

KNOWLEDGE, ATTITUDE AND AWARENESS TOWARDS RESEARCH PRACTICE AMONG MALAYSIAN PREMIER POLYTECHNICS ACADEMICS

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ABSTRACT

Conducting research and implementing its findings is an important ongoing agenda to empower institutions of higher education in Malaysia. Despite ongoing efforts, the number of academics undertaking research activities in the technical and vocational higher education institutions namely, polytechnic education sector remains quite low. This study explored potential factors that may contribute to this situation namely, academics' levels of research knowledge, awareness, and attitudes towards research practice. A total of 317 of respondents were selected from the engineering and non-engineering academics in three polytechnics; the Sultan Ibrahim Polytechnic, Johor; the Ungku Omar Polytechnic, Perak and the Sultan Salahuddin Abdul Aziz Shah Polytechnic, Selangor. Data were analysed using descriptive and inferential statistical technique for determining average mean scores and differences between means. The data analyses results indicate that academics has high level of research knowledge, positive attitudes and high awareness level towards research practice in the polytechnics. Furthermore, no difference is found between engineering and non-engineering academics. It is concluded that awareness, attitude and knowledge of research practice could not explain the low participations in research practice.

Keywords: Knowledge, Attitude, Awareness, Research Practice, Premier Polytechnic

1 INTRODUCTION

Research is an exploratory activity typically conducted scientifically about a matter for specific purposes. The Malaysia Accounting Standard Board 4 (MASB 4) defines research as an original and planned investigation undertaking activities made to acquire knowledge and understanding of the scientific or technical. Abu Bakar and Mohamed (2013) defined research as a systematic process in collecting and analysing data or information for certain purposes.

In developed countries such as Japan and Korea where research findings are commercialized, this practice simultaneously propels their economic development. This practice has yet to be established in Malaysia, as most research findings in Higher Education are not commercialized and therefore not applicable in assisting the growth of the country (Mohamad Diah, 2014). Research by Hou (2011) states that only 3.2% of the research and development activities carried out at Malaysian higher education institutions and polytechnics, are commercialized. Jantan (2014) clarifies that research findings in Malaysia are kept as Master's Theses or in stored reports, meaning the findings are rarely distributed. Research findings are typically discussed only at the research stage of proceedings, or at seminars and conferences attended by certain groups.

Recent research claims that Institutional research activities are difficult to implement due to a lack of support and cooperation by academics (Ismail, 2010; Mohd Hasril & Alias, 2014). A factor contributing to this poor support is the lack of understanding that academics have in understanding how research could help them improve the quality of their work (Uk Raai, Alias & Mohd Hasril, 2014). Academics lack the initiative to initiate and improve their skills and knowledge about research in general (Jantan, 2014; Norasmah & Mohd Hasril, 2010). Jantan (2014) summarised the issues of conducting and reporting on research conducted at the Malaysian Polytechnic Institutions into three main areas namely, i) poor academic attitude towards research; ii) too many academic time constraints, and iii) poor understanding and lack of research knowledge. Based on Jantan's (2014) research findings, this paper reports on a survey conducted to assess academics' research knowledges, attitudes and awareness towards research practice at the Polytechnic Institutions.

2 METHODOLOGY

2.1 Populations and Samples

The participants of this study consisted of academics at the Premier Polytechnic which comprise Polytechnic Sultan Ibrahim, Johor, Polytechnic Ungku Omar, Perak, and Polytechnic Sultan Salahuddin Abdul Aziz Shah, Selangor. A total of 317 academics were selected from the Engineering department, and Non-engineering departments including the Business department. The study used a basic random sampling method because this method allowed all participants to engage with the survey (Abdul Ghafar, 1999), thereby reducing potential sampling errors (Konting, 1990).

2.2 Instrument

The data collection tool for this study used a quantitative survey in the form of a questionnaire. Sabitha, (2006) states that the survey is usually used to obtain information from participants or samples in crowded quantities. The content of this questionnaire covered four parts, namely: Part A - an item to find out personal information of participants in terms of demographics; Part B - an item to review the knowledge of academics in research practice; Part C - to study the attitude of academics towards research practice; and Part D - an item to assess the levels of academic awareness towards the importance of practicing research at the Polytechnic Premier.

