



Preparing Future Teachers for 5.0 Era: Microteaching and TPCK Approach

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Abstract. This study aimed to investigate the innovative microteaching learning model used in the Madrasah Ibtidaiyah teacher education program at Muhammadiyah University of Sidoarjo and to assess the Technology Pedagogy Content Knowledge (TPCK) ability of prospective Islamic elementary school teachers. The study utilized a qualitative phenomenological approach with data collected through observation, interview, and documentation from fifth-semester student teachers. The results showed that the microteaching learning model was innovative, incorporating online/remote, face-to-face, and hybrid learning. Additionally, the TPCK ability of the prospective teachers was found to be satisfactory, with scores ranging from 292.7 to 311. The implication of the study suggests that the prospective teachers are well-equipped to face the challenges of the 5.0 revolution in education.

Keywords: Innovative microteaching · TPCK · teacher education · hybrid learning · Islamic elementary school

1 Introduction

In the 21st Era, teachers are in demand for can use technology in learning. at the moment pandemic covid compel schools for leave learning stare advance and do learning online. this make teachers risk ability the pedagogic. every day use learning stare advance replaced online, and forced use technology [3]. For teachers who stutter technology, be difficulty in teach, but the teacher can technology easy adapt [4]. Thing that of course reasonable, because the teacher is trained teach with stare face. From p the so needed prospective teachers for ready teach in circumstances whatever, fine teach in a manner stare face, online or hybrid [5]. Prospective teachers must insert since early, with prepare Thing the then, in Microteaching lectures must designing lectures in a manner innovative as possible print ready teachers _ face challenge revolution industry 5.0 [6].

Innovative microteaching is designing repeat microteaching lectures with apply Technology, pedagogy, content, knowledge (TPACK). [7] Microteaching learning is designed with method practice microteaching learning online, face to face advance, as well as hybrid. Indicator from Content pedagogy technology knowledge there are

7 namely: 1. Content knowledge (CK), 2. Knowledge pedagogic (PK), 3. Knowledge technology (TK), 4. Pedagogical Content Knowledge (PCK), 5. Technological Content Knowledge (TCK) 6. Technological Pedagogical Knowledge (TPK), 7. Technological Pedagogical Content Knowledge (TPACK) [8].

Universitas Muhammadiyah Sidoarjo, is university that has operate microteaching lectures online innovative, that is be marked with To do learning online, learning in a manner stare face and learning hybrid learning. Researcher this observe how innovative microteaching learning that is Universitas Muhammadiyah Sidoarjo, and how Techno Pedagogy ability content knowledge of students ibtdaiyah madrasa teacher candidates in semester 5.

2 Methodology

Study this is study Qualitative descriptive phenomenology, technique data collection using Observation, interview, documentation, object under study is Student Madrasah Ibtidaiyah teacher education semester 5. Subjects observed is learning Microteaching course Fiqh madrasa Ibtida'iyah.

RQ.1 How Microteaching Learning Model Innovation at PGMI UMSIDA?

RQ.2 How TPACK ability of prospective Islamic Elementary School Teachers in UMSIDA?

3 Results

3.1 Innovative Microteaching Learning Model

What is meant learning innovative is learning done _ with way online, stare Advance and Hybrid. [9] No only stare advance just. However combines 3 learning models the at once.

Following is picture learning stare advance learning Microteaching Fiqh MI, which is here permanent use stare advance as a basic learning model (Fig. 1).

Although To do learning stare advance, however permanent use learning media as well as technology learning. So though still use learning stare advance however permanent can hone TPACK capabilities.

Online Learning

Online learning is learning done _ without To do stare advance, however via an existing platform available. All form Theory lesson distributed online, communication is also carried out online, and tests are also carried out online [10] "Literature reviews about pedagogical innovations are of importance to determine further interventions for learning refinement and future research directions. The present study describes existing pedagogical innovations, identifies learning problems underlie the innovations, and outlines development models used for developing elementary mathematics educational innovations in Indonesia. A systematic literature review was administered to review



Fig. 1. Classic Learning

scholarly articles published between 2014 and 2019. This time frame was drawn in relation to a new curriculum called Kurikulum 2013 introduced in early 2014. The results of this study reveal that the majority of pedagogical innovations focus on developing learning materials and techniques while fewer innovations develop learning environments. Problems underlie existing innovations mainly due to the elementary students who reluctant to learn mathematics, the less competent teachers, and the old-fashioned learning resources. Research and development in elementary mathematics were commonly conducted using Borg Gall, ADDIE, and 4D models. The evidence from this study suggests that forthcoming mathematics teaching and learning process should be conducted in more enjoyable manners such as practicing microgame-based learning in either physical or digital learning spaces. One of the most sensible research agendas is to develop joyful learning environments to address the interrelated complex problems among students, teachers, and learning resources in elementary mathematics learning in Indonesia.

Following is learning microteaching learning Fiqh that is done in full online, that is Among teachers and students are in different places, however in data room. they train teach with using google meet, they study displays share screen PowerPoint screen and communicate well (Fig. 2).

