

Attitude of Institute of Teacher Education Malaysia Lecturers towards Digital Innovation

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Abstract

This study aims to identify the level of attitude of lecturers from the Institute of Teacher Education, Ministry of Education Malaysia (IPG) towards Digital Innovation and its differences based on the field of teaching. A total of 1662 lecturers from 29 campuses of the Institute of Teacher Education in Malaysia participated in this study. The findings of this study indicate that the level of attitude of lecturers towards digital innovation as a whole is high. In addition, this study also found that there are significant differences in lecturers' attitudes towards digital innovation based on the field of teaching. Based on the findings, lecturers from research and STEM fields are more likely to be exposed to digital innovation and the use of the latest digital technologies in teaching and learning (T&L) as well as performing duties in their respective departments. Work commitments of lecturers in the teaching field encourage them to be motivated and innovative with digital innovation.

Keywords: Attitude, Digital Innovation.

Introduction

The outbreak of Covid-19 has greatly changed Malaysia's national paradigm from the context of national management, economy, control of movements and social activities of the citizens, and also the process of teaching and learning. The Ministry of Education Malaysia has introduced alternatives to pursue the continuity of education for academic institutes, namely schools, matriculation centres, and teacher education institutes by proposing online learning. This is relevant as information and communication technology (ICT) is rapidly embraced in all fields. The elements of ICT are widely applied in schools to adapt to the new norms of teaching and learning due to the Covid-19 pandemic. The interaction process during teaching and learning (T&L) between teachers and students transpires synchronously online in the form of video and virtual presentations by employing various elements of digital technologies (Shafie, 2020). The adaptation has not only indirectly changed the way human interacts but have also directly increased the use of digital technologies as well as the development of technology and innovation.

Educators, especially lecturers at the Institute of Teacher Education Malaysia (IPG) have adapted to the teaching methods parallel with the new norms of T&L due to the pandemic by embracing the rapid development of technology and producing educators who are creative and innovative (Aliza & Rosseni, 2020).

Literature Review

As early as 2010, several initiatives have been introduced in the efforts to boost innovation and digital technology in Malaysia. The year 2010 was named Creativity and Innovation year, and 2012 was known as Science and National Innovation Movement year. Thus, the terms innovation, creativity and technology in education are closely associated with educators that persistently review and remodel the teaching and learning design, assessments and evaluations, revise content delivery and work transformation through the use of technology for enhancing the education ecosystem, and improving the achievement of student learning outcomes. Notably, educators were swift in transforming the overall education landscape into online-based learning in accommodating

the new norms of the Covid-19 pandemic. This change specifically involves the attitude of educators that shift to be more creative in playing the role of an education engineer by exploring innovations and producing learning applications that can be accessed by students virtually (Zahiah & Abdul Razaq, 2010). The Global Innovation Index (2020) envisages the innovations resulting from the Covid-19 pandemic to be a catalyst for the process of reviving the world's work culture and economy. This process is deemed successful with change in the attitude of educators as an agent of change.

Methodology

A total of 1662 lecturers from 29 Institute of Teacher Education Malaysia (IPG) campuses nationwide were selected at random as the respondents of this research. Questionnaires comprising relevant items are used to measure the level of attitude of lecturers from the Institute of Teacher Education Malaysia towards digital innovation and the differences in the level of competence of IPG lecturers' attitudes towards digital innovation based on the field of teaching. This research instrument with a five-point Likert scale was used. The overall Cronbach's alpha value for this instrument is .965. In addition, the instrument was checked for face validity and content validity by five experts. The data collected were analyzed using Statistical Package for Social Science (SPSS) version 23. This study uses the interpretation of the mean score adapted from Ghazali and Sufean (2018) to the level of attitude of IPG lecturers towards digital innovation. Meanwhile, one-way Anova analysis was used to identify differences in the level of competence of lecturers' attitude towards digital innovation based on the field of teaching. Before the Anova analysis was conducted, the researchers also ensured that some conditions were complied with such as the distribution of study data was normal.

Results and Discussion

Descriptive analysis in this research involves the findings of mean values and standard deviations for the component IPG lecturers' attitude towards digital innovation. Next, inferential analysis involves the findings of one-way Anova analysis to identify differences in the level of

competence of lecturers' attitude towards digital innovation based on the field of teaching. The results of the analysis are discussed as follows:

i) First Objective

To identify the level of attitude of Institute of Teacher Education Malaysia (IPG) lecturers towards digital innovation.

Table 1 displays the mean values and standard deviations, which are the findings derived from the respondents' feedback on the component of lecturers' attitude towards digital innovation based on several statements.

