

TECHNICAL POLYTECHNIC LECTURERS' PARTICIPATION IN EXERCISING INNOVATION IN ENHANCING LEARNING AND TEACHING

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ABSTRACT: *Technical Polytechnic Lecturers' involvement in implementing innovations to improve learning and teaching is important to examine the level of motivation and technology facilities in educational institutions. This study was done to determine the levels of Polytechnic of Sultan Abdul Halim Mu'adzam Shah (POLIMAS) lecturers' motivation and involvement in T&L innovation training. The sample consisted of 186 lecturers from five departments at POLIMAS. Questionnaires were used to obtain the required data. Data were analysed using Statistical Package for the Social Sciences (SPSS) to obtain mean, standard deviation and correlation testing. Results showed that the level of POLIMAS lecturers' motivation to participate in T&L training innovation is high by the construct of motivation. The respondents view T&L facilities as adequate enough to facilitate the implementation of innovation in T&L and strengthen the implementation of innovative teaching using the medium of teaching content to students. The hypothesis tested showed no significant value in term of the relationship between the variables. However, the correlation suggests a relationship between the two variables although it is not significant because the relation obtained is rather weak. This finding indicates a relatively weak correlation between motivated lecturers to facilitate the implementation of innovation in T&L. Overall, training and development of innovation should be implemented in teaching and learning to help improve the skills of teachers and promote innovation in education. The results show that the overall level of the lecturers' motivation against the use of innovation in T&L at POLIMAS is high ($M = 3.90$, $SD = 0.51$ infusion) according to the overall motivational constructs. In the opinion of respondents on the T&L facility in facilitating the implementation of innovation in order to strengthen T&L teaching by using the implementation of innovation as a medium of teaching for the students to fill in the delivery was moderate ($M = 3.37$, $SD = 0.80$). However, the correlation value shows a relationship between the variables although it is an insignificant one or a weak relationship. This result shows that there is a rather weak relationship between lecturers' motivation and the implementation of innovation in T&L with the correlation coefficient value of $r = 0.142$.*

Keywords: Lecturers' involvement, motivation, innovation facility.

1. INTRODUCTION

Innovation is one of the main agenda of the Malaysia to carry out the transformation in the education system with the aims to improve the quality of world-class education and obtain the World Class Education status. Therefore, the responsibility of creating innovation in T&L is a matter of great importance in shaping and creating an innovative education system [16]. Nonetheless, this requires a highly skilled teaching staff who can handle technology and play an important role in shaping innovative education, especially lecturers in institutions of higher learning. This is supported by Buntat and Ahmad [4] who stated that professional lecturers should not only encourage innovation in education but also able to make new changes using innovative technology in the teaching methods to help improve students' learning. Innovation in T&L involves a more creative use of new methods that may help lecturers achieve their teaching objectives. This is in line with the content of the Education Development Master Plan (PIPP), in which the Ministry of Education emphasises development of human capital in a creative and innovative way to meet the country's needs in the 21st century [14]. Direction transformation polytechnic states that "In the past, we have been successful in transforming the economy from agriculture to industrial; now, we will shift to a new economic model based on innovation, creativity and high value added [12]. In addition, the Ministry of Education [15] highlighted that this innovation would not be attained without creativity and innovation in the implementation of the education system reform based on the current needs. This

is because innovation is needed not only in technology but in all fields including education, especially in science and application of innovation in teaching. This study was designed to determine Polytechnic of Sultan Abdul Halim Mu'adzam Shah (POLIMAS) lecturers' level of motivation in relation to the use of innovation in T&L to identify the level of T&L facilities in the implementation of innovation and identify the relationships between lecturers' motivation to facilitate the implementation of innovation.

2. LITERATURE REVIEW

Information and communication technology (ICT) has been applied in the teaching and learning in institutions of higher learning. However, it is not fully or properly applied because the lecturers lacked the necessary relevant skills to implement in their teaching T&L. Transformation was launched to improve the educational system in polytechnic in developing the programmes for certain niche areas, as well as knowledgeable and highly skilled instructors and staff with excellent image and culture [12]. The era of information technology has brought a lot of transformations in education around the world, including Malaysia. Transformation Roadmap Polytechnic in Malaysia has strengthen the role of polytechnics in the field of education and training. The four core areas in the Roadmap Transformation Polytechnic [13], are:(1) strengthening polytechnics as an option that is comparable to other public universities, (2) development of programmes and research in niche areas representing the strengths of each polytechnic, (3) empowering people in

polytechnic with the knowledge and high skills, and (4) building image culture and excellent work. At the same time, the implementation of innovations has encountered several obstacles, particularly because of the fear that lecturers have difficulty changing their (existing) practices to new practices. According to Talip [27], technophobia is a psychological term that refers to a lecturer who does not believe that he or she is in control of the means of computer and telecommunications technology. Thus, aspects of these commitments will affect the perception of lecturers to innovate and this will lead to changes in their attitude and behaviour when carrying out T&L [18]. For example, lecturers from different demographic backgrounds and differences in their capacity and capability (such as motivation, attitudes, knowledge and skills) will determine their level of preparedness to implement innovation. Motivated lecturers would be competitive, creative and positive in executing the task. Meanwhile, lecturers with low level of motivation would more likely oppose the implementation of any innovation. This is because having low self-esteem and being satisfied or contented with what they have experienced might cause them to not require any changes as they do not feel confident enough to make any changes [17].

