


Research Article

TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE OF ISLAMIC EDUCATION TEACHERS IN KANGAR DISTRICT PRIMARY SCHOOL

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Abstract: *The most crucial goal in line with how the digital world is changing is the seventh shift for Malaysian Education Development Plan which designed for use of ICT to improve learning quality. Teachers as the main driving force of this phase need to emphasize technological knowledge in parallel with pedagogical skills as well as mastery of content in professionalism. Thus, the Framework of Technological Pedagogical Content Knowledge (TPACK) is the main idea which able to guide the teacher to ensure the carrying of these elements in the teaching is successfully applied well. In this context, differences in knowledge of technology, pedagogy and content based on gender indicate the influence of demographic background in determining the degree of mastery of this TPACK framework. The study was conducted using descriptive and inference design. The research tool is a questionnaire distributed using a Google form. The questionnaire is constructed using a likert scale of 5. The data is analyzed using SPSS 27.0 to see the frequency, percent, and mean values. A sample of 30 Islamic Education teachers in Kangar district. The findings showed a high interpreting value of the level of technological pedagogical and content knowledge for Islamic Education teachers with an average mean 3.70 and 0.70 for the standard deviation. Moreover, by content with average degree for technical pedagogical competence among Islamic Education instructors varied significantly depending on the teachers' gender showing result of 1.011 based on the independent sample t-test. The significant difference in TPACK knowledge levels shows the difference level between male and female Islamic Education teachers in Kangar district primary schools.*

Keywords: TPACK; Islamic Education; Technology



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1. INTRODUCTION

The development of technology around the world has led to an evolution in the world of education. In line with the development of the Industrial Revolution 4.0, technological advances in Malaysia have influenced various patterns of the education system in terms of teaching, learning, evaluation, and clerical. According to Hamzah and Mohd Hasidin (2020), the technology element is no longer considered as a teaching aid but also used as an important instrument in supporting the education system. In line with this development, the Ministry of Education (MOE) has outlined 11 major shifts as the Malaysian Education Development Plan 2013-2025 (PPPM 2013-2015). The seventh

shift for the third wave, using ICT in enhancing the effectiveness of teaching, should be focused in line with the movement of the education world in this wave.

Teachers as the main driving force in this wave need to emphasize technological knowledge in line with pedagogical skills as well as content mastery in professionalism. According to Mohd Nawi and Hashim (2020), the readiness of Islamic Education Teachers in SMI Kelantan towards the use of multimedia in the teaching and learning is at a moderately high level. The mastery of ICT technology skills shows that teachers are increasingly prepared to practice the application of technology culture optimally into the education sector. However, technological knowledge alone does not guarantee the effectiveness of comprehensive teaching. In this context, the teacher's decision in assessing the accessibility and effectiveness of the use of technology can improve enrichment in pedagogy as well as the content of the subjects being focused. Thus, the Pedagogical and Content Technology Knowledge (TPACK) framework is the main idea that can guide teachers to ensure that the elements in the teaching are successfully applied properly.

The TPACK framework has become a worldwide reference based on its ability to discipline all three elements of technological, pedagogical, and content knowledge as a key theory. Teachers can effectively deliver lessons in reference to the TPACK framework that has been enacted. According to Mustawa and Munawir (2021), Islamic Education teachers at MTs Bilingual Muslimat NU Sidoarjo obtained high mean results based on their understanding and knowledge of the TPACK framework in education. However, the difference in mean values shows that the mean score for male teachers of Islamic Education is higher than the mean score of female teachers of Islamic Education. This fact proves that the male teacher of Islamic Education at MTs Bilingual Muslimat NU Sidoarjo is more master of the TPACK framework in integrating all these elements in teaching than female teachers. The difference in technological, pedagogical, and content knowledge based on gender indicates the influence of demographic background in determining the degree of mastery of this TPACK framework.

Thus, this study was conducted to measure the differences and level of knowledge of gender-focused Islamic Education Teachers technological pedagogical content knowledge.

2. METHOD & MATERIAL

The study used quantitative design to survey the level of technological pedagogical content and knowledge of primary school Islamic Education teachers. The sampling method used in the form of purposive sampling which involving 30 teachers of Islamic Education in Kangar district. The data was collected using questionnaires designed by researchers based on literature related to the level of knowledge of pedagogical technology and gender-based content.

Section A focuses data based on gender of participants. Section B has 9 items adapted based on Ab Majid's (2017) study on knowledge of content pedagogical technology and teaching creativity among Islamic Education teachers in malaysia. The questionnaire used contains 9 question items consisting of a likert scale of 5.

The reliability value of 'Cronbach Alpha' found based on the transparency of this study item is 0.919. These results shed light on the reliability of high and relevant items to be used to measure variables in this study.

The data obtained is analyzed using SPSS software and reported in the form of percentage, frequency and mean. The mean value is determined based on (Preedy & Watson, 2010) to interpret the mean level in reference to table 1.

Table 1: *Score analysis and interpretation*

| Score Classification | Level |
|----------------------|-----------|
| 1.00 – 1.80 | Very Low |
| 1.81 – 2.60 | Low |
| 2.61 – 3.40 | Medium |
| 3.41 – 4.20 | High |
| 4.21 – 5.00 | Very High |

Source: Preedy & Watson (2010)

3. FINDINGS

3.1 Background Demographics of Respondents

Table 2 shows the distribution of respondents by gender.

