PELAJA R
18	25	19	12	4	7	85

Rajah 6 : Peratusan Mengikut Pendapatan Keluarga



6.1.7 Kelayakan Akademik Bapa

Selain itu, kajian juga dibuat untuk melihat taburan responden berdasarkan kelayakan akademik bapa. Hasil kajian mendapati, majoriti responden mempunyai bapa yang mempunyai tahap kelayakan akademik tertinggi sehingga Sijil Pelajaran Malaysia (SPM) iaitu seramai 55 orang (65%) responden. Diikuti tahap akademik bapa sehingga sijil dan Sijil Tinggi Pelajaran Malaysia (STPM) masing-masing seramai 12 orang (14%) responden dan 6 orang (7%) responden. Manakala kelayakan di peringkat diploma adalah seramai 2 orang (2%). Di peringkat universiti pula, tahap ijazah sarjana muda seramai 4 orand (5%). Tahap iiazah seramai kedoktoran adalah 1 (1%) responden. orang Seterusnya, bagi responden yang mempunyai bapa yang tiada kelulusan akademik iaitu seramai 5 orang (6%) responden. Bagi kelayakan di peringkat ijazah sariana. tiada hasil vang Hasil direkodkan. analisis ini

berguna untuk melihat tahap kelayakan akademik bapa yang juga menjadi faktor kepada gejala sosial pelajar. Rujuk Jadual 9.

Jadual 9: Bilangan Pelajar Mengikut Kelayakan Akademik Bapa

	KELAYAKAN AKADEMIK BAPA								
s	PM	STP M	SIJIL		IJAZAH SARJAN A MUDA	IJAZAH SARJAN A	IJAZAH KEDOKTORA N	TIADA ELULUSAN AKADEMIK	JUMLAH PELAJAR
	5 5	6	12	2	4	0	1	5	85

Rajah 7 : Peratusan Mengikut Kelayakan Akademik Bapa



6.1.8 Kelayakan Akademik Ibu

Kajian juga dibuat untuk melihat taburan responden berdasarkan kelayakan akademik ibu. Hasil kajian mendapati, majoriti responden mempunyai ibu yang tahap mempunyai kelayakan akademik tertinggi sehingga Sijil Pelajaran Malaysia (SPM) iaitu seramai 65 orang (76%) Diikuti tahap responden. akademik ibu sehingga sijil dan Sijil Tinggi Pelajaran Malaysia

(STPM) masing-masing seramai 6 orang (7%) responden dan 5 orang (6%) responden. Manakala kelayakan di peringkat diploma adalah seramai 2 orang (2%). Di peringkat universiti pula, tahap ijazah sarjana muda seramai 3 orang (4%). Seterusnya, bagi responden yang mempunyai bapa vang tiada kelulusan akademik iaitu seramai 4 orang (6%) responden. Bagi kelayakan di peringkat ijazah sarjana dan ijazah kedoktoran, tiada hasil vang direkodkan. Hasil analisis ini berguna untuk melihat tahap kelayakan akademik ibu yang juga menjadi faktor kepada gejala sosial pelajar. Rujuk jadual 10.

Jadual 10: Bilangan Pelajar Mengikut Kelayakan Akademik Ibu

KELAYAKAN AKADEMIK IBU								
SPM	STP M	SIJI L		IJAZAH SARJAN A MUDA	IJAZAH SARJAN A	UAZAH KEDOKTORA N	TIADA KELULUSA N AKADEMIK	JUMLAH PELAJAR
6 5	5	6	2	3	0	0	4	85

Rajah 8 : Peratusan Mengikut Kelayakan Akademik Ibu



6.1.9 Status Ibubapa

Pengkaji juga meminta responden menyatakan status hubungan ibu bapa mereka. Mengikut hasil kajian, didapati majoriti seramai 76 orang (89%) responden yang menyatakan ibu bapa mereka masih berkahwin dan tinggal bersama. Diikuti seramai 6 orang (7%) responden menyatakan ibu bapa mereka bercerai mati dan seramai 3 orang (4%) responden menyatakan ibu bapa mereka telah bercerai hidup. Ibu bapa responden yang masih berkahwin tetapi tinggal berasingan, tiada hasil yang direkodkan. Dapatan kajian ini mendapati komunikasi yang baik antara ibu bapa dan menyebabkan remaja akan hubungan keluarga semakin rapat, wujud kasih sayang dan proses penyelesaian masalah akan berlaku dengan mudah.Ini bermakna hubungan ibu bapa terutama sekali dari segi komunikasi adalah sangat penting memberi kesejahteraan dalam dan kebahagiaan didalam sesebuah institusi kekeluargaan.Ini boleh mengurangkan gejala social yang berlaku dalam kalangan pelajar. Rujuk jadual 11.

Jadual 11: Bilangan Pelajar Mengikut Status Ibubapa

BERKAHWIN DAN TINGGAL BERSAMA	BERKAHWIN DAN TINGGAL BERASINGAN	BERCERAI HIDUP	BERCERAI MATI	JUMLAH PELAJAR
76	0	3	6	85

Rajah 9 : Peratusan Mengikut Status Ibubapa



6.2 Bahagian B - Jenis Gejala Sosial yang Pernah Pelajar Lakukan

Objektif kedua kajian ini adalah untuk mengenalpasti jenis gejala sosial yang pernah dilakukan oleh pelajar. Sebanyak 12 item telah dibina untuk mengkaji persoalan kajian ini. Analisis dipaparkan merujuk kepada Jadual 12.

Jadual 12: Analisis Min Jenis Gejala Sosial Yang Pernah Pelajar Lakukan

BIL	BAHAGIAN A	MIN	ТАНАР
1	Saya menghabiskan masa bersama rakan sebaya	2.72	Sederhana
2	Saya menghisap rokok	1.16	Rendah
3	Saya ponteng kelas semasa sekolah menengah	1.33	Rendah
4	Saya berkunjung ke tempat disko	1.06	Rendah
5	Saya terlibat dalam aktiviti vandalisma	1.05	Rendah
6	Saya terlibat dalam aktiviti peras ugut	1.02	Rendah
7	Saya terlibat dengan kumpulan gangster	1.04	Rendah
8	Saya terlibat dalam aktiviti lumba haram	1.07	Rendah
9	Saya terlibat dalam penyalahgunaan dadah	1.01	Rendah

10	Saya ditangkap khalwat	1.01	Rendah
11	Saya terlibat dalam salah laku seks	1.01	Rendah
12	Saya dikenakan tindakan tatatertib oleh pihak sekolah	1.06	Rendah

6.2.1 Berdasarkan hasil analisis diperolehi. secara vand keseluruhan responden mempunyai tahap yang rendah terhadap jenis gejala sosial yang pernah dilakukan. Nilai min yang mempunyai kedudukan tertinggi iaitu berada pada tahap sederhana bagi keseluruhan objektif ke dua ialah 2.72 di mana 48.24 % responden menyatakan "saya kerap menghabiskan masa bersama rakan sebaya". Rujuk Jadual 13.

Jadual 13: Peratusan kekerapan pelajar menghabiskan masa dengan rakan sebaya

MENC				
TIDAK PERNAH (0 kali)	KADANG- KADANG (1-2 kali)	KERAP (3-4 kali)	SANGAT KERAP (lebih 5 kali)	PERATUS
11.76	22.35	48.24	17.65	100.00

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Rajah 10: Skor Bilangan Pelajar Menghabiskan Masa Bersama Rakan Sebaya



6.2.2 Hasil analisis juga mendapati, nilai min yang mempunyai kedudukan sederhana pada tahap rendah adalah 1.33 di mana 68.24% responden "sava tidak menvatakan pernah ponteng kelas sekolah semasa menengah".Rujuk Jadual 14.

Jadual 14: Peratusan kekerapan pelajar ponteng kelas semasa sekolah menengah

PONTE				
TIDAK PERNAH (0 kali)	KADANG- KADANG (1-2 kali)	KERAP (3-4 kali)	SANGAT KERAP (lebih 5 kali)	PERATUS
68.24	30.59	1.18	0.00	100.00

Rajah 11 : Skor Bilangan Pelajar Ponteng Kelas Semasa Sekolah Menengah



6.2.3 Bagi dapatan min kedudukan terendah dan pada tahap rendah dalam objektif ke dua adalah 1.01 iaitu pada item-item di mana 98.82 % responden menyatakan "saya tidak pernah terlibat dalam penyalahgunaan dadah. sava tidak pernah ditangkap khalwat dan saya tidak pernah terlibat dalam salah laku seks". Ini menuniukkan bahawa qeiala sosial responden masih lagi pada tahap yang rendah. Rujuk Jadual 15, 16 dan 17.

Jadual 15: Peratusan kekerapan pelajar terlibat dalam penyalahgunaan dadah

PEN						
TIDAK PERN AH (0 kali)	KADANKERSANGATTIDAKG-KERSANGATPERNKADANAPKERAPAHG(3-4(lebih 5(0 kali)(1-2kali)kali)					
98.82	1.18	0.00	0.00	100.00		

Rajah 12 : Skor Bilangan Pelajar Terlibat Dengan Penyalahgunaan Dadah



Jadual 16: Peratusan kekerapan Pelajar ditangkap Khalwat

D				
TIDAK PERN AH (0 kali)	KADAN G- KADAN G (1-2 kali)	KERA P (3-4 kali)	SANGAT KERAP (lebih 5 kali)	PERAT US
98.82	1.18	0.00	0.00	100.00

Rajah 13: Skor Bilangan Pelajar Ditangkap Khalwat



Jadual 17: Peratusan kekerapan pelajar terlibat dalam salah laku seks

TERLIE						
TIDAK PERNAH (0 kali)	TIDAK KADANG- KERAP SANGAT PERNAH KADANG (3-4 KERAP (0 kali) (1-2 kali) kali) (lebih 5 kali)					
98.82	1.18	0.00	0.00	100.00		

Rajah 14: Skor Bilangan Pelajar Terlibat Dalam Salah Laku Seks



6.2.4 Analisis bagi min keseluruhan yang diperolehi daripada bahagian ini ialah 1.01 dan berada pada tahap rendah (1.0–2.0).Ini menunjukkan bahawa objektif ke dua kajian iaitu untuk melihat

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sejauhmana tahap gejala sosial responden yang pernah dilakukan mendapat respon yang baik. Ini membuktikan responden-responden ini berlatarbelakangkan tahap gejala sosial yang rendah dan tidak terdapat jenayah berat yang dilakukan oleh responden.Namun begitu. terdapat beberapa gejala sosial vang perlu dititikberatkan ini kerana walaupun menyumbang peratusan vang sangat kecil ianva memberi sedikit dalam kesan soal kajiselidik kali ini.

6.3 Bahagian C - Analisis Faktor-Faktor Kecenderungan Pelajar Terhadap Gejala Sosial

Objektif ke tiga kajian ini adalah untuk mengenalpasti faktor-faktor kecenderungan pelajar terhadap gejala sosial. Didapati responden bersetuju dengan faktor-faktor yang telah dinyatakan iaitu ibu bapa, diri sendiri dan persekitaran. Merujuk kepada Jadual 18.