The validity of the questionnaire was obtained by three experts who had proven expertise in their respective fields of research. The level of reliability was determined by using the interpretation range of values of Alpha's Cronbach between 0 to 1.0. According to Fraenkel and Wallen (1996), items can be accepted if the Alpha's Cronbach is generated above 0.6. The reliability of the entire questionnaire had a positive value of Alpha's Cronbach was accepted as shown below in Table 1:

Table 1: Items reliability test for the item results

Construct	Alpha values	Interpretation
Knowledge	.832	Good and acceptable
Attitude	.822	Good and acceptable
Awareness	.843	Good and acceptable

2.2 Data Analysis

A method of data analysis used in this study was a descriptive analysis of mean score and inferential analysis of Mann-Whitney U test. Data were analysed using computer software Statistical Package For the Social Science (SPSS) version 21.0.

3 RESULT

A total of 317 participants completed the questionnaire form. Of these 317 participants, a total of 109 were male (34%) and 208 female (66%). The data thereby showed a difference of 32% between the male and female responses. The 317 participants consist of 90 academics (28%) from Polytechnic Ungku Omar, 132 academics (42%) from Polytechnic Ibrahim Sultan, and 95 academics (30%) from Polytechnic Sultan Salahuddin Abdul Aziz Shah. The distribution of participants by department reported 133 (42%) from the Engineering Department, whilst there were 184 (58%) participants from the Non-Engineering Department. These figures show the difference between the Engineering and the Non-Engineering Departments at 16%.

3.1 Research Question 1: What are the Knowledge levels of Academics in Research Practice at the Premier Polytechnic?

The findings for the knowledge construct showed that the overall mean score for this item was 3.78 (standard deviation = 0.682). This score reflects that the knowledge of academics in research practices was high. Item B3 showed the highest mean score at 4.13 (standard deviation = 0.636) which confirmed that academics were aware of the benefits acquired in carrying out research. The lowest mean score of 3.29 (standard deviation = 0.862) was recorded from item B16 indicating that the academics were less knowledgeable in how to obtain funding to conduct research.

3.2 Research Question 2: What are the Attitudes of Academics in Research Practice at the Premier Polytechnic?

The findings for the attitude construct showed that the overall mean score for this item was 4.02 (standard deviation = 0.679). This score reflects that the academics' attitudes towards research practices were high. Item C5 showed the highest mean score value of 4.19 (standard deviation = 0.638), meaning that academics were interested in performing research. The lowest of mean score value of 3.30 (standard deviation = 0.869) was obtained from the item question C10 showing that academics more or less agree with the statement that "The constraints of time is not a problem to the academic to conduct research".

3.3 Research Question 3: What is the Level of Academics' Awareness in Research Practice at the Premier Polytechnic?

The findings for the awareness construct showed that overall of mean score for this item was 4.18 (standard deviation = 0.614). This figure shows that academics have a high level of awareness towards research practice. Item D12 recorded the highest mean score value of 4.37 (standard deviation = 0.551), meaning that academics are aware on how research can build theories and find out new knowledges. The lowest of mean score value of 3.76 (standard deviation = 0.790) was obtained from the item question D1 showing that academics more or less agree to the statement that "Research can improve the quality of their professionalism".

3.4 Research Question 4: Are there significant differences of Research Practice amongst Engineering and Non-Engineering Department Academics at the Premier Polytechnic?

The difference analysis was carried out to test the following hypothesis:

Ho1: There is no significant difference of research practice amongst Engineering and Non-Engineering Department academics at the Premier Polytechnic.

Normality tests using the Kolmogorov-Smirnov statistical test and the Shapiro-Wilks were carried out to ensure that the test used to analyse the data was appropriate to use for the statistical inference tests. The data obtained are reported as Table 2 below:

Table 2: Analysis test of normality for knowledge, attitude and awareness of academics in research practice

	<i>Kolmogorov-Smirnov(a)</i>			<i>Shapiro-Wilks</i>		
	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
Research Practice	.116	317	.000	.952	317	.000

The findings of the normality test using the Kolmogorov-Smirnov and Shapiro-Wilks showed readings of Sig. for both at .000, meaning that the data was not normally distributed. Therefore, the analysis of the Mann-Whitney U test was used to answer the hypothesis, and the data for the Mann-Whitney U test analysis are as follows:

Table 3: Mann-Whitney U test analysis

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Research Practice	11382.000	20293.000	-1.061	.289

The results show that the value of $z = -1.061$ with a significant level at .289. The findings also reflect that the value of $p (.289) > \alpha (.05)$. According to Chua (2006), if the levels are significantly greater than the value of $\alpha (.05)$, the hypothesis null (H_0) fails to reject, and there exist no significant difference of research practice between Engineering and Non-Engineering Department academics at the Premier Polytechnic.