Table 1. Mean Score and Standard Deviation of Lecturers' Attitude Towards Digital Innovation

Lecturers' Attitude Towards Digital Innovation	Mean	Std. Deviation
Prefers to add knowledge in the field of digital innovation	4.38	0.64
Prefers to improve skills in the field of digital innovation	4.36	0.65
Prefers to apply digital innovation products in T&LP	4.29	0.67
Prefers to produce digital innovation projects as a group	4.10	0.81
Prefers to modify existing digital innovation products to something better	4.07	0.79
Confident to share the results of the innovation with others	4.03	0.82
Confident that the digital innovation products produced can solve problems in teaching and learning	4.03	0.81
Inclined to produce digital	3.83	0.87

innovation projects		
Overall	4.08	0.80

Table 1 shows the detailed findings of the study on the level of attitude of IPG lecturers towards digital innovation. Overall, the level of attitude of IPG lecturers towards digital innovation is high (average mean = 4.08). This means that, generally, perspectives, views and opinions expressed by the lecturers to implement practices or behaviour in digital innovation are positive. However, there are two (2) attitude items that are below the average mean with a moderately high level, namely: (i) Inclined to produce innovation projects, and (ii) a sense of ease in producing digital innovation projects. Both of these attitude items depict that the lecturers should be always motivated and encouraged to be driven and passionate to produce digital innovation. Therefore, it is suggested that in addition to training and exposure on producing digital innovation, encouragement and support from various parties, especially the top management of the Institute of Teacher Education Malaysia should be rendered so that lecturers are motivated and passionate to produce digital innovation.

i) Second Objective

To identify differences in the level of competence of lecturers' attitude in digital innovation based on the teaching field.

Research hypothesis of the second objective is as follows:

Ho1: There is no difference in lecturers' attitude towards digital innovation based on the teaching field.

To identify the differences between the dimensions of the variables on demographics, Anova analysis was used. The research analysis presented in this section is pertaining to the differences in the attitude of IPG lecturers towards digital innovation based on the field of teaching. The results of the analysis are as in Tables 2 and 3.

Table 2. Mean and standard deviation of lecturers' attitude towards digital innovation based on the field of teaching

Field	N	Mean	Std. Deviation
Research	9	4.46	0.50
STEM	258	4.18	0.69
Social Sciences	160	4.15	0.58
Islamic Studies	211	4.09	0.63
Others	100	4.07	0.71
Sports Science Co-curriculum	162	4.07	0.57
Holistic	381	4.02	0.65
Language	381	4.01	0.65

Table 2 displays the mean score of attitudes of IPG lecturers towards digital innovation based on the teaching field. The data analyzed show that lecturers in the field of Research (Mean = 4.46) have a higher mean score of attitudes compared to STEM (Mean = 4.18), Social Science (Mean = 4.15), and Islamic Education (Mean = 4.09). Among the low mean scores for attitudes are holistic field lecturers (M = 4.02) and language field lecturers with mean score = 4.01. Significant differences in mean values were shown using one -way Anova test. The results of the Levene test showed that each group of fields compared have the same variance with $F(7, 1654) = 1.394, p > .05$. This indicates that a one -way Anova test can be used.

Table 3. Anova analysis of differences in lecturers' attitude towards digital innovation based on the field of teaching

	Effect	
	In groups	Between Groups
SS	7.655	690.902
df	7	1654
MS	1.094	.418
f	2.618	
Sig (p)	.011	

significant at the $p < .05$ level

Table 3 shows the results of one -way Anova test analysis. It was found that there was a significant difference in knowledge based on field with a value of $F(7,1654) = 2.618, p < .05$. This indicates the null hypothesis (Ho1) is rejected. The results show that the significance level of 0.011 is smaller than the significance value of 0.05 ($p < 0.05$). It can be concluded that there is a significant difference between lecturers' attitude towards digital innovation based on the field of teaching specialization.

Lecturers' attitude towards innovation reflects the perspectives and views of Institute of Teacher Education Malaysia's lecturers to implement practices or behaviours in the field of digital innovation. The findings of this study show that the level of lecturers' attitude towards innovation varies according to the field of teaching. Lecturers in the research field have the highest level of attitude towards digital innovation, followed by STEM and social sciences. Lecturers in the language field and the holistic field have the lowest level of attitude towards innovation.

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Conclusion

Lecturers are educators of teachers and become role models to students in adapting innovations in teaching and learning. In tandem with the digitization of the education system, lecturers need to be on their toes to create a fun, interactive, and effective learning environment with digital technological innovations. In order to facilitate lecturers to master digital innovation, training is required in the form of reskilling and upskilling to ensure lecturers have a positive mindset and attitude towards the application of digital innovation in teaching and learning.

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