Jadual 18: Analisis Min Faktor-Faktor Kecenderungan Pelajar Terhadap Gejala Sosial

BIL	BAHAGIAN B	MIN	TAHAP
13	Ibubapa/penjaga saya memantau pergerakan saya	3.2	Sederhana
14	Saya berkongsi masalah dengan ibubapa/penjaga saya	3.02	Sederhana
15	Ibubapa/penjaga saya mementingkan kerjaya	1.66	Rendah

	berbanding keluarga		
16	lbubapa/penjaga saya menerapkan nilai-nilai murni agama	3.64	Sederhana
17	lbubapa/penjaga saya menunjukkan tauladan yang baik	3.58	Sederhana
18	Masalah ibubapa mendorong saya ke arah gejala sosial	1.25	Rendah
19	Saya sentiasa mengamalkan tuntutan agama	3.53	Sederhana
20	Saya sentiasa berpakaian sopan	3.47	Sederhana
21	Memiliki kekasih mendorong saya terlibat dalam aktiviti tidak bermoral	1.33	Rendah
22	Saya berkawan dengan rakan- rakan yang mempunyai tingkah laku baik	3.45	Sederhana
23	Rakan-rakan menasihati saya sekiranya saya membuat salah laku	3.12	Sederhana
24	Saya terpengaruh dengan budaya negatif dari media massa	1.28	Rendah

6.3.1 Faktor ibu bapa

Pengkaji mendapati bahawa 98.82% responden bersetuju bahawa perlunya kekerapan pemantauan ibubapa terhadap mereka supaya mereka tidak cenderung ke arah gejala sosial. Manakala perkongsian masalah dengan ibubapa, seramai 97.65% responden bersetuju bahawa perlunya berkongsi masalah apabila responden menghadapi masalah. Dapatan ini membuktikan keperihatinan ibubapa terhadap segala responden tingkahlaku dan bimbingan apabila responden menghadapi masalah adalah diperlukan untuk sangat menghalang daripada cenderung ke arah gejala sosial. 63.53% responden menyatakan ibubapa penjaga mereka tidak atau

pernah mementingkan kerjaya keluarga. berbanding 98.83% responden bersetuju menyatakan penerapan nilai-nilai murni agama oleh ibu bapa atau penjaga perlu adalah penting.lbubapa melaksanakan pembangunan akhlak bermula dengan didikan solat, puasa dan sebagainya agar pelajar mempunyai iman yang kukuh daripada melakukan gejala-gejala sosial yang tidak bermoral.Selain daripada itu, Ibu bapa perlu menunjukkan contoh tauladan yang baik kepada anakanak agar mereka dapat jadikan panduan walau di mana sahaja mereka berada. Item ini disokong oleh 85.88% responden. Peranan ibubapa dalam pendidikan akhlak kaum remaja diperkukuhkan lagi oleh pendapat Hassan Langgulung (1980) yang menjelaskan bahawa ibubapa memainkan peranan yang penting sekali dalam pendidikan ahkhlak kaum remaja. Item yang bersifat negatif "Masalah ibu bapa mendorong saya ke arah gejala sosial" mendapat bantahan daripada 89.5% responden yang menyatakan bahawa masalah ibu bapa tidak pernah mendorong mereka ke arah gejala sosial.Ini kerana masalah gejala sosial berlaku kebanyakkan vang berpunca daripada diri mereka sendiri. Rujuk jadual 19.

Jadual 19 : Faktor-faktor ibu bapa yang menyumbang kecenderungan gejala sosial

Bi I	ltem Soalan	Tidak pernah (%)	Kada ng- kadan g (%)	Kerap (%)	Sangat Kerap (%)
1	Ibubapa /Penjag a saya memant au pergera kan saya	1.18	20.00	36.47	42.35
2	Saya berkong si masala h dengan ibubapa /penjag a saya	2.35	28.24	34.12	35.29
3	lbubapa /penjag a saya mement ingkan kerjaya berband ing keluarg a	63.53	15.29	12.94	8.24
4	Ibubapa /Penjag a saya menera pkan nilai- nilai murni agama	1.18	2.35	28.24	68.24
5	Ibubapa /penjag a saya menunj ukkan taulada n yang baik	3.53	3.53	24.71	68.24

6.3.2 Faktor diri sendiri

Faktor diri sendiri juga merupakan salah satu dari faktor yang menyumbang kepada kecenderungan gejala sosial seseorang pelajar. Sebanyak

97.65% responden bersetuiu bahawa mengamalkan tuntutan agama adalah penting dalam membentuk kehidupan sosial vang berkesan. Bagi item "Sava sentiasa berpakaian sopan" mendapat peratusan iaitu 98.82% sebanyak responden bersetuiu. Dengan wuiudnva kesedaran mengamalkan tuntutan agama berbantukan keimanan yang jitu dalam diri pelajar dapat mendorong mereka ke arah kehidupan sosial positif dengan kerelaan diri sendiri. Disamping itu,pengkaji berpendapat dengan keimanan vang teguh menyebabkan pelajar-pelajar dapat menjaga maruah mereka melalui berpakaian sopan dan ini melambangkan ketinggian maruah dan harga diri yang tinggi masih ada didalam diri pelajar. Rujuk Jadual 20.

Jadual 20 : Faktor-faktor diri sendiri yang menyumbang kecenderungan gejala sosial

Bil	Item Soalan	Tidak pernah (%)	Kadang- kadang (%)	Kerap (%)	Sangat Kerap (%)
1	Saya sentiasa mengamalkan tuntutan agama	2.35	5.88	28.24	63.53
2	Saya sentiasa berpakaian sopan	1.18	7.06	35.29	56.47

6.3.3 Faktor persekitaran.

Pengkaji membahagikan faktor persekitaran kepada faktor rakan

sebava dan media massa. Sebanyak 81.18% responden bersetuiu bahawa dengan memiliki kekasih tidak pernah mendorong saya terlibat dalam aktiviti tidak bermoral. Manakala sebanyak 96.47% bersetuju menyatakan bahawa sava berkawan dengan rakan-rakan yang mempunyai tingkah laku baik dan 91.76% responden memberi jawapan positif kepada "rakan-rakan menasihati item saya sekiranya saya membuat salah laku". Menurut sumber khilafah.com pengaruh daripada rakan sebaya lebih kuat daripada keluarga.Oleh sebab itu. para pelajar sepatutnya menjalinkan persahabatan dengan rakan-rakan yang berakhlak mulia dan mengelakkan diri dari berkawan rapat dengan rakan-rakan yang selainnya. Manakala sebanyak 78.82% responden bersetuju bahawa "sava tidak terpengaruh dengan budaya negatif dari media massa". Ini menunjukkan bahawa pada masa kini media massa amat pentina dalam mempengaruhi kehidupan seseorang pelajar. Ini mungkin program-program disebabkan televisyen khasnya,lebih mementingkan hiburan daripada maklumat.Sebagai contohnya tayangan-tayangan filem barat yang tidak ada sebarang tapisan mendorong ke arah cara hidup negatif .Disamping itu, kemungkinan gejala sosial semakin meningkat disebabkan

perkembangan media massa yang tidak terkawal dan tumbuh bak cendawan.Secara keseluruhannva. faktor-faktor daripada ibubapa, diri sendiri dan persekitaran tidak mendorong pelajar untuk terlibat dalam aktiviti gejala sosial. Ini menunjukkan bahawa responden memberikan respon vang positif terhadap faktorfaktor kecenderungan pelaiar terhadap gejala sosial. Rujuk jadual 21.

Jadual 21 : Faktor-faktor persekitaran yang menyumbang kecenderungan gejala sosial

Bil	Item Soalan	Tidak pernah (%)	Kadang- kadang (%)	Kerap (%)	Sangat Kerap (%)
1	Memiliki kekasih mendorong saya terlibat dalam aktiviti tidak bermoral	81.18	9.41	4.71	4.71
2	Saya berkawan dengan rakan- rakan yang mempunyai tingkah laku baik	3.53	4.71	35.29	56.47
3	Rakan-rakan menasihati saya sekiranya saya membuat salah laku	8.24	18.82	25.88	47.06
4	Saya terpengaruh dengan budaya negatif dari media massa	78.82	16.47	2.35	2.35

7.0 KESIMPULAN

7.1 Kesimpulan jenis gejala sosial yang pernah dilakukan oleh pelajar

Secara keseluruhannva responden bersetuju bahawa tahap sosial mereka pada tahap rendah.Ini kerana melalui kajian ini, majoriti pelajar menyatakan tidak pernah terlibat dengan gejala sosial yang dikategorikan sebagai kategori berat iaitu seperti penyalahgunaan dadah, khalwat dan salah laku seks.Daripada dapatan kaiian ini,kebanyakkan geiala sosial yang dilakukan oleh pelajar adalah suka menghabiskan masa bersama rakan-rakan sebaya.Gejala sosial ini adalah sosial jenis gejala yang ringan.Aktiviti menghisap rokok.pontena kelas dan vandalism mendapat respon pelajar pada tahap yang rendah. Ini menunjukkan jenis-jenis gejala sosial yang pernah dilakukan majoriti oleh pelajar boleh dikategorikan dalam gejala sosial ringan.

7.2 Kesimpulan faktor-faktor kecenderungan pelajar terhadap gejala sosial

Majoriti pelajar bersetuju dengan kecenderungan faktor-faktor pelajar terhadap gejala sosial yang telah dikemukakan oleh pengkaji iaitu faktor diri sendiri, faktor keluarga dan faktor persekitaran.Pelajar menyatakan ibu bapa merupakan faktor utama dalam menghalang pelaiar cenderung ke arah gejala sosial. Kenyataan ini disokong dengan Kajian Bronstein (1994) juga menunjukkan ibu bapa vang
mesra dan menyokong akan memberi kesan terhadap tingkah laku positif dalam kalangan anakanak, manakala jenis ibu bapa yang suka menghukum akan memberi kesan terhadap tingkah laku negatif dalam kalangan anak-anak.Ini kerana pemantauan kerap oleh ibu bapa akan mengelakkan anak-anak terlibat dengan aktiviti qeiala sosial.Selain daripada itu. peranan ibu bapa hendaklah sentiasa mendampingi anak-anak dengan mendidik mereka dengan nasihat dan tunjuk tingkah laku yang baik agar mereka sentiasa memahami institusi kekeluargaan dan mengetahui tanggungjawab diri mereka sebagai anak.lbu bapa juga harus peka dengan rutin dan aktiviti anak masingmasing selain sentiasa ada perasaan curiga bagi memastikan mereka lebih sensitif dengan perubahan anak mereka.Menurut Prof. Madya Datuk Mohd Ali Hassan, Pengerusi Persatuan Ibu bapa dan Guru Nasional percaya anak yang terbabit dengan gejala sosial adalah berpunca daripada kegagalan bapanya berperanan sebagai ketua keluarga selain agama yang kurang asas menyebabkan keruntuhan moral.