4 DISCUSSION

4.1 Research Objective 1: Identify the Knowledge of Academics in Research Practice at the Premier Polytechnic

The result analysis of each element through the knowledge construct indicated that academics have a high knowledge level of research practice at the Premier Polytechnic Institutions. This may be accounted by a new scheme where one of the requirements for academics to be promoted is to carry out research (Abd Latif, 2012). This is consistent with Herzberg's theory which states that achievement, recognition and responsibility in the performance of any work is an extrinsic motivator (Mohd & Hassan, 2011).

The results confirming that academics have a high level of knowledge in research practice at the Premier Polytechnic, conflicts with Md. Jaafar (2006) research findings focusing on teachers. He noted that research activities were difficult to implement due to the lack of support, understanding and knowledge teachers held about the importance of research. Marimuthu (2010)

reported that whilst there were teachers who had been exposed to research knowledge, they lacked the experience in actually carrying out research activities.

The element that recorded the highest mean score referred to the knowledge academics had regarding the benefits in carrying out research. Research by Gorg and Gall (1986) reported a rationale contribution to the development of knowledge. This statement was also supported by Marimuthu (2010) who found that research can contribute to the development of knowledge. The discovery and development of knowledge allows the exploration into new fields and new technologies, subsequently impacting positively upon societal living standards.

The element that recorded the lowest mean score referred to the sources of funding for research. These findings clearly show that the academics at the Premier Polytechnic have less knowledge in getting funding for research. This coincided with the statement submitted by Md. Tahir et al. (2013) in which stated that in 2011, polytechnics only managed to get two funding for Fundamental Research Grant Scheme (FRGS) out of 22 applications submitted for research purposes. This statement proves that the source of the funding required to conduct research is quite difficult, in addition to the lack of knowledge of academics at the Premier Polytechnic to obtain the sources of financing.

Although only two sources of funding obtained from the 22 applications made on FRGS, however, Prime Minister of Malaysia, Najib Razak announced that the government had allocated RM1.3 billion to the Ministry of Science, Technology and Innovation (MOSTI) in Budget 2015 for the development of innovation and commercialization of research. This means that the provisions provided by the government are exclusively for research purposes. Although the provisions channelled to MOSTI, it does not mean that researchers at public higher education institutions and other research institutions which are not under MOSTI didn't get the provision. The academics under the auspices of the Ministry of Education will also get the benefit because the higher education institutions greatly contributed to the research and development activities in the country (Ahmad, 2014).

Overall, the researcher found that knowledge is a very important element in carrying out research. This knowledge can indirectly provide clear and concrete guidelines to researcher to conduct the investigation in accordance with appropriate standards. Furthermore, this knowledge can be used as encouragement for researchers to conduct research continuously.

4.2 Research Objective 2: Identify the Attitude of Academics in Research Practice at the Premier Polytechnic

Result analysis on each element through attitude construct recorded the mean score value on the high level of approval. This shows that the majority of participants agree that they have a positive attitude in research practice at the Premier Polytechnic. This may be caused by the influence of the social environment in polytechnic where one of the requirements that need to be fulfilled for the purpose of moved up in polytechnics is to carry out research. For example, a lecturer who does research on the purpose to move up will encourage other academics to do the

same. It can attract the academics to do research and develop a positive attitude towards research practice (Sayin, Ishak & Samuri, 2009).

According to Ismail et al. (1998) in his study, the research stated that a person's attitude toward something can be formed through a process of socialization. Agents of socialization are parents, family members, friends, teachers and others who are important to the individual. Hassan and Mohd (1997) also gave similar opinion that a person's attitude toward things is affected by what he/she learned and it is not because of inherited or natural. Thus, the academics at the Premier Polytechnic have a positive attitude towards research practice because of factors from the work environment itself in polytechnic. Under the academics' attitude towards research practice, elements that recorded the highest mean score value is the urge to perform the research. The findings of this analysis show that academics at the Premier Polytechnic have motivation or motivated to carry out research and making it as a practice or culture in polytechnics. This is because, according to Wallis et al. (2005), that states research is a motivator to lecturer in their career prospects.

In a study conducted by Md. Jaafar, (2006) against teachers found that teachers who conduct research argues that research can develop their professionalism, especially in additional of knowledge. This statement shows that research activities are capable to encourage academics to conduct research. This is strengthened by the statement given by Sayin et al. (2009) in his study among a lecturer at UiTM Shah Alam that most academics do research due to the encouragement of other academics as well as the realization that research activities is a responsibility that must be implemented by educators.

However, a study conducted by Mohd. Meerah et al. (2001) shows that the role of teachers as researchers often misunderstood by teachers. Misconceptions towards research ever voiced by Darling-Hammond (1985) by stating that most school teachers' misconceptions about their role in education research. The teachers believe that research is the task of the educational experts in teaching.