Innovation education reform intends to form ideas, practices or materials that could be used in education to make it better and more useful than the previous one [9]. Among the importance of the development of innovations is that it can make teaching more interesting and easier to understand [20]. Among the materials that undergo the process of innovation to improve the understanding are power points which make videos and animated presentations more interesting [10]. This can indirectly help educators to explore their potential in diversifying the teaching skills with more innovative aid in ICT [23]. With the diversity of innovation oriented teaching technique, educators' level of confidence in the field of education can be increased so as to compete at the international level [10]. Educators who are equipped with advanced teaching techniques and innovations are said to have a high level of professionalism as they attempt to solve problems in teaching methods, etc. There are three types of motivation; intrinsic motivation, extrinsic motivation and self regulation. Intrinsic motivation is an inner drive that is born in a person and it is a major driving force for doing things in his own interest or for self reward [8]. Extrinsic motivation comes from external impetus that is shaped like giving gifts, punishment, intimidation, directions, rewards and recognition [26]. Self-regulation refers to individual's ability to assess internal situation, instinct and resources that exist in themselves; self-regulation is divided into five, namely, self-control, trustworthiness, responsibility and innovation can be adapted [2]. The involvement of lecturers in training innovation is increasingly required by the education system of any developing country. Previous studies indicate that lecturer who has been in charge, less benefit than lecturers serving in category 9 years old and younger. Success is resulting from the lecturers' work experience, and this shows two possibilities, i.e. either in-service training is not comparable to their experience or because of teachers' burn out [3]. Lecturers who experienced burn out do not affect

anything although they are given a good workout. Lecturers experiencing this phenomenon need greater motivation compared to other factors. For the in-service training, lecturers should be provided with appropriate training to help them deliver lessons more effectively and meet the requirements of the curriculum [25]. In raising the achievement of quality education, the use of TMA tech is crucial in ensuring successful process of T&L in delivering lectures. This statement is supported by Ahmad [1], in accordance with the reality of the world of education that requires creativity and innovation among educators to facilitate knowledge-giving process. The use of ABM technology in classrooms is aimed to increase ease of understanding among students and for a better understanding or so that learning will more effective. Rahman [22] states that since the early 1950's, a variety of educational technology tools have been used in P&P in schools in Malaysia.

Thus, studies on lecturers' involvement in carrying out training and innovation in teaching and learning listed above and some works done by previous researchers have proven that all the factors or dimensions indeed gave positive impacts on students' learning. The findings of this research will benefit lecturers in implementing innovations in training and learning. In particular, lecturers will begin attending training on innovation in order to equip themselves with the necessary skills so that they could change their classroom atmosphere to be appropriate for the present technological development for their students. Lecturers will be more enthusiastic and confident in implementing and encouraging innovations in teaching their students so as to diversify their understanding of patterns. It also helps to diversify lecturers' teaching techniques to make them efficient and be able to attract students to use technology.

3. METHODOLOGY

This study uses a quantitative approach involving a review for test and answer questions. The purpose of this study was to identify the level of motivation and involvement of Technical Polytechnic lecturers in facilitating training and innovation T&L in POLIMAS. This study was also done to gauge the respondents views and perceptions on the implementation of innovation in T&L in educational institutions. A survey was used to explore the relationship between the variables or in rule clarification. This study also aimed to determine the positive relationship between lecturers' level of motivation and the implementation of innovation in T&L. This method was chosen because it could gauge and highlight issues and problems in relation to the implementation of innovation in T&L.

3.1 The Population and Sample

The study population comprised of all lecturers in POLIMAS. A total of 328 lecturers POLIMAS were identified for the purpose of this research work. Rational selection of the Polytechnic lecturers was done to meet all demands, needs and wishes, with a total of 328 POLIMAS lecturers chosen for the current study. Overall respondents teach in each department. They are lecturers who have teaching experiences in the laboratory and lecture rooms. The

respondents were expected to answer the review questions. Based on the calculation of Cochran [5], the required sample size comprised of 186 respondents from various programmes who were selected through sampling stratum [6]. Based on the calculation, the sample size was drawn for lecturers from a variety of department (see Table 1). Researchers distributed a questionnaire survey to 200 participants, although according to [6], only 180 respondents were the minimum number required., but educators get proceeds of 186 questionnaires and respondents consider whole to undertake.