Di samping itu, faktor diri sendiri merupakan juga penvebab dominan seseorang itu tidak cenderung ke arah gejala sosial. Majoriti pelajar bersetuju bahawa pengamalan tuntutan agama dalam diri pelaiar itu sendiri lebih baik dalam membentuk sosial vang positif dan berkesan. Ini kerana sekiranya kurang didikan agama akan menyebabkan diri pelajar tersebut lebih mudah bertindak untuk melakukan gejala sosial.Malah boleh membawa

kepada sikap tidak menghormati orang dan berkelakuan lebih ganas dan kasar.Oleh kerana itu, ramai pelajar yang bersetuju untuk berpakaian sopan. Dengan wujudnya kesedaran diri sendiri dan pengamalan didikan agama yang kuat dalam diri pelajar dapat mereka mengikuti mendorong dan mematuhi segala disiplin vang telah ditetapkan dengan kerelaan diri sendiri tanpa dipaksa oleh pihak lain.

Faktor terakhir ialah persekitaran. Pengaruh rakan-rakan dan media massa juga turut menyumbang peranan dalam memastikan pelajar-pelajar berdisiplin. Pelajar menyatakan mereka berkawan dengan rakan-rakan vang mempunyai tingkah laku yang baik bahkan dinasihati rakanrakan sekiranya responden membuat salah laku. Kajian oleh Samsaadal dan Abdullah (2006) juga mendapati pengaruh rakan sebaya juga cukup besar. Remaja akan berasa selesa bersama rakan sebaya jika mereka diiktiraf. Selain itu, faktor penglibatan responden di dalam masalah sosial adalah membuat kebaikan yang jahat membawa keburukan. Daripada kajian ini juga, pelajar tidak bersetuju bahawa iuga mereka akan mudah terpengaruh dengan budaya negatif yang disiarkan di media massa. Ini kerana mereka mempunyai tahap pendidikan agama yang kukuh dalam diri mereka disamping mempunyai kesedaran didalam diri sendiri.

8.0 CADANGAN DAN TINDAKAN

Selaras dengan misi Politeknik Seberang Perai untuk



Menghasilkan modal insan cemerlang bukan sahaia di bahagian akademik malah sahsiah pelajar perlu diambil kira. Bagi mengelakkan tahap sosial pelajar berada pada keadaan meruncina. vand beberapa tindakan perlu diambil antaranya adalah:

8.1 Pengukuhan Interaksi Pensyarah dan Pelajar Semasa Proses Pengajaran Dan Pembelajaran

Menggalakkan semua Pensyarah menggabung jalinkan permasalahan pelajar dalam pengajaran dan pembelajaran mereka di bilik kuliah. Pendekatan seperti ini di dalam pengajaran dan pembelajaran dan secara berterusan akan memberi kefahaman dan keinsafan kepada pelajar.Gootman M.E bersetuju bahawa disiplin yang berkesan perlu dilaksanakan bersamasama dengan pengajaran yang berkesan. (Abdullah Sani. 2006:105)

8.2 Memperkasakan Penerapan Agama Dan Moral

Kebanyakan pelajar yang terjebak dengan gejala sosial tidak melaksanakan tuntutan agama dengan sempurna seperti tidak solat, tidak memahami hukum hal dan haram dalam islam (kebaikan dan keburukannya) tidak menghayati tuntutan syahadah dan sebagainya. Oleh itu sudah tiba masanya kita membentuk insan pelajar yang mempunyai kekuatan jiwa, dan mengikut akhlak yang disrankan Rasullullah S.A.W. Pembetukan akhlak mulia penting kerana akhlak yang

terbentuk dalam iiwa dan dimanifestikan melalui perbuatan. Jika khlak baik, perbuatan juga kan baik, dan sebaliknya. Strategi ini pernah dilaksanakan oleh Al-Ghazali. Iman vang berpendapat akhlak bahawa seseorang bersifat fleksibel dan boleh diasuh menjadi mulia melalui Latihan dan Pendidikan sesuai.(Mohd yang Nasir, 2005:158)

8.3 Penasihat Akademik Memainkan Peranan

Penasihat Akademik iuda disarankan untuk memainkan peranan penting di dalam mengawal selia anak buahnya. Pensyarah yang dilantik sebagai Penasihat Akademik telah diletakkan di dalam jadual mereka waktu perjumpaan bersama dengan pelajar masing-masing. Ambillah masa untuk mengenal pelajar-pelajar pasti vang dan bermasalah membawa mereka kearah kebaikan serta boleh menghantar nama mereka kepada Pegawai Psikologi di Unit Psikologi dan Kerjaya Politeknik untuk mendapat bimbingan yang sewajarnya.

8.4 Bimbingan dan Kaunseling

Unit Psikologi dan Kerjava Politeknik, khususnya kaunselor harus berperanan aktif dalam pihak membantu pengurusan politeknik untuk menangani masalah sosial pelajar. Sebagai pembimbing professional, mereka mempunyai tugas membimbing pelaiar bukan sahaia untuk menyelesaikan masalah, tetapi juga membentuk iklim politeknik yang tidak bermasalah.Beberapa program bagi mendekatkan diri

dengan pelajar perlulah dilaksanakan agar pelajar-pelajar yang mempunyai masalah sosial yang tinggi dapat dikenal pasti dan dapat dibentuk dari awal. web:http://eprints.utm.my/1 2174/1/JEPC-2011-1-007.pdf

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FACTORS AFFECTING CUSTOMER'S CHOOSING ISLAMIC PERSONAL LOAN: A CASE STUDY AT SEBERANG PERAI POLYTECHNIC

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Abstract

The purpose of this study is to examine how strong the progress of Islamic Personal Loan related to social demographic, product knowledge, service quality provided and promotion done by the finance institution. Another purpose is to compare among these factors in order to know which one is more determinant in influencina intention to choose respondents' Islamic Personal Loan. We expect a positive situation exists in Islamic financial market whereby the selection of Islamic personal loan by staff should be always parallel to the aood understanding about the product. If the selection of Islamic finance loan product derives more from quality of service offered or promotion it that shows the development of Islamic Personal Loan market is far a way to achieve its meaningful of operation. The population will be the whole Seberang Perai Polytechnic staff (N=500). [1] There are two categories of staff which are Academic staff and non academic staff. The researcher will focus on these two categories in order to construct a sample. The full list of all registered staff in Politeknik Seberang Perai will be gathered. Staff

details can be accessed from Department of Administration, PSP, Simple Random Sampling will be used as a sampling technique and 30% (150 respondents) from the whole population PSP staff will be considered as the sampling size. This study will investigate factors influence of Islamic Personal Loan selection among PSP staff. Therefore PSP staffs have been perceived to be the population of the study. The primary data for this study and data will be collected through distributing self administered questionnaire to all PSP staff. A structured questionnaire will be used for collecting necessary information which are related to our research questions and related affective factors of PSP staff choice for Islamic Personal Loan. Descriptive analysis will be employed to carry out data analysis. PSP staff profile is one of the sections in the questionnaire in this study. Varies demographic factors are included there.

Introduction

Islamic Finance has become the fastest growing sector in the global finance industry in recent years. It just not considered a traditional market anymore and become a global phenomenon and the rapid growth of Islamic Finance may be expected to



continue. But this situation will depend on how Islamic institution, government and the society respond to the challenges that exist in the horizon. The acceptance of customers to Islamic financial products present growing а phenomenon in which Malaysia itself has become a global financial centre promoting Islamic finance products through the operation of Islamic banking institutions. In Malaysia the demand for Islamic finance products among Muslim and non Muslim consumers was increased from year to vear. This situation has encouraged conventional banks such as Maybank Berhad to shift Islamic Finance product in their operation to meet market demand or they will be left behind with the new financial system. They need to change to be on the track of the market and therefore the consciousness among the Muslim for Islamic finance product to be monitored. need Islamic Finance and Banking has emerged as a new reality in the international financial scene. Its philosophies and principles are however, not new, having been outlined in the Holv Qur'an and the Sunnah (words, action and approval of the Prophet where later put in writing by his followers and transmitted to others as "hadith") of Prophet Muhammad (p.b.u.h.) more than 1,400 years ago. The emergence of Islamic banking is often related to the revival of Islamic financial system which is totally usury (riba) free. Riba literally means addition, expansion increase. or growth which is non-trade related like a loan and advances.

Islamic Finance in the modern world, generally aims to promote and develop the application of Islamic principles, law and traditions to transactions of financial, banking and related business affairs. It is also to introduce investment companies to be engaged in such business activities that are acceptable and consistent within the Svariah perspective. Islamic finance, hopefully, will safeguard the Islamic communities and societies from activities that are forbidden in Islam, Islamic Banks, like conventional banks, are profitable organizations. Their aim is to gain profit, but they are not allowed to deal with interest or to engage in any business or trade prohibited by Islam. In contrast, traditional conventional banks have as their main goal the maximization of profit subject to a reasonable level of liquidity. They tend to deal with loans only and are keen in engaging themselves in direct investment as a main activity.

The difference between the conventional banking system and the Islamic banking system is that, in the conventional system, interests are given (pre-promised) with a guarantee of repayment and a fixed percentage return while in the Islamic system; investors share a fixed percentage of profit when it occurs. The share of the two practices will vary according to the profit achieved. Banks get back only a share of profit from the business to which it is a party and in case of loss, the business party loses none in terms of money but forgoes the reward for its activities during that period. It is very important to remember that the Islamic finance and banking movement in the country has only approximately 30 years, so it is unfair to compare its result with those of the conventional banks which have been in existence for almost 300 vears.

2. BACKGROUND OF THE STUDY

The problem facing all economic system is what is taught on the first day of all economic classes in all parts of the world : what good and services to produce, how to produce them using factors of production, and for whom should these be produced. These questions also shaping the way Islamic economic develops and changes the structure of world financial market. As we know, Islam is rule-based reliaion and the а fundamental rules for economics and the finance are the same. But one of the major challenges facing the development of Islamic finance is the limited progress in Islamic economic thought. The successful of development in Islamic Finance must be based on the progress of the financial instrument Islamic and supported by the obedience behavior of members in Islamic society.

In Malaysia recently, Islamic Personal Loan become one of the popular Islamic banking products demanded by customers but our knowledge is still limited and ambiguous on this services especially when we focus on the factors motivating people to choose Islamic Personal Loan. In this context, a number of questions can be raised. For example, what are the main factors that motivate PSP staff to choose Islamic Personal Loan? There are various factors influencing the staff to choose IPL but in this study, an attempt is made to analyze four main factors as stated below:

- i. Social Demographic
- ii. Product Knowledge
- iii. Service Quality
- iv. Promotion

From here, the researcher wants to examine how strong the progress of Islamic Personal Loan correlates to

demographic, social product knowledge, service quality provided and promotion done by the finance institution. Another purpose is to compare among these factors in order one know which is most to determinant in influencing respondent intention to choose Islamic Personal Loan. We expect a positive situation exists in Islamic financial market whereby the selection of Islamic personal loan by staff should be parallel alwavs to the aood understanding about the product. If the selection of Islamic finance loan product derives more from quality of service offered or promotion it shows that the development of Islamic Personal Loan market is far a way to achieve its meaningful of operation.