Hybrid Learning

Hybrid learning is combined or combination Among two type learning, that is learning stare face and online, who make use of technology as supporters mainly [11].

Following is documentation learning in hybrid learning, which is where teacher there is class, in part students inside _ class, and some there is at home each using video conferencing. They To do learning with ok (Fig. 3).

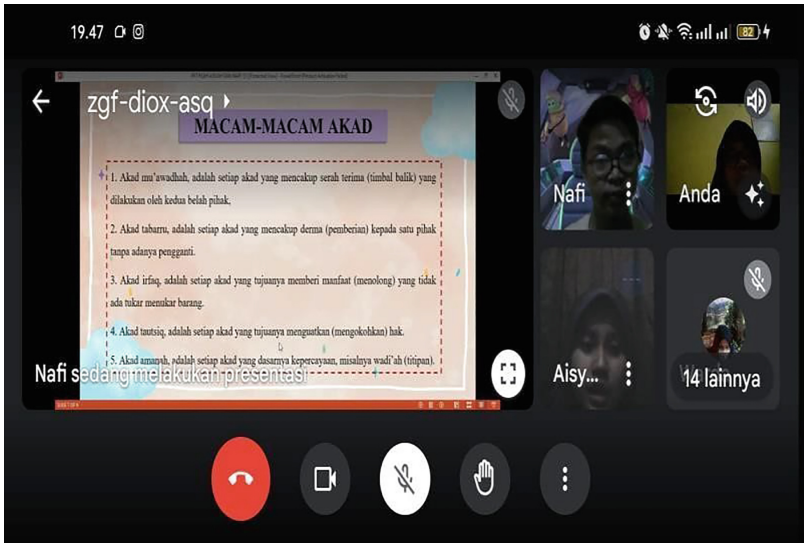


Fig. 2. Online learning



Fig. 3. Hybrid Learning

3.2 TPACK

Study this exploring the abilities of their 5th semester PGMI students' TPACK is prospective madrasah ibtida'iyah teachers consisting of of 29 students. From the results of the questionnaire that was distributed gang 7 Indicator TPACK, then found: 1. Content knowledge (CK) with score 311, 2. Knowledge pedagogic (PK) with score 311, 3. Technological knowledge (TK) get score 305, 4. Pedagogical Content Knowledge (PCK) obtain score of 300, 5. Technological Content Knowledge (TCK) get score 303, got

Table 1. Indicator and questioner statement

No	TPACK Indicator	Statement
1	Content knowledge (CK)	Through innovation microteaching learning model, i more understand teaching techniques with good
2	Knowledge pedagogic (PK)	Through my microteaching learning model innovation could explain content teach the more good
3	Knowledge technology (kindergarten)	Through learning model innovation I could operate learning media more proficient
4	Pedagogical Content Knowledge (PCK)	Through my microteaching learning model innovation can explain content lesson with good
5	Technological Content Knowledge (TCK)	Through my Microteaching learning model innovation can use learning media and can apply it
6	Technological Pedagogical Knowledge (TPK)	Through microteaching learning model innovation, i can using TPK with good
7	Technological Pedagogical Content Knowledge (TPACK)	Through my Microteaching learning model innovation can apply Technology Content Knowledge Pedagogy with good

6. Technological Pedagogical Knowledge (TPK). score 292, 7. Technological Pedagogical Content Knowledge (TPACK) 302. Which means ability technology pedagogy content knowledge prospective teachers of madrasah ibtdaiyah very good. Following is table TPCK indicators and questionnaire questions that have been shared (Table 1).

Acquisition score from the questionnaire (Fig. 4) that has been distributed to prospective madrasah ibtida'iyah teachers PGMI Study Program Muhammadiyah University of Sidoarjo. Score highest is the ability of CK and PK is 311.

Content knowledge (CK)

Content knowledge (CK) is teacher knowledge about Theory lesson to be studied or taught". [12] Indicator this obtain the highest score ie 311. It is expressed by students in Interview deep:

“For knowledge Theory lesson learned, God willing, all of us understand, because of which we teach is Theory for Islamic elementary school students, so easy our understand, moreover our this already student level end, which where demanded for have more knowledge _ profound.” (W 1 Mhs. 01.01).