Table 1 : Number of respondents according to department

Departments at POLIMAS	Population	Respondents involved	Sample
Department of Electrical & Electronic Engineering (JKE)	84	46	180
Department of Civil Engineering (JKA)	115	63	
Department of Trade (JP)	59	32	
Department of Mathematics, Science and Computer (JMSK)	29	16	
Department of General Studies (JPA)	41	23	

3.2 Research Instrument

In this study, researchers chose to use questionnaire to obtain the feedback or data from the respondents. Likert scale is used because it is a composite measure of scale that contains two or more items aimed at evaluating variables. This study used a set of questionnaire comprising five (5) parts to assess the lecturers’ level of motivation against the use of innovation in T&L at POLIMAS and the T&L facilities in helping the implementation of innovation in T&L POLIMAS.

3.3 Data Analysis

The data obtained were analysed according to their order in the questionnaire. The researchers reviewed and examined the raw data. Data were analysed using SPSS software. A summary of the analysis based on the research questions and hypotheses of the study is given in Table 2 below.

Table 2: Analytical methods for answering research questions

No	Research Questions	Analytical Methods
1.	How far the level of motivation POLIMAS lecturer against the use of innovation in T&L	Mean Score Standard deviation
2.	How far the level of facilities T&L to assist the implementation of innovation in T&L ?	Mean Score Standard deviation
3.	Is there any significant relationship between lecturers’ motivation and the implementation of innovation in T&L ?	Test Correlation <i>Pearson</i>

4 RESULT

A total of 186 questionnaires were distributed to lecturers at POLIMAS. Distribution of the respondents by gender is given in Table 3 below.

Table 3: Distribution of the respondents based on gender

Gender	Frequency (f)	Percentage (%)
Male	79	42.5
Female	107	57.5
Total	186	100

While respondents from various departments in successfully obtained by calculation POLIMAS used in determining the amount of the respondent involved. In this study, the

normality method was run to see the most recent data collected were scattered normally or not. As such, between normality test that can be used is the Skewness and Kurtosis and a graph of Q-Q plot.

Table 3.2: Test Normality "Skewness and Kurtosis"

Normality	Skewness	Kurtosis
Motivation	-.340	1.038
Importance of facilities	.129	-.465

Table 3 shows the analysis for min score and standard deviation respondents to all three constructs of motivation as a whole. Here, it can be deduced that intrinsic motivation has the highest value (M = 4.15, SD = 0.50), indicating the inner compulsion is important for the lecturers. This is followed by self regulation, with motivation as the second highest value (M = 3.94, SD = 0.54). Meanwhile, the min score value and the lowest eminent deviation was obtained for extrinsic motivation, viz. (M = 3.62, SD = 0.77). This finding shows the existence of intrinsic motivation, extrinsic motivation and self regulation is important in pushing the respondents to use technology innovation in T&L to improve the quality of their teaching.

Table 2.1: Overall motivations

No	Motivation Construct	Mean (M)	Standard deviation (SD)	Interpretation
1.	Intrinsic Motivation	4.15	0.50	High
2.	Extrinsic Motivation	3.62	0.77	High
3.	Self-Regulation	3.94	0.54	High
	Total	3.90	0.51	High

The results show that the overall level of the lecturers’ motivation against the use of innovation in T&L at POLIMAS is high (M = 3.90, SD = 0.51 infusion). According to the overall motivational constructs. In the opinion of respondents on the T&L facility in facilitating the implementation of innovation in order to strengthen T&L teaching by using the implementation of innovation as a medium of teaching for the students to fill in the delivery was moderate (M = RM3.37, SD = 0.80). While the hypothesis showed significant value did not exist. However, the correlation value shows a relationship between the variables although it is an insignificant one or a weak relationship. This result shows that there is a rather weak relationship between lecturers’ motivation and the implementation of innovation in T&L with the correlation coefficient value of r = 0.142. Based on Guilford [28], a significant value is p = 0.053, which is greater than 0.01 level; hence, this shows that there is a relationship between the variables. However, the correlation value r = 0.142 shows a significant relationship between the lecturers’ level of motivation and the implementation of innovation in T&L. Therefore, the null hypothesis (Ho) is rejected.

5 FINDINGS AND DISCUSSION

Results derived from the analysis of data are discussed in this section. This study was done to determine lecturers’ level of motivation against their use of innovation in T&L at POLIMAS and the level of facilities provided to assist the

implementation of T&L in innovation. This work also investigated the relationship between lecturers' motivation and the implementation of innovation in T&L.