2.1. Research Questions

- 1. What are the factors affecting Seberang Perai Polytechnic Staff to choose Islamic Personal Loan?
- 2. What is a specific objective to analyze factors influencing Seberang Perai Polytechnic Staff to choose Islamic Personal Loan.

2.2. Research Objectives

- 1. The general objectives of research are to identify factors affecting Seberang Perai Polytechnic Staff to choose Islamic Personal Loan.
- 2. The specific objectives to analyze factors influencing choice made by respondents in term of respondents' social demographic, product knowledge, service quality and promotion.



2.3. Significance of Study

2.3.1. The Researchers

The result of the study will be a guideline to other researchers in future who are interested to explore deeply into factors influencing public to choose Islamic Personal Loan. Moreover, the findings will provide some updated evidence that help researchers to analyze current situation on Islamic Personal Loan operation.

2.3.2. Bankers

The recent findings will provide some regarding information market atmosphere especially customers who take and choose Islamic Personal Loan. This information will also help the management team in banking and finance institutions to make a strategic decision in term of profitability and social responsibility. For instance, if the study find out poor knowledge among product the respondents, bankers can set up programs to educate the customers.

2.4. Limitation of Study

2.4.1 Variables

variables analyzed The in the research may provide the uncertain results as there are many factors actually exist in the business market that influence people to choose Islamic Personal Loan. For example religious factor also one of the important variables but rarelv included. This is due to sensitivity problem that can arise during the data collection.

2.4.2. Time Constraint

With limited time frame given, the research cannot present all possible factors that might influence the choice among the respondents.

3. LITERATURE REVIEW

3.1 Introduction

Understanding the motivations, expectations and desires give actually some foundation to researcher to know what factors affecting customer's to choose Islamic Personal Loan. In other words it is a key to know how analyzed factors shaping the respondents' attitude and behavior. In this literature review the researcher like to discuss first on these foundation of attitude and behavior before touching on the meaning of the variables in the study. Lastly, relevant research in the past also been discussed in this chapter.

3. 2. Theory of Planned Behavior

Specifically, attitudes mean as the evaluative effect of positive or negative feeling of individual in performing a particular behavior [3]. It is strongly asserted that attitude and behavior intention have significant relationship [3]. This also means that an increase in attitude will also lead to increase of intention to choose or to use a product or service, in this case the Islamic Personal Loan product. This situation can be also explained the following Theory of Planned Behavior (Figure 1) introduced by Icek Ajzen [2]:

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Figure 1 : Theory of Planned Behavior by Azjen [2]

According to Azjen [2], attitude toward behavior is the degree to which performance of the behavior is positively negatively valued. or According to the expectancy value model, attitude toward behavior is determined by the total set of accessible behavioral beliefs linking the behavior to various outcomes and other attributes. Subjective norm is the perceived social pressure to engage or not to engage in behavior. It is assumed that subjective norm is determined by the total set of accessible normative beliefs concernina the expectations of important referents. Ajzen [2] said perceived behavioral control refers to people's perceptions of their ability to perform a given behavior. It is assumed that perceived behavioral control is determined by the total set of accessible control beliefs about the presence of factors that may facilitate performance impede of or the behavior. To the extent Aizen [2] concluded that it is an accurate reflection of actual behavioral control. perceived behavioral control, together with intention can be used to predict behavior.

3.3. Meaning of Variables

Social Demographics or demographic data are the characteristics of a human population as used in government, marketing or opinion research, or the demographic profiles used in such research. Commonly used demographics include gender, income, disabilities. race. age, mobility (in terms of travel time to work or number of vehicles available). educational attainment. home ownership, employment status, and even location. Distributions of values within a demographic variable, and across households, are both of interest, as well as trends over time. Social Demographics are frequently used in economic and marketing research. Another form of demographics is post-demographics, originally a way to study the data retrieved from social networking sites, but also very applicable to integrate with marketing theories.

Product Knowledge comes in various forms - a product's features for its intended purpose, what goes with what - a product's associations, and how a product works. A sales representative would be expected to know the product's features and sufficient of how it is used to convince the customer of its worth. When a sales contact is made, there usually already understands on the buyer's side of what the product broadly does, the sales representative only needing to fill in the holes - anticipate the customer's requirements, suggest support products and services, show how product features related to the buyer's use of the product.

Quality of service is a broad term that is used in both customer care evaluations and in technological evaluations. In both applications, the



quality of service has to do with measuring the incidence of errors within a process that resulted in the creation of issues for an end user. The goal of any quality of service evaluation is to minimize the incidence of transmission issues and the error rates that may result. In terms of customer care, quality of service is often measured in terms of issues that have a direct impact on the experience of the customer. From this perspective, only issues that produce a negative effect on the goods and services received by the customer come under scrutiny. Many companies go to great lengths to generate as low a percentage of customer-effecting errors as possible. In general, corporations in many industries seek to have a 2% or less error rate as part of their overall customer care strategy. Evaluating the quality of service in this manner does not mean companies do not address internal problems that have yet to impact customers. Corporations often evaluate each step of the manufacturing and delivery process in hopes of finding ways to streamline operations to minimize costs and still deliver products to customers in a timely manner.

According to Kotler [4], promotion is one of the four elements of marketing mix (product, price, promotion, distribution). It is the communication link between sellers and buyers for the purpose of influencing, informing, or persuading a potential buyer's purchasing decision.

Above the line promotion: Promotion the media (e.q. TV. radio. in newspapers, Internet, Mobile Phones, and, historically, illustrated songs) in which the advertiser pavs an advertising agency to place the advertisement [4].

Below the line promotion: All other promotions. Much of this is intended to be subtle enough for the consumer to be unaware that promotion is taking place. For example sponsorship. product placement. endorsements. sales promotion. merchandising, direct mail, personal selling, public relations, trade shows. The specification of five elements creates promotional mix а or promotional plan. These elements are personal selling, advertising, sales promotion, direct marketing, and publicity [4]. A promotional mix specifies how much attention to pav to each of the five subcategories, and how much money to budget for each. A promotional plan can have a wide range of objectives, including: sales increases, new product acceptance, creation of brand equity, positioning, competitive retaliations, or creation of a corporate image. Fundamentally, however there are three basic objectives of promotion. These are to present information to consumers as well as others to increase demand to differentiate a product. There are different ways to promote a product in different areas of media. Promoters use internet advertisement, special events. endorsements. and newspapers to advertise their product. Many times with the purchase of a product there is an incentive like discounts, free items, or a contest. This is to increase the sales of a given product. The term "promotion" usually "in" is an expression used internally by the marketing company, but not normally to the public or the market - phrases like "special offer" are more common. An example of a fully integrated, longterm, large-scale promotion is My Coke Rewards and Pepsi Stuff. Islamic Personal Loan is one of financing made according to Islamic law, which forbids the payment or receipt of interest. An Islamic loan

may be an interest-free loan, but often it is a more complex transaction. For example, a bank could buy an asset for cash and then re-sell it to the "borrower" for a profit such that the profit is the same as the bank would have made had it extended a regular loan. Other types may involve the bank becoming a partner with the "borrower" so that both co-own the asset or business that the loan finances, and the borrower gradually buys the bank's share of ownership with a series of payments. Strictly speaking, most Islamic loans are partnerships or joint ventures, but they are called loans because they accomplish much the same thing as conventional loans [4].

3.4. Past Researches

Haron, Ahmad and Planisek (5) found that the selection criteria of Muslim bank customers in Malaysia was largely based on non-religious aspects, such as service efficiency, transaction speed, and the friendliness of bank personnel. Even with these result, some 40 % of the respondents indicated that religion was a prime reason for using Islamic banking services. They noted that although there was a high level of awareness of Islamic products, there was poor understanding of the between Islamic differences and conventional banking, as well as weak knowledge regarding Islamic product and services.

Halim, A [6], surveyed Malaysian commercial bank customers, finding as a high awareness of Islamic banking but poor self-reported knowledge of specific Islamic including products. poor understanding of the difference between Islamic and conventional

banking. In another study of Malavsian commercial customers and their views of Islamic financial services, Ahmad and Haron [5] noted that 65% of the respondents admitted to having limited knowledge of Islamic banking, while at the same time indicating that they believed the concept had good potential in the Malaysia market.

The strong growth in the Islamic financial service suggests that a better understanding of the factors that influence the choices of customers is essential. Two things seem verv clear from a survey of the literature are the level of knowledge in Islamic products seems weak across studies that measured such knowledge. This encourages the researcher to monitor the changes in product knowledge through this study and lastly the attitudes toward Islamic financial services partly influenced by religious factors and perhaps other individual characteristics of the consumer. Therefore, the researcher had

included other main factors such as promotion and service quality in this study to see the role played by these factors in influencing bank customers.

This study seeks to add to this literature by examining more carefully the relationship between product knowledge, social demographic, service quality and promotion among Seberang Perai Polytechnic staff that choose Islamic Personal Loan. Perhaps, the findings from this study will reveal some underlying important drivers of choices in Islamic Personal Loan in Malaysia as general.

4. METHODOLOGY

4.1. Conceptual Framework



Figure 2: Conceptual Framework of Study

This study tries to identify the factors contribute Seberang Perai Polytechnic Staff's towards motivating to choose Islamic Personal Loan. It is exploratory study when the an researcher attempts to develop clear concept and establish priorities among independent variables. As also a causal study, the researcher tries to analyze how strong the independent variables produce for Islamic changes in choice Personal Loan as its dependent variable.

Based on discussion in literature review, it was identified that social demographic, product knowledge, service quality and promotion are the main factors affecting PSP staff to choose Islamic Personal Loan. Therefore, based on these factors, theoretical framework of the study has been developed as in Figure 2.

4.2. Hypothesis of the Study

Following hypothesis have been selected in the study based on the analytical interpretation in the previous section Cultural seem to exist and determine the intention to choose Islamic Personal Loan. These bank selection criteria vary from country to country and are subject to demographic determinants such as gender, age and educational background [8]. The researcher test the hypothesis that:

H1 = Social demographic factors (gender, age, race, education, monthly income) affect the choosing of Islamic Personal Loan.

The poor knowledge of Islamic principle has been one area of concern in this literature for over ten years [6]. But in spite of the growing interest in the field of Islamic Finance, no general educational initiative has been launched by either government or financial institutions [6] to address this lack of basic product knowledge. In this study researcher wanted to measure level of product knowledge among PSP staff and hypothesizes that:

H2 = Product Knowledge affects the choosing of Islamic Personal Loan.