Table 2: *Distribution of Gender-Based Respondents*

| Respondent Gender | Number | Percent (%) |
|-------------------|--------|-------------|
| Men | 15 | 50 |
| Female | 15 | 50 |
| Total | 30 | 100 |

According to table 2, the respondents of Islamic Education teachers among men are 15 people with a percentage value of 50%. The remaining 50% were from female respondents, 15 teachers of Islamic Education.

3.2 Level of Technological Pedagogical Content Knowledge of Islamic Education Teachers

The findings of the study, as shown in table 3, show that Islamic Education teachers have high level for technological pedagogical content knowledge. The overall mean value achievement is 3.70 and the standard deviation is 0.70.

Table 3: *Mean and standard deviation of the level of technological pedagogical content knowledge Islamic Education teachers*

| Number | Items | Min | Standard Deviation |
|--------|--|------|--------------------|
| 1 | I can teach islamic education by combining pedagogy, islamic education content and educational technology. | 3.73 | 0.980 |
| 2 | I able find the necessary materials with the help of learning technology to understand islamic education and apply it to improve teaching methods. | 3.60 | 1.003 |
| 3 | I can apply teaching methods which integrate the content of islamic education, educational technology and pedagogy that have been understood in studies. | 3.77 | 0.898 |

| | | | |
|---------|---|------|-------|
| 4 | I can display leadership for others in coordinate the use of islamic education content, educational technology, and pedagogy in classrooms. | 3.62 | 0.979 |
| 5 | I was able to apply the internet to deepen islamic education and be able to use it in the classroom to remind the teaching culture. | 3.83 | 0.950 |
| 6 | I can determine the learning resources of islamic education and the innovation of appropriate-based learning technology to integrate the teaching of islamic education. | 3.93 | 0.785 |
| 7 | I can evaluate the learning resources of islamic education and the innovation of appropriate-based learning technology to integrate the teaching of islamic education. | 3.66 | 0.936 |
| 8 | I was able to apply learning technology to understand islamic education (example: Internet, m-learning, vr and ar) to improve the teaching and learning of islamic education. | 3.47 | 0.776 |
| 9 | I was able to apply learning technology to understand islamic education (example: Internet, m-learning, vr and ar) to support research. | 3.70 | 0.915 |
| Overall | | 3.70 | 0.700 |

3.3 Differences in the Level of Technological Pedagogical Content Knowledge of Islamic Education Teachers Based on Gender

Table 4 shows independent sample T-tests

Table 4: T-test independent sample between male and female Islamic Education teachers

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|-------|-----------------------------|---|------|------------------------------|--------|-----------------|-----------------|-----------------------|---|---------|
| | | F | Sig. | t | DF | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| TPACK | Equal variances assumed | 4.696 | .039 | 5.618 | 28 | .000 | 1.01111 | .17996 | .64247 | 1.37975 |
| | Equal variances not assumed | | | 5.618 | 18.784 | .000 | 1.01111 | .17996 | .63415 | 1.38807 |

Table 4 shows the results where there is a mean difference between male Islamic Education Teachers gender (1) and female Islamic Education Teachers (2) of 1.011. A positive t-value indicates the mean score of the male gender group (1) is higher than the mean score of the female gender group (2).

4. DISCUSSION

The findings for the overall level of technological pedagogical content knowledge Islamic Education teachers show a high level. This finding is different from the Abu Bakar and Hassan (2019) study which showed that the level of islamic education teachers' knowledge on technology in education achieved a mean value of 4.51 which is at a very high level.

For the Differences in the Level of Technological Pedagogical Content Knowledge of Islamic Education Teachers Based on Gender, it was analyze using independent t-test. The *Levene's Test Equality of Variances* section showed evidence of a significant amount of 0.039 which is greater than the significance value of 0.05. Thus, the value of $0.039 > 0.05$ indicates the variance of both groups of male and female Islamic Education teachers is the same.

The T-test for *Equality of Means* showed a t-value of 5.618 with degrees of freedom (df) being 28 in the equal space of *assumed variances*. A sig (2-tailed) value smaller than 0.05 which is $0.05 > 0.00$ makes the nul hypothesis subtracted. Thus, there is a significant difference in the level of knowledge of pedagogical technology content between male and female teachers of Islamic Education.

The differences in gender for the findings of this study are in line with the findings for the level of readiness of primary school teachers for the application of information technology and communication in learning and facilitation by gender in the Iywon and Mohd Nasri (2020) studies. However, the results for this finding are different from the findings of Ab Aziz and Maat (2021) where there is no significant gender difference in the readiness of primary school Mathematics teachers towards technology integration during the pandemic.

5. CONCLUSION

Teachers who are the main characters in preserving technology-based teaching and learning should always be aware of current technological developments. The question of technological knowledge, pedagogy and teaching content needs to move in tandem for the completeness of delivery to be achieved. Referring to the TPACK model from Mishra and Koehler (2006), the TPACK framework is a very meaningful reference to deepen the teacher's teaching style based on the elements that are emphasized.

The research, which technological pedagogical content knowledge of Islamic Education Teachers proved the difference in the levels obtained between Islamic Education Teachers of the opposite genders. The level of technological pedagogical content knowledge of Islamic Education for male teachers reached a very high level of 4.21 while female Islamic Education teachers only achieved a moderate level with a mean of 3.20. These results clearly show that there is a significant difference between technological pedagogical content knowledge between male and female islamic education teahcers in Kangar district primary schools.

Therefore, TPACK framework presented by Mishra and Koehler (2006) should be focused on ensuring the effectiveness of teaching that integrates the technological component in teaching in schools. This should be emphasized regardless of gender as each teacher carries the same instructor identity even though the subjects taught are different.

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