Elements that recorded the lowest mean score under the construct of academics attitude towards research practice is about time constraints for conducting research. These findings clearly show that the academics view that the constraints of time becomes a problem to carry out research. This is because, according Jantan (2014) on his study which was conducted at the Polytechnic Merlimau found that three major aspects of research activities among academics are due to the academics attitude, time constraints and research knowledge is superficial. This statement is supported by Mohd. Meerah et al. (2001) on his research; that workload and time factor is a barrier for teachers to do research.

Overall, the researcher found that elements of attitude are the main factors that could influence the academics to conduct research. Change of attitude of the academics towards the research practice is very important to achieve the national aspiration for making Malaysia as a premier hub for higher education through research activities.

4.3 Research Objective 3: Identify the Level of Academics Awareness in Research Practice at the Premier Polytechnic

Result analysis on each element through awareness construct recorded the mean score value on the high level of approval. This shows that the majority of participants agree that they have a high level of awareness on the importance of research practice at the Premier Polytechnic. The researcher believes that the level of awareness that exists in lectures about the importance of conducting research can influence them to do research in polytechnics. That means a correlation between element of awareness and the practice of research activity is available. However, according to Sulaiman, (2003) he argued that there was no relationship between awareness and practice of human behaviour. This finding is supported by Spears (2004) which stated that the practice and awareness would not affect each other. However, a study that was conducted by William et al. (2003); Norasmah and Mohd Hasril (2010) found out that there is a correlation between awareness and practice of human behaviour.

Under the construct of academics' awareness towards research practice, elements that recorded the highest mean score value is about the research finding manage to develop new theories and knowledge. According to Marimuthu, (2010) he stated that research is an activity to the expansion of knowledge, especially knowledge in the field of study and knowledge is spread among academics and students. In addition, the studies conducted by Md. Jaafar (2006) against teachers found that teachers who conduct research can develop their professionalism, especially in additional of knowledge. Furthermore, the research activities also can help the process of learning organizations to develop rapidly.

Elements that recorded the lowest mean score under construct of academics awareness towards research practice is about research activities can improve the quality of academics' professionalism. This is because many studies that have been conducted by experts on education research found that the research activities can impact the teacher professionalism development. Sironik and Goodlad (1998) found that research can enhance the level of professionalism in teaching. Research activity is able to improve teachers to be more reflective, enhance the skill to analyse problem solving and also be able to further strengthen the relationship between their colleagues (Thompson, 1992). In addition, according to Widdowson, (1984) research activities may enhance the job satisfaction.

Overall, the element of academics awareness towards the importance of research is a key pillar in research practice at the Premier Polytechnic. With the existing of this awareness in each lecturer, it is capable to motivate academics to do research. Furthermore, the importance in carrying out the research can be seen by the existence of the individual consciousness in the context of the importance of conducting research to either an institution, an organization or to the interests for the purpose of national development.

4.4 Research Objective 4: Identify the differences of Research Practice among the Academics between Engineering Department and Non-Engineering Department at the Premier Polytechnic

Although the overall of research practice among the academics at the Premier Polytechnic had a high mean score, the significant differences in the research practice among the academics between Engineering Department and Non-Engineering Department at the Premier Polytechnic was further investigated. Hence, researcher had conducted inferential analysis by Mann-Whitney U test against the study constructs involved. As a result, there were no significant difference of research practice among the academics between Engineering Department and Non-Engineering Department at the Premier Polytechnic.

However, according to the research findings from Dundar and Lewis, (1998) they found that the individual traits, institutional and departmental characteristics, and working environment can affect the productivity of research. However, a study conducted by Abd Latif (2012) concerning the interests of academics in scientific research activities at Kolej Antarabangsa IKIP, Kuantan, Pahang is different than Dundar and Lewis (1998). Abd Latif (2012) found that, there was no significant difference in the level of interest among academics in research activities in interdepartmental that are available in the institution. Based on the findings research, researcher showed that the finding is consistent with the findings of Abd Latif (2012) that there is no significant difference of research practice among the academics between Engineering Department and Non-Engineering Department at the Premier Polytechnic.

5 CONCLUSION

Overall, the researcher found that the study managed to answer all the research questions. Through descriptive statistical analysis, it shows that the knowledge, attitude and awareness of lectures in research practice at the Premier Polytechnic are high. In view of the differences of research practice among the academics between Engineering Department and Non-Engineering Department, inference analysis found that there is no significant difference of research practice among the academics between both departments at the Premier Polytechnic. As a conclusion, this study can provide a significant contribution to the ministry, universities and academics in efforts towards practicing research. Future researchers are expected to further this research and do improvements to overcome existing shortcomings.

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