Customer satisfaction often depends on the quality of product or service. Service quality has been described as a form of attitude that results from comparison of expectation with performance [6]. The hypothesis is:

H3 = Service Quality affects the choosing of Islamic Personal Loan.
 Organizations needs to promote their product or services in order to

establish a foothold, increase market share and compete, the choice of promotion depends upon various factors internal as well as external [7]. A brief look at various promotional strategies would enable us to understand the concept and benefits of each of these. Consequently, we test the hypothesis that:

H4 = Promotion activities affects the choosing of Islamic Personal Loan.

4.3. Population

The population will be the whole of Seberang Perai Polytechnic staff (N=500) [1]. There are two categories of staff which are Academic staff and non academic staff. The researcher will focus on these two categories in order to build a sample.

4.4. Sampling Design

The full list of all registered staff in Seberang Perai Polytechnic [1] will be aathered. Staff details can be accessed from Department of Administration, PSP. Simple Random Sampling will be used as a sampling technique 30% (150)and respondents) from the whole PSP staff will population be considered as the sampling size to represent the population. The full list of 150 respondents selected will be the sampling unit.

4.5. Data Collection

This study will investigate factors affecting customers to choosing of Islamic Personal Loan selection among PSP staff. Therefore PSP staffs have been perceived to be the population of the study. The primary data for this study and data will be collected through distributing self administered questionnaire to all PSP staff. A structured questionnaire will be used for collecting necessary information which is related to our research questions and related affective factors of PSP staff choice for Islamic Personal Loan.

4.6. Measurement

Descriptive analysis will be employed to carry out data analysis PSP staff profile is one of the sections in the questionnaire in this study. Varies demographic factors are included there. A profile of respondents shown in the table below.

Table 1 : Respondents Demographic Profile					
(Please tick appropriate items below)					
Gender					
Male					
Female					
Age					
20-25					
26-30					
31-35					
Above 35					
Race					
Malay					
Chinese					
Indian					
Others					
Education					
SPM					
STPM					
Diploma					
Graduate					
Post Graduate					
Monthly Income					
Less 1500					
1500-2500					
2500-3500					
3500-4500					
Above 4500					

Table 1: Respondents DemographicProfile

Likert scale is used to measure degree of respondent attitude. There are three more independent variables based on research hypothesis which are:

- i. Product Knowledge
- ii. Service Quality
- iii. Promotion

To measure the variables, the answer consists of 5 choices as below:

For example:

I really understand the application of Murabahah concept in Islamic Personal Loan.

1 5	2	3	4

1. Strongly Disagree

- 2. Disagree
- 3. Neither Agree
- Agree
 Strongly Agree

Table 2: Likert scale

Please indicate your level of agreement for the following research items based on the scales above

PRODUCT KNOWLEDGE	1	2	3	4	5
 I know how prohibition of riba being implemented in IPL 					
2. I really understand the application of Murabahah concept in IPL					
3. I really understand the meaning of Bai bithaman Ajil in IPL					
SERVICE QUALITY	1	2	3	4	5
1. Bank personnel who handle IPL is very polite					
2. Approval wait					

time for IPL is acceptable					
3. After sales service in IPL is very good					
PROMOTION	1	2	3	4	5
1. I choose IPL because of its special discount in profit margin					
2. I choose IPL because of its intensive advertisement					
3. I choose IPL because of its Personal Selling approach					

Table 3: Items for questionnaires

5. STATISTICAL ANALYSIS

5.1. Multiple Regression Analysis

A relationship also serves as a basis for estimation and prediction. By using Statistical Programme for Social Science computer software. the researcher want to apply Multiple Regression Analysis to the data because there is more than one X variables is used to estimate or predict corresponding Y values [9]. The Multiple Regression Analysis model also can be used to determine which variable are determinants of the PSP staff to choose Islamic Personal Loan.

Model of equation:

IPL = α + β1 SocialDemography + β2 Product Knowledge + β3 Service + β4 Promotion (IPL = Islamic Personal Loan)

Table 4: Model for IPL equation The coefficient of determination is symbolized by r^2 (R Square) will be used to interpret the total proportion of variance in dependent variable (Y) explained by independent variables (X). It is also an important indicator of the predictive accuracy of equation. Typically we would like to have an R square that explains 80% or more of the variation. Lower than that. predictive accuracy begins to fall off. For example, if the value of R Square 0.80 for predictor Product _ Knowledge, it indicates that 80 % of the variance in dependent variable is explained by independent variable.

5.1.2. Pearson Correlation Coefficient

The researcher wants to analyze type of relationship between the variables through correlation coefficient. Positive correlation will indicate a positive linear relationship between the variables; as one increase in value so does the other variable. The value for this correlation ranges from -1 to 1. If the values are closer to the absolute value of 1 indicate that there is strong relationship between the variables being correlated.

5.1.3 Anova

Analysis of variance (ANOVA) can also be used to investigate relationship between PSP staff choice for Islamic Personal Loan and respondents' social demographic characteristic. With 95 % confidence the significant of relationship between



each demographic characteristic will be analyzed.

6. CONCLUSION

The expectation of the researcher is that this study will succeed in reviewing the impact of Social Demographic, Product Knowledge, Service Quality and Promotion on the choice made by PSP staff for Islamic Personal Loan. The results of the study perhaps can lead to several policy implications for different parties of interest especially for Islamic Finance institution.

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EFFECTS OF mE-BOOK ON POLYTECHNIC STUDENTS' READING COMPREHENSION AND LEARNING ENGAGEMENT

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Abstract— This study attempts to examine the use of two modes of multimedia E-book (mE-book) in the English language classroom of a group of diploma students at a national Polytechnics in Malaysia. Among the aspects that were examined were the student's reading comprehension and their learning engagement. A set of tests and a questionnaire were used as data collecting instruments that were given to the students after they have experienced the mE-book. Data collected were analysed to answer the research questions. The results revealed that the polytechnic students who used mE-book_n showed significantly higher reading comprehension and learning engagement compared to students who used mE-book_w.

Keyword: mE-book, Polytechnic, Reading Comprehension, Learning Engagement

1.0 INTRODUCTION

In this digital age, the current students' generation is more comfortable with visual non-text media [1]. Many young people grow an around video and computer games, and when it comes to reading, they expect similarities applied in the technology [2]. These students have developed ways to learn directly through visual media devices such as computers, video games and the Internet [3]. Students' high computer literacv and keen interest in multimedia have also inspired language educators to consider the possibility of converting their traditional teaching setting to the e which students setting to are constantly exposed [4]. Educators are encouraged to use computer technology such as multimedia as an intervention tool to reverse students' negative attitudes towards reading in second language [5].

Multimedia E-book, which is also known as mE-book, is a digital representation of paper-book that



integrates new multimedia features and hypertext links [6] [7] [8] [9]. This digital new book allows easv integration of video, audio, and interactivity. mE-book is able to "read by itself" with audio narration, offer the ability to make and share annotations without destroying the book, interactive self-tests throughout the chapters, and generally a much more enjoyable reading experience beyond the printed format [10]. Due to familiarity and preference for visual media, young readers are also choosing to read multimedia E-book for a simpler reason- they are entertaining to read.

Multimedia E-book is important in promoting the ideas of visual literacy and accommodating students who might be classified as visual learners. Students prefer to read books that are entertaining. However, in this era, students are made to read text-only books and this is inappropriate. Multimedia E-book can fill this gap [11] as the combination of visuals and words work together to increase comprehension [12]. In addition to aiding visual learners, multimedia ebook can also be a beneficial tool for reluctant or strugaling readers because it is helpful in specific areas of reading instruction. The visual images in multimedia E-books can support vocabulary development. Students may see an unfamiliar word, but with the help of visual context clues, are able to decode it by themselves [13].

2.0 WHAT IS ME-BOOK?

mE-book is not only limited to static text and pictures; it also integrates video, audio, animation, and even interactive simulation [14]. mE-book, goes beyond a simple black and white textual E-book, is integrated with pictures, videos, text and sound together in a capsule [15]. Labbo defined multimedia E-book as interactive digital versions of stories that employ multimedia features such as animation, music, sound effects, highlighted text, and modeled fluent reading [16]. Similarly, Shamir and Korat described multimedia E-books as books that replicate well-known storybooks and integrate different kinds of expression [17]. They are a form of interactive digital narrative that generally combines multimedia effects such as written text, oral reading, oral discourse, music, sound, and animation.

The content of the multimedia E-book is presented in an interactive way by adding graphic, colourful text. animation and sound. Those elements will attract readers to read more as animation and graphic can convey more information [18] [19]. The integration of multimedia features into E-books, such as text, sound and videos in the classroom is becoming a potential teaching and learning tool in language learning especially teaching reading in English as Second (ESL) When Language classes. learners read multimedia E-book, they can hear and see and this provides greater recall of the story rather than printed storybook. This will interest them in reading and improving their literacy.

As the instructional technologies develop, mE-books support flexible learning strategies. Flexible modes of learning have the potential to increase students' engagement in learning by giving them more control over the nature of the learning content and activities, and over the time and place they study [20]. In addition, mE-books can be used to improve students' reading skill and the students would feel more motivated in learning a second language by integrating the

technology into teaching and learning session.

Following the paper book metaphor, mE-book also integrates the hypermedia technology that reduces the cognitive loads of the learners when using the new technology. This multimedia E-book involves three sections; front section, main section, and back section. Each of this section is further made up of subsections as described in Figure 1. Main section can have as many chapters as required and in each chapter, there is no limit to the number of required pages that are integrated with visuals, voice, music, text and videos.



Figure 1 Structural components of mE-book

Designing mE-book for language learning needs greater effort in the presentation of the book contents since this will partly determine the success of the learning process. It is important to carefully design the way the content is structured, organized, and presented. mE-Book design is supported by five multimedia elements; visual, text, music, voice and videos. Each mode will have activities that support at least one learning style. The pages of mE-book may include two or three elements at one time. Figure 2 shows a summary of the elements of mE-book.

This mE-book technology provides a multi-genre reading space that

engages and draws students into a different interaction with reading text [15]. These features can enhance literacy and reading skills among student with various cognitive styles. mE-book, specifically, also appeals to multiple intelligences as it provides embedded mixture of visual (text, graphics or video) and audio (sound, music or voice) modalities that enables students to learn through their preferred modality [21]. Students are able to learn the pronunciation of the text as they are reading, watch the graphics and videos to create and integrate 'schema' to understand better as well as read the text freely at their own will.



Figure 2 Multimedia E-book (mE-Book) Concept

The main reason why mE-book is changing the nature of reading is because of embedded multimedia features. such as oral reading. highlighting, animations, and music/sound effects, all of which are impossible with printed books [5]. The multimedia elements in the E-book has been emphasized and advocated for integration with reading input [16] [22] [23] [24] [25]. The combination of text-audio-visual elements in mEbook offer students а welcome



change from routine lectures in the classroom and also arouse their interest in learning various types of modalities.

3.0 RESEARCH OBJECTIVES

The objective of the study is to investigate the effects of the 'mE-Book with narration' (mE-book_n) compared 'mE-Book without to (mE-book_w) treatment narration' condition on students' reading comprehension and learning engagement.