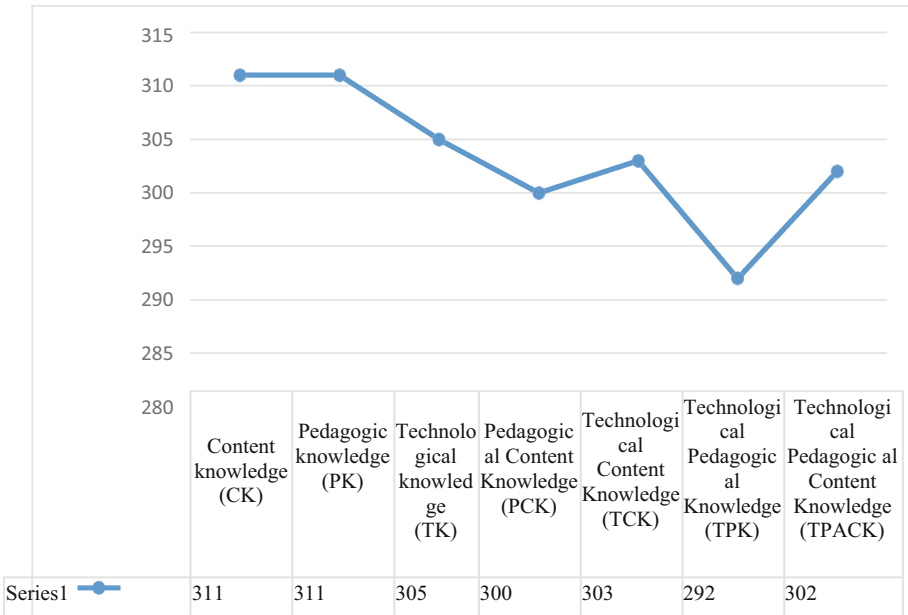


Fig. 4. Gain diagram score of the 7 indicators of technology, pedagogy, content knowledge (TPACK).

Knowledge pedagogic (PK)

Knowledge pedagogic (PK) [12] is knowledge teacher’s in-depth knowledge of processes and practices or study method teaching”. These indicators obtain very score _ tall too. The value same with the CK indicator, which is 311. In Interview deep with student:

“For pedagogic knowledge, we are very understand because all courses in the PGMI study program, teach about pedagogic, because major our is teacher education, so we understand bright about pedagogic knowledge” (W 2.Mhs.02.01).

Knowledge technology (kindergarten)

Knowledge technology (kindergarten) always in circumstances flux [5]. The definition of TK used in close TPACK framework with Fluency Technology Information go beyond definition traditional about literacy computer for require people to understand technology information enough large for apply it in a manner productive on the spot work and in life daily, para recognize when technology information could help or hinder achievement something purpose, and for Keep going adapt with change technology information”. Indicator this is obtain score highest to 2, which is 305.

This disclosed in Interview deep into students:

“We can use technology, because now this his era use technology, but no all technology can used in teach, our difficulties in use technology is adapt the right technology for a learning, let alone ours teach this is about religion”. (W3. Mhs.03.03).

Pedagogical Content Knowledge (PCK)

PCK focuses on the learning process later will chose by the teacher on the medium material taught. This PCK element load about election method teach, plan learning, to facility supporters learning. Acquisition score on this indicator is 300. In Interview deep student disclose that since exists innovation microteaching learning, he so very got it with PCK.

“Since lecturer designing microteaching to be very innovative, i.e. so more got it with planning learning, i very like with innovative microteaching this”. (W 4.Mhs.04.01).

Technological Content Knowledge (TCK)

Element this is knowledge about influence technology at one discipline knowledge knowledge certain. That is, how and for what influence technology on development something discipline knowledge knowledge. TCK indicator gain score 303.

Technological Pedagogical Knowledge (TPK)

Element this load connection Among technology and learning process. Through this TPK the teacher can understand advantages as well as deficiency technology in learning for afterwards made ingredient evaluation. These indicators is getting the lowest score, namely 292. This in Interview profound, student disclose this TPK rather hard.

“after get innovative microteaching lectures, we are growing got it about TPK, but we had difficulties in adapt the right technology for students, sometimes according to our already appropriate, but moment tried in the field occur trouble”. (W 5.Mhs.05.02).

Technological Pedagogical Content Knowledge (TPACK)

The last element is the TPACK itself, which is integration among third component that is technology, pedagogy, and content learning. In this digital era, like moment this, teacher indeed demanded for competent in integrate all three. This is so no there is out of date teacher term. Moreover, already many circulating supporting platforms possible learning used online (e-learning), one of which can used is Ujione.

In the TPACK indicator obtain score 302. Score this enough tall compared to TPK, in Interview deep score the can high, because already used to with video conferencing.

“Since the pandemic, we have followed lectures online, and forced using video conferencing, at first we didn’t can use it, but because too often online lectures, we are getting accustomed to technology like zoom and google meet. So when we asked for practice teach with online or hybrid, we have can, because accustomed and forced circumstances during the covid pandemic first, but with innovative microteaching this is my TPACK the more honed. he he he” (W 7.Mhs.07.02).

4 Conclusion

Conclusion from study this is, an innovative microteaching learning model carried out in Universitas Muhammadiyah Sidoarjo especially in the Study Program madrasah ibtidaiyah teacher education is use online learning, learning face-to-face, and learning mixed, or hybrid learning [7]. With apply the innovative microteaching learning model, then TPCK ability of students the more increase. Proved by scores indicator 1. Content knowledge (CK) with score 311, 2. Knowledge pedagogic (PK) with score 311, 3 Technological knowledge (TK) get score 305, 4. Pedagogical Content Knowledge (PCK) obtain score of 300, 5. Technological Content Knowledge (TCK) get score 303, got 6. Technological Pedagogical Knowledge (TPK). score 292, 7 Technological Pedagogical Content Knowledge (TPACK) 302. Which means ability technology pedagogy content knowledge prospective teachers of madrasah ibtidaiyah very nice and ready become a modern teacher welcome revolution industry 5.0.

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