5.1 POLIMAS Lecturers' Level of Motivation and Their Use of Innovation in T&L

The results showed that the respondents agreed and were eager to do their job by implementing the T&L technology. This finding is supported by the study of Gorozidis and Papaioannou [7], which reported that lecturers' motivation is one of the most important determinants of a success implementation of innovation in education. Overall intrinsic motivation, namely, encouragement found among POLIMAS lecturers was high. The level of intrinsic motivation indicates that there is internal motivation which drives the implementation of innovation by lecturers. This is in line with the self-determination theory (SDT), in which intrinsic motivation refers to personal involvement in activities and the satisfaction derived from it without any external factor or any payment and pressure. It is very important for a lecturer who is determined to engage in innovation. Motivation in individual self exists naturally and it is the internal stimulus that drives a person to do something on his or her own willingness. This similar view is also stated by Newby [21] who refers to intrinsic motivation as the internal motivation and enthusiasm to do something. Therefore, if an individual is trying to get excellent result, he or she will strive hard to achieve it. Meanwhile, the outcome level of motivation among the lecturers is the extrinsic properties that stand at a high level. Therefore, external motivation has influences on the areas of growth, development, learning and achievement of a person to achieve a goal. In addition, the level of motivation of self regulation is high, especially in the selection of teaching aids based on training innovation. Ariffin [2] also stated that self regulation is a person's ability to assess internal condition instinctively, and resources that exist in oneself such as self control, reliability, responsibility, adjustability and innovativeness. These show that motivation exists when a person is determined to change or succeed in achieving something in his or her life to improve himself or herself. According to a research by Talip [27], when an individual wants to motivate himself to get high performance, commitment to the task and being optimistic or interested in doing it would drive that person to strive to get it.

5.2 Level of facilities in T&L in helping the implementation of innovation in T&L

Overall, the findings indicate that the facilities provided for the implementation of innovation T&L in T&L are moderate. This result shows that the implementation of innovation in T&L provide beneficial effects to strengthen teaching. This is in line with the research by Muhamed [19], which states that the present-day education around the world requires creativity and the use of technology in classrooms TMA aimed at easing the process and increasing students' level of understanding or for a better understanding of something. In addition, facilities such as the internet to find additional references or resources strengthen the implementation of innovation in teaching, which are currently used to facilitate T&L sessions in polytechnics. This is also in line with the research Saat [24], which states that the internet in learning is important to improve computer skills that enable lecturers to

teach using the latest technology and obtain the quality of learning excellence in implementing innovation changes in the educational system. Complete innovation facilities can help implement learning innovation at institutions of higher learning. Therefore, the provision of these facilities should be improved in order to form an innovative education system that is comparable with other developed countries, especially in the provision of ICT facilities that have grown from time to time.

5.3 Significant relationship between motivated lecturers and facilities provided for the implementation of innovation in T&L

The results show that there is no relationship. However, the significant correlation indicates a rather weak relationship. This result shows that there is a weak relationship between motivated lecturers and the implementation of innovation in T&L. This goes to indicate that the level of motivation should also be accompanied by facilities, apart from having sufficient skills and equipment so that the implementation of innovation can be done effectively in the future. This finding is similar to that of a study by a university in collaboration with the State Education Department in 2009 in 100 schools in Larut, Matang and Selama. The study found that the implementation of innovation in education could produce impressive results. This is also explained in a study by the Ministry of Education [15] which revealed that the current education system could be improved using technology-based learning methods, with the provision of adequate equipment in the effort to improve the educational system from time to time and with the help of educational experts from all over the world. Thus, in order to improve motivation among lecturers, training should be conducted so that innovation could be imparted in our education system, in line with the needs of the future generation. This is important because students in the next generation have been extensively exposed to a variety of technologies.

6 CONCLUSION

The current study was carried out to determine the involvement of lecturers at Polytechnic of Sultan Abdul Halim Mua'dzam Shah in carrying out training innovation to improve learning and teaching excited about doing work using technology in The findings of the study showed that each of the constructs of motivation level is high based on the intrinsic motivation more comfortable doing lectures without any stress and get satisfaction without expecting money from any party. As extrinsic motivation is high, it reflects that the lecturers are committed in conducting their duties and motivated to become excellent employees. In addition, self regulation is also high because the lecturers are to change their teaching methods by selecting the teaching aids based on training innovation. Overall, the level of motivation is high and the lecturers are highly-motivated in implementing innovation to improve the level of facilities in T&L. T&L is a simple level and this means the provision of these facilities should be enhanced so as to obtain an innovative education system that is comparable with that of other developed countries, particularly in the provision of ICT facilities that have grown from currently. The relationship between motivation lecturer with significant ties show there but

correlation shows that there are a rather weak relationship. This result shows that there is a rather weak relationship between motivated lecturers and the implementation of innovation in T&L because a high level of motivation requires sufficient skills and facilities to carry out innovation in T&L.

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