4.0 RESEARCH QUESTIONS

This study is designed to address specifically two sets of questions:

- Is there a significant difference in reading comprehension between students who used mE-book_n compared to students who used mE-book_w?
- Is there a significant difference in learning engagement between students who used mE-bookn compared to students who used mE-bookw?

5.0 RESEARCH HYPOTHESIS

- H₀1 There is no significant difference in reading comprehension between students who used mE-book_n compared to students who used mE-book_w.
- H₀2 There is no significant difference in students' learning engagement between students who used mE-book_n compared to students who used mE-book_w.

6.0 RESEARCH METHODOLOGY

This study employed a quasiexperimental pre-test and post-test. It employed a 2x2 factorial design. The purpose of using a factorial design in this study is to determine the effects of mE-book on the dependent variables: namely students' ESL reading comprehension, and learning engagement. This studv was conducted with intact classes, thus the students are tested under the instructor's supervision. Table 1 illustrates the factorial design for the study with factor X_s and O_s .

Table 1 Factorial design of the study

Independent Variable	Dependent Variable
mE-book	O ₁
(X _{1,} X ₂)	O ₂

 X_1 Multimedia E-book with narration X_2 Multimedia E-book without narration O_1 Reading Comprehension

O₂ Learning Engagement

6.1 Variables

The study involved two types of variables as follow:

- 1. Independent variables: Comprising two modes of treatment modes. which are the multimedia E-book with narration (mE-book_n) and the multimedia E-book without narration (mE-book_w). mE-book_n is electronic book which an incorporates text, visual, narration and other multimedia elements such as animations and videos, whereas mE-book_w is basically the electronic version of paper-based book that only contains text and visual.
- 2. Dependent variables: comprising students' reading comprehension as measured by the post-test scores on the ESL topic, and students' learning engagement.



6.2 Research Instruments

The instruments used for this study includes pre-test questions and post-test questions to measure students' reading comprehension in the 'Greetings and Introductions' topic, and Learning Engagement Scale $(LE_{ng}S)$ [26] to measure the student' learning engagement.

6.3 Intervention

This study was conducted on 60 Semester 1 students from a national polytechnic in Malaysia. It aimed to investigate the effects of two modes of mE-book on students' reading comprehension and learning engagement. A pre-test were administered before the execution of the treatment using mE-book. The treatment conditions (mE-book mode) were then given randomly to the student whereby 31 students used mE-book, and 29 students used mEbook_w. mE-book_n which is an electronic book which incorporates text, visual, narration and other multimedia elements such as animations and videos whereas mEbook_w is basically the electronic version of paper-based book that only contains text and visual. The students took about two hours to complete the treatment which also includes posttest. This is to measure the students' reading comprehension. Immediately after the treatment, the students were also given another guestionnaire which is the Learning Engagement $(LE_{ng}S)$, to measure Scale the students' learning engagement.

7.0 DATA ANALYSIS

The data collected in this study are analysed using the Statistical Package for the Social Sciences (SPSS version 18.0). All the data are analysed by using 0.05 (p <. 05) significant levels.

This study observed two dependent variables which are the students' comprehension scores and learning scores. engagement The data collected from the study is analysed using parametric statistical analysis that involves the pre-test and post test measure the reading scores to comprehension and $L_{Ena}S$ questionnaire scores to measure the students' learning engagement. Table 1 illustrates the descriptive statistical analysis for reading comprehension and Table 2 illustrates t-test analysis for reading the comprehension.

Table 1 Descriptive analysis of reading comprehension by treatment mode

	Mode	Ν	Mean	Std. Deviation
Reading mE-book₅	31	19.00	11.82	
(Post-Pre)	mE-bookw	29	2.55	10.54

The statistical analysis also shows that the total mean for the students' reading comprehension for mE-book_n is 19.00 with a standard deviation of 11.82. For mE-book_w, the mean score was 2.55 (SD = 10.54). It is reported that students who used mE-book_n shows a higher reading comprehension compared to mEbook_w.

The independent-groups T-test statistical technique was carried out to determine if there was a statistical difference among the students of the two treatment modes. Table.2 shows that there is a significance difference at *p*-value in the scores of reading comprehension of the two treatment modes.



It is reported that the p-value of Levene's Test for reading comprehension is 0.420 (df = 58, t =5.67, sig = .000). This result indicates that the two experimental groups used for this studv were homogeneous as the *p*-value of Levene's Test is greater than 0.05 (p >.05). For this study, it is reported that students who used mE-book_n showed significantly higher reading comprehension (p= 0.00) with a mean difference of 16.45, compared to the students who used mE-book_w. This shows that mE-book_n has a higher students' impact on reading comprehension.

Table 2 T-test analysis for readingcomprehension by treatment mode

		Leven for Equ Varia	e's Test Jality of ances			t-test	for Equality	of Means		
						Sia. (2-	Mean	Std. Error	9: Conf Interva Diffe	5% idenc al of th rrence
		F	Sig.	t	df	tailed)	Difference	Diference	Lower	Upp
Reading Score	Equal variances assumed	.66	.420	5.67	58	.000	16.45	2.89	10.65	22.2
	Equal variances not assumed			5.69	57.87	.000	16.45	2.88	10.67	22.2

Table 3 illustrates the descriptive statistical analysis for learning engagement and Table 4 illustrates the t-test analysis.

Table 3 Descriptive analysis of learning engagement by treatment mode

	Mode	Ν	Mean	Std. Deviation
Learning	mE-book₁	31	4.22	.34
Engagement	mE-bookw	29	4.01	.34

The statistical analysis also shows that mE-book has high impact on students' learning engagement. The total mean for the students' learning engagement in mE-book_n is 4.22 with

a standard deviation of 0.34. For mEbook_w, the mean score was 4.01 (*SD* = 0.34). It is reported that students who used mE-book_n shows a higher learning engagement whereby the students find mE-book_n was more engaging compared to mE-book_w.

Table 4 t-Test analysis for learning engagement by treatment mode

		Leve Tes Equa Varia	ene's t for lity of inces			t-te:	st for Equali	ty of Means		
		_				Sig. (2-	Mean	Std. Error	95% Cor Interval Differ	fidence of the ence
		F.	SIG.	_ T_	at	tailed)	Difference	Diference	Lower	Upper
Learning Engagement	Equal variances assumed	.00	.99	2.35	58	.022	.209	.089	.031	.39
	Equal variances not assumed			2.35	57.74	.022	.209	.089	.031	.39

As for the learning engagement, the p-value of Levene's Test is 0.99 (df =58, t = 2.35, sig = .022). This result indicates that the two experimental aroups used for this study were homogeneous as the p-value of Levene's Test is greater than 0.05 (p >. 05). For this study, mE-book_n shows a slightly higher mean score compared to mE-book_w, whereby students find mE-book_n more engaging, motivating and usable in their learning environment. It is also reported that students who used the mE-book_n showed significantly higher learning engagement (p= 0.02) with a mean difference of 0.21, compared to the students who used mE-book_w. This shows that mE-book, has a higher impact on students' learning engagement. However, both groups multimedia E-book agreed that engage them more compared to traditional book.

8.0 CONCLUSION AND DISCUSSIONS

This study was conducted in an attempt to investigate the effects of

the 'mE-Book with narration' compared to 'mE-Book without narration' treatment condition on students' reading comprehension and learning engagement.

In this effort, 60 students from a national Polytechnic in Malaysia were chosen randomly as the respondents. The overall result indicates that these polytechnic students prefer to read multimedia E-book for simpler reasons- they are entertaining to read and the familiarity and preference for visual media. This is because of their expectations for entertainment is high. They prefer to combine education with entertainment.

The findings of this study revealed that the polytechnic students who showed used the mE-book_n significantly higher reading compared comprehension to the students who used mE-book_w This shows that students who are digital natives prefer to read electronic book that are able to "read themselves" with audio narration and generally giving the students a much more eniovable reading experience. creating an engaging experience beyond the printed format mE-book_n has a higher impact on students reading comprehension. As for the learning engagement, mE-book_n shows a slightly higher mean score compared to mE-book_w, whereby students find mE-book_n engaging, motivating and usable in their learning environment.

Several limitations can be found in the conduct of this study. Among them are the small sample size, the inclusion of only one polytechnic, and the limited amount of variables studied. A bigger and longer scale study needs to be conducted for more reliable results, and with the inclusion of more variables are related specifically with reading in the digital environment. Future studies should focus more on how reading can actually take place using computers and digital devices.

In a nutshell, using technology for reading will encourage the students to explore the process in an alternative medium other than conventional books. This technology-based reading will motivate them to read more as the students, who are digital-natives, are more keen to use computers for and technologies for learning. Bv increasing their motivation to read. the students will be reading more, which will lead to improvement in their language proficiency.

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MAKLUMBALAS TENTANG KEBERKESANAN PERLAKSANAAN KONVENSYEN PEMBANGUNAN DIRI DAN KEWANGAN MAHASISWA TAHUN 2014

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ABSTRAK

Konvensven Pembangunan diri dan Kewangan Mahasiswa Jabatan Perdagangan di adakan bagi memberi ruang kepada pakar mahir dan vang berkelayakan untuk berkongsi pengalaman dan ilmu mereka kepada mahasiswa. Bagi merealisaikan aspirasi berilmu sejajar mahasiswa dengan pelan transformasi politeknik secara khususnva dan negara amnya. Cabaran dalam menguruskan pembangunan diri serta kewangan menjadi suatu yang amat sukar dan mungkin akan tersasar jika tiada cukup pengetahuan dalam mengendalikannya. Maklumbalas ini dijalankan terhadap 200 orang pelajar yang mewakili 243 orang pelajar semester 6 vang menghadiri konvesven tersebut. Rekabentuk maklumbalas adalah bertujuan untuk mencari maklumat bagi mencapai sesuatu matlamat keberkesanan program dan menggunakan kaedah yang berbentuk soalan pasca latihan. Keputusan analisa skor min menunjukkan semua aspek yang dinilai berada dalam tahap yang tinggi. Responden telah memberikan maklum balas yang amat positif terutamanya bagi aspek keberkesanan program kepada pembangunan diri

mereka. Taburan skor min bagi keberkesanan aspek program mencatatkan skor min vang paling tinggi iaitu 4.7 berbanding dengan aspek lain. Dengan Ini dapatlah disimpulkan bahawa pelaksanaan konvensven ini memberi impak yang positif para pelajar kepada dan seharusnya dilaksanakan pada setiap tahun pengajian.

1.0 PENDAHULUAN

1.1 Pengenalan

Konvensyen Pembangunan diri dan Kewangan Mahasiswa Jabatan Perdagangan di adakan bagi memberi ruang kepada pakar vang mahir dan berkelayakan untuk berkongsi pengalaman dan ilmu mereka kepada mahasiswa. Badi merealisaikan aspirasi mahasiswa berilmu seiaiar dengan pelan transformasi politeknik secara khususnya dan negara amnya. Cabaran dalam menguruskan pembangunan diri serta kewangan menjadi suatu yang amat sukar dan mungkin akan tersasar jika tiada cukup pengetahuan dalam mengendalikannya.

Dengan demikian, di atas kesedaran, keinginan dan keazaman yang kuat untuk

menyedarkan mahasiswa untuk memperlengkapkan diri masingmasing sebagai persediaan untuk memburu kejayaan pada masa akan datang maka konvensven pembangunan diri dan kewangan akan dilaksanakan khas untuk mahasiswa.Selain daripada itu konvensven ini dapat melengkapkan persediaan diri mahasiswa lebih dengan kompeten dan mampu menguasai ilmu berkaitan pengurusan diri dan kewangan terutama selepas melangkah ke alam pekerjaan. Ia iuda dapat memperkukuhkan keresponsifan mahasiswa dan program pengajian terhadap keperluan, perkembangan serta isu-isu baharu dalam pengurusan diri dan kewangan khususnya bagi mahasiswa.

1.2 Penyataan Masalah

Pelajar merupakan kepada pelanggan sesebuah institusi dan pensyarah adalah dipertanggungjawabkan untuk menghasilkan pelajar vang berkualiti sejajar dengan misi, visi dan wawasan sesebuah institusi pendidikan tinggi termasuklah politeknik. Bagi memastikan ini tercapai salah satunya kaedah yang dilaksanakan adalah melalui iemputan pensyarah industri dimana tenaga pakar diperlukan bagi menyumbang idea untuk kegunaan pelaiar apabila tamat pengajian kelak.

Sehubungan dengan itu Jabatan Perdagangan, Politeknik Seberang perai telah mengambil inisiatif untuk mengadakan konvensyen pembangunan diri dan kewangan mahasiswa 2014 sebagai salah satu alternatif terbaik bagi percambahan ilmu dan maklumat kepada pelajar semester akhir oleh penceramah iemputan daripada pihak industri bagi kesediaan pelajar semester akhir apabila apabila tamat pengaijan kelak. Tuiuan maklumbalas ini adalah untuk melihat keberkesanan konvensyen pembangunan diri dan kewangan mahasiswa 2014 berdasarkan kepada instumen yang digunapakai dan tiga aspek dinilai iaitu penilaian penceramah, penilaian pelaksanaan kursus dan penilaian keberkesanan kursus terhadap peserta. Ketiga-tiga aspek ini amat penting bagi melihat sejauhmana konvensyen dapat memberi faedah kepada pelajar dan wajar diteruskan atau tidak dimasa akan datang.

1.3 Tujuan maklumbalas pelajar

Secara umumnva. tuiuan maklumbalas dijalankan ini adalah untuk melihat keberkesanan perlaksanaan konvensven Pembangunan diri dan Kewangan Mahasiswa tahun 2014. Maklumbalas ini akan menakaii dapatan daripada borang maklumbalas pasca latihan yang diedarkan kepada pelajar semester 6 yang terlibat dalam konvensven ini. Melalui maklumbalas ini. pensyarah dapat melihat aspek-aspek yang dinilai iaitu kandungan kursus disampaikan oleh vand penceramah, perancangan dan perlaksanaan program program, penilaian keberkesanan kursus terhadap peserta sendiri. Melalui maklumbalas ini pensyarah dapat melihat dengan lebih jelas jika terdapat kelemahan perlaksanaan ini dan konvensyen dapat dicadangkan untuk diberi penambahbaikan di peringkat

jabatan bagi penganjuran konvensyen akan datang.

1.4 Objektif maklumbalas pelajar

Bagi mencapai tujuan maklumbalas ini , beberapa objektif telah dikenal pasti. Antara objektif-objektif kajian adalah seperti berikut:

(i.) Meninjau maklumbalas tentang keberkesanan perlaksanaan konvensyen Pembangunan diri dan Kewangan Mahasiswa tahun 2014 dari aspek Penilaian Penceramah

maklumbalas (ii) Meninjau tentang keberkesanan perlaksanaan konvensven Pembangunan diri dan Kewangan Mahasiswa tahun 2014 dari aspek Penilaian Pelaksanaan Kursus

(iii) Meninjau maklumbalas tentang keberkesanan perlaksanaan Konvensven Pembangunan Diri Dan Kewangan Mahasiswa Tahun 2014 dari aspek Penilaian Keberkesanan Kursus Terhadap Peserta

1.5 Kepentingan maklumbalas pelajar

Terdapat beberapa kepentingan terhadap maklumbalas yang dijalankan ini iaitu terhadap jabatan perdagangan dan diri pelajar sendiri.

(i) Jabatan Perdagangan

Berdasarkan maklumbalas yang dibuat pihak Jabatan Perdagangan dapat mengenalpasti aspek yang perlu penekanan diberi dan penambabaikan seterusnya merancang program atau kaedah vang dapat menyumbang kepada peningkatan penganjuran konvensven dimasa akan ini datang.

(ii) Pelajar Politeknik

Melalui maklumbalas ini pelajar juga akan mendapat manfaat hasil daripada ceramah yang disampaikan bagi persediaan selepas tamat belajar dan pelajar juga dpat merancang kewangan pelajar dengan lebih teratur dan berhemah.

1.6 Skop maklumbalas pelajar

Maklumbalas ini dijalankan terhadap 200 orang pelajar yang mewakili 243 orang pelajar semester 6 yang menghadiri konvesven tersebut. Tinjauan maklumbalas ini hanya dilaksanakan di Jabatan yang tertumpu Perdagangan kepada pelajar semester akhir sahaia.

2.0 METODOLOGI

2.1 Pengenalan

Garis panduan yang digunakan untuk melaksanakan maklumbalas ini merangkumi rekabentuk maklumbalas, populasi dan sampel maklumbalas, instrument maklumbalas, tatacara pengumpulan data dan juga tatacara penganalisisan data.

2.2 Rekabentuk maklumbalas

Rekabentuk maklumbalas adalah bertujuan untuk mencari maklumat bagi mencapai sesuatu matlamat keberkesanan program. Dalam maklumbalas ini. pensyarah menggunakan kaedah berbentuk maklumbalas vang tinjauan yang menggunakan soalan pasca latihan. Pemilihan kaedah ini adalah kerana ia menjimatkan kos, masa dan tenaga kerja.

2.3 Populasi dan Sampel maklumbalas

Di dalam sesuatu penyelidikan pendidikan, mengenalpasti populasi merupakan pentina perkara kerana ia menentukan bidang masalah yang perlu dikaji serta sebanyak mana data dan maklumat vang perlu dikumpulkan. Sampel adalah menggambarkan keseluruhan populasi tersebut. Sesuatu penyelidikan yang menggunakan sampel memberi peluang kepada penyelidik bagi mendapatkan maklumat mengenai populasi dengan kos yang agak rendah.

Menurut Mohd. Majid Penggunaan (1990)sampel membolehkan data yang lebih terperinci diperolehi walaupun jumlah populasi yang rendah. Penggunaan seluruh individu dalam suatu populasi akan mengakibatkan tenaga, perbelanjaan dan masa yang lama bagi melaksanakan sesuatu penyelidikan. Bagi mengatasi masalah ini kaedah pensampelan digunakan untuk mendapatkan maklumat tanpa menggunakan keseluruhan populasi. Persampelan rawak merupakan pengambilan sampel dari populasi kajian bila mana setiap individu dalam populasi tersebut mempunyai peluang yang sama untuk dipilih. (Khalid, 2003). Populasi sasaran adalah terdiri daripada pelajar semester 6 di Jabatan Perdagangan, Politeknik Seberang Perai iaitu seramai 243 orang pelajar/ peserta terlibat dalam konvensven.

2.4 Instrumen Kajian

Instrumen yang digunakan di dalam maklumbalas ini adalah borang pasca latihan diadaptasikan vand daripada instrumen yang sedia ada digunapakai oleh Unit Latihan dan Pendidikan Laniutan Polieknik Seberang Perai yang diubahsuai mengikut keperluan konvensyen dan mengikut skala ukuran likert. Ini adalah kerana penggunaan skala likert mempunyai tahap pengukuran kebolehpercayaan vang tinggi iaitu 85% (Mohd Najib, 1999). Skala likert yang digunakan mempunyai lima (5) skala. Ukuran skala kekerapan vang digunakan adalah seperti di dalam Jadual 3.2 iaitu dari 1 (sangat tidak setuju), 2 (tidak setuju), 3 (kurang setuju), 4 (setuiu) sehingga (sangat 5 Pembahagian setuju). skor adalah seperti Jadual 2.1 berikut:

Jadual 2.1 : Skala Likert

Sk or	Pemberatan
1	sangat tidak setuju
2	tidak setuju
3	kurang setuju
4	setuju
5	sangat setuju

Borang pasca latihan yang digunakan dalam kajian ini mengandungi tiga bahagian seperti jadual 2.2 seperti di bawah iaitu:

Jadual 2.2 : Kandungan Soal Selidik

Bahagian A	Berkaitan dengan Penilaian Penceramah
Bahagian B	Berkaitan dengan Penilaian Pelaksanaan Program
Bahagian C	Berkaitan dengan Penilaian Keberkesanan kursus

2.5 Batasan maklumbalas

Maklumbalas ini tertumpu kepada para pelajar semester 6 di Jabatan Perdagangan, Politeknik Seberang Perai yang mengikuti konvensyen bagi Sesi Disember 2013. Borang pasca latihan yang diagihkan kemungkinan tidak dipulangkan kembali oleh para pelajar.

2.6 Tatacara Pengumpulan Data

Dalam maklumbalas ini, data dan maklumat diperolehi melalui borang pasca latihan yang diagihkan kepada para peserta pada slot berkaitan dan dikumpulkan selepas tamat slot tersebut.

2.7 Tatacara Penganalisisan Data

kaedah analisis Bagi data, data diperolehi daripada responden dan dapat memenuhi kehendak objektif maklumbalas. Sebarang masalah diselesaikan terlebih dahulu supaya tidak terdapat kekeliruan pada data di dalam analisis data seterusnya. Kemudian, maklumat atau data diasingkan dan disusun secara lebih sistematik bagi penganalisisan secara kuantitatif. Menurut Sekaran (1992) analisis data yang dibuat juga akan menghuraikan fenomena yang diperolehi hasil daripada dapatan maklumbalas. Seterusnya datadianalisis menggunakan data kaedah peratusan dan jadual perisian kekerapan dengan Statistical Package For Social Science 17.0 (SPSS).

Kajian ini dianalisis dengan skor min yang melibatkan min, sisihan piawai dan peratus kekerapan. Sisihan piawai mengukur serakan antara angka-angka di dalam sesuatu senarai data. Secara am, sisihan piawai yang kecil nilainya menunjukkan taburan senarai data itu lebih memusat. Data-data yang diperolehi dipersembahkan dalam bentuk peratusan dan kaedah analisis nilai skor min.

3.0 ANALISIS DATA MAKLUMBALAS

Analisis ini merupakan hasil maklumbalas responden terhadap elemen penilaian terhadap penceramah, pelaksanaan kursus dan keberkesanan kursus terhadap para peserta Konvensven Pembangunan Diri dan Kewangan Mahasiswa bagi tahun Hasil analisis ditunjukkan 2014. dalam bentuk peratusan dan min Min skor tertinggi setiap skor. penyataan ialah 5.0 manakala min skor terendah jalah 1.0 berdasarkan kepada skala 1.0 mewakili sangat tidak setuju, skala 2.0 mewakili tidak setuju, skala 3.0 mewakili kurang setuju, 4.0 mewakili setuju dan skala 5.0 mewakili sangat setuju. Dapatan dari analisa dirumuskan keputusannya berdasarkan kepada pengukuran yang diadaptasikan seperti vang ditunjukkan di dalam jadual 3.1 seperti berikut :

Jadual 3.1 : Skala Min Skor

Min Skor	Tahap
1.0 – 2.0	Rendah
2.1 – 3.0	Sederhana
3.1 – 4.0	Tinggi
4.1 – 5.0	Sangat tinggi

Jadual 3.2 : Analisis soalan berkaitan dengan Penilaian Penceramah.

No Soalan	Penyataan Soalan		Pei	ratusar	Min			
		STS	TS	KS	S	SS	Skor	Tahap
1	Kandungan kursus/ bengkel/ latihan yang sesuai	0	0	2	50	48	4.5	Sangat Tinggi
2	Penyampaian yang baik dan berkesan.	0	0	2	30	68	4.7	Sangat Tinggi
Min purata								Sangat Tinggi

Data menunjukkan responden atau para peserta konvensyen bersetuju bahawa penceramah telah menyampaikan kandungan kursus yang sesuai dan disampaikan dengan baik dan berkesan. Ia dikukuhkan lagi dengan capaian skor min pada tahap sangat tinggi iaitu 4.6.

Jadual 3.3 : Analisis soalan berkaitan dengan Penilaian Pelaksanaan Program.



Analisis menunjukkan responden bersetuju Program telah dilaksanakan diitempat yang kondusif, dirancang dan dilaksana dengan lancar serta masa yang diperuntukkan bagi setiap slot adalah bersesuaian. Keadaan ini ditunjukkan dengan capaian skor min pada tahap sangat tinggi iaitu 4.4.

Jadual 3.4 : Analisis soalan berkaitan dengan Penilaian Keberkesanan Kursus.

No Soalan	Penyataan Soalan		Per	Min				
		STS	TS	KS	S	SS	Skor	Tahap
6	Peningkatan pengetahuan/pema- haman berbanding sebelum ini.	0	0	1	37	62	4.6	Sangat Tinggi
7	Lebih berkeyakinan untuk mengaplikasi apa yang dipelajari berbanding sebelum ini	0	0	1	28	71	4.7	Sangat Tinggi
8	Membantu saya dalam merancang pengurusan kewangan dan pendedahan dalam laluan kerjaya saya.	0	1	23	18	58	4.7	Sangat Tinggi
9	Membantu saya dalam membina matlamat diri.	0	0	1	28	71	4.7	Sangat Tinggi
10	Membantu saya meningkatkan motivasi diri.	0	0	1	30	69	4.7	
Min purata								Sangat Tinggi

Data menunjukkan responden atau para peserta konvensyen bersetuju bahawa pelaksanaan konvensven memberi kesan vang signifikan pembangunan kepada diri mereka meningkatkan iaitu pengetahuan, berkeyakinan untuk mengaplikasikan apa yang telah dipelaiari, membantu merancang pengurusan kewangan dan pendedahan kerjaya, membina matlamat diri serta meningkatkan motivasi diri. menyampaikan kandungan kursus yang sesuai dan disampaikan dengan baik dan berkesan. Keadaan ini ditunjukkan dengan capaian skor min pada tahap sangat tinggi iaitu 4.7.

3.1 Rumusan

Daripada hasil analisis diialankan dapatlah vand disimpulkan bahawa para responden atau peserta telah memberikan maklum balas yang amat positif terutamanya bagi aspek keberkesanan program kepada pembangunan diri mereka. Ini kerana skor min bagi aspek keberkesanan program mencatatkan skor min yang paling tinggi berbanding dengan aspek lain. Ini menunjukkan pelaksanaan konvensven ini dapat memberi impak yang positif kepada para pelajar dan seharusnya dilaksanakan pada setiap semester.

4.0 PERBINCANGAN, KESIMPULAN DAN CADANGAN

4.1 Pengenalan

Bab ini akan menjurus kepada perbincanngan, cadagan dan kesimpulan setelah pengkaji melakukan analisis ke atas persoalan kajian vang dibina. Disamping itu, perbincangan akan cuba mengaitkan dengan hasilhasil maklumbalas yang telah dilakukan. Selain itu, pada akhir beberapa cadangan bab ini dikemukakan oleh pengkaji terhadap perkara yang dikaji. Beberapa cadangan yang dirasakan perlu dilakukan oleh pengkaji seterusnya vang berminat untuk mengkaji isu berhubuna dengan tahap keberkesanan kursus vang dijalankan. Cadangan ini diharap dapat memberi sedikit sebanyak garis panduan kepada pengkaji seterusnva bagi menjalankan kajian pada masa akan datang.

4.2 Perbincangan dan Kesimpulan

Secara amnya, kajian ini bertujuan untuk melihat tentang keberkesanan perlaksanaan konvensyen pembangunan diri dan kewangan mahasiswa tahun 2014 yang dijalankan ke atas pelajar semster akhir Jabatan Perdagangan, Politeknik Seberang Perai sesi Disember 2013. Aspek yang dikaji ialah penilaian penceramah, penilaian pelaksanaan kursus, penilaian keberkesanan kursus terhadap peserta.

4.2.1 Perbincangan dan Kesimpulan penilaian penceramah

Berdasarkan hasil maklumbalas pelajar bagi aspek penilaian penceramah, terdapat dua item telah dinilai dimana semua item

dalam aspek ini memperolehi skor min yang sangat tinggi iaitu bagi item kandungan kursus/ bengkel/ latihan yang sesuai dan item penyampaian yang baik dan berkesan. Hal ini dapatlah disimpulkan bahawa pelaiar amat berpuas hati dengan penyampaian oleh penceramah diiemput. Penvampaian vana yang baik dan berkesan dapat meningkatkan kefahaman pelajar seterusnya pelajar dapat mengadaptasikan setiap maklumat yang diperolehi dalam kehidupan seharian mereka apabila tamat pengajian kelak.

4.2.2 Perbincangan dan Kesimpulan Penilaian Pelaksanaan Program

dapatan Melalui kajian yang perolehi menerusi maklumbalas pelaiar bagi aspek penilaian pelaksanaan program, tiga item telah dinilai di mana semua item aspek ini memperolehi skor min vang sangat tinggi. Item suasana tempat kursus yang kondusif merujuk kepada tempat pelaksanaan konvensven dibuat dalam tersebut yang Dewan Kuliah Utama ,Politeknik Seberang Perai yang sangat selesa. Item perancangan dan pelaksanaan program telah dibuat dengan lancar dan masa yang diperuntukkan setiap slot adalah sesuai dengan merujuk perancangan program kepada vang dibuat oleh penyelaras konvensyen dan tempoh masa vang vang diperuntukan bagi setiap slot amat menepati keperluan pelajar dan penceramah.

4.2.3 Perbincangan dan KesimpulanPenilaian Keberkesanan Kursus.

Penemuan kajian terhadap aspek penilaian keberkesanan kursus bagi lima item yang dikaji, didapati skor min yang diperolehi sangat tinggi. Antara aspek yang dinilai adalah berkaitan peningkatan

pengetahuan/pemahaman

berbanding sebelum ini. Ini jelas menunjukkan bahawa pelajar sangat bersetuju bahawa input yang disampaikan oleh penceramah memberi amat manafaat kepada mereka dan mampu memberi sesuatu yang berbanding sebelum baru menghadiri konvensven ini. Selain daripada itu pelajar lebih berkeyakinan untuk mengaplikasi apa yang dipelajari berbanding sebelum ini menerusi aspek vang kedua.

Item yang ketiga hingga ke lima yang dinilai adalah berkaitan kemampuan pelaiar dalam merancang kewangan dan pendedahan dalam laluan kerjaya mereka. berkebolehan dalam membina matlamat diri dan mampu meningkatkan motivasi diri. hal ini jelas menunjukkan bahawa penganjuran konvensyen seumpama ini dapat memberi keyakinan kepada pelajar untuk meneruskan kehidupan dimasa hadapan.

4.3 Cadangan

Berdasarkan hasil dapatan dan perbincangan sebelumnya beberapa cadangan telah dikenalpasti. Berikut merupakan cadangan yang dikenalpasti boleh dicadangkan kepada pihak yang

berkepentingan terlibat dalam maklumbalas ini.

4.3.1 Jabatan Perdagangan

Walaupun semua tahap pencapaian berada ditahap yang sangat pihak tinggi, namun jabatan perlu memikirkan penambahan slot-slot vand bersesuaian dan relevan dengan keperluan pelajar. Dengan ini dicadangkan slot berkaitan melanjutkan pengajian di institusi pengajian tinggi dan perlu diberi penekanan. Ini dapat memberi pengetahuan dan pendedahan kepada pelajar jika mereka berminat untuk melanjutkan pengajian ke peringkat yang lebih tinggi.

Selain daripada itu dicadangkan agar konvensyen ini dibuka juga kepada semua pelajar semester akhir daripada jabatan lain kerana slot-slot yang di peruntukan dalam konvensyen ini amat bersesuaian dengan semua pelajar semester akhir di politeknik.

4.3.2 Unit Psikologi dan Kerjaya Politeknik

Berdasarkan maklumbalas peserta, adalah wajar program seumpama ini diteruskan dan dicadangkan agar pihak unit Psikologi dan Kerjaya Politeknik dapat menganjurkan program seumpama ini untuk kebaikan para pelajar terutama pelajar semester akhir di setiap jabatan induk di Politeknik seberang Perai.

4.4 Kesimpulan keseluruhan maklumbalas

Berdasarkan perbincangan yang telah diperjelaskan dan dapatan daripada maklumbalas pelajar bahawa dapatlah disimpulkan keberkesanan maklumbalas ini amat baik sekali dengan semua aspek vang dikaji memperolehi pencapaian yang amat tinggi. Ini jelas menunjukkan pelajar amat hati dan berpuas dapat membantu pelajar dalam merealisasikan yang di apa yang dipelajari dalam kehidupan mereka.

Berdasarkan maklumbalas ini juga dapat dinyatakan bahawa perlaksanaan konvensyen pembangunan diri dan kewangan mahasiswa ini amat memberi kesan yang sangat positif dan sangat bermanafaat kepada pelajar dan wajar diteruskan di masa-masa akan datang.

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