
TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE: A New Pedagogical Approach in Islamic Education in the Pandemic Era

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Abstract:

This paper proposes TPACK as a new pedagogical approach in Islamic education in the pandemic era. Pedagogical approach refers to the method and practices of a teacher. When planning a lesson, teachers consider the best way to communicate and deliver the relevant information to enable pupils the best possible learning experience. They will take into account the context of the subject and also their own teaching preferences. In this context, pedagogical approach is necessity in Islamic education in Covid-19 Pandemic Era. Therefore, no other way but teachers must integrate a technology to Islamic education called Technological Pedagogical Content Knowledge (TPACK). Because, the traditional approach of instruction does not seem able to provide solutions for most of the educational problems, especially Islamic education. As methodological approaches, we carry out a literature review complemented by a conceptual analysis based on data from the relevant journal. This paper shows that TPACK framework is built on Lee Shulman's pedagogical construction with three core elements, namely content, pedagogy, and technology. Also, this paper argues that Islamic education need to adopt TPACK as a new pedagogical approach to its learning model in the pandemic era. Developing, strengthening and mainstreaming of TPACK by Islamic education teachers is very important for effective teaching with technology. TPACK as a new pedagogical approach to Islamic education learning models in the pandemic era allows Islamic education teachers to become agents of change to promote Islamic education to be more inclusive, accommodating and adaptive to the demands of the times.

Keywords: TPACK, pedagogical approach, Islamic education, the pandemic era

Abstrak:

Tulisan ini menawarkan TPACK sebagai pendekatan pedagogis baru dalam pendidikan Islam di era pandemi. Pendekatan pedagogis mengacu pada metode dan praktik seorang guru. Ketika guru merencanakan pelajaran, guru mempertimbangkan cara terbaik untuk berkomunikasi dan menyampaikan informasi yang relevan untuk memungkinkan siswa mendapatkan pengalaman belajar terbaik. Mereka akan mempertimbangkan konteks mata pelajaran dan juga preferensi pengajaran mereka sendiri. Dalam konteks ini, pendekatan pedagogis menjadi suatu keniscayaan dalam pendidikan Islam di era Pandemi. Oleh karena itu, tidak ada jalan lain bagi guru, kecuali harus mengintegrasikan teknologi ke dalam pendidikan Islam yang disebut *Technological Pedagogical Content Knowledge* (TPACK). Sebab, pendekatan pengajaran tradisional tampaknya tidak mampu lagi memberikan solusi bagi sebagian besar permasalahan pendidikan, khususnya pendidikan Islam. Sebagai pendekatan metodologis, kami melakukan tinjauan pustaka yang dilengkapi dengan analisis konseptual berdasarkan data dari jurnal yang relevan. Tulisan ini menunjukkan bahwa kerangka TPACK dibangun di atas konstruksi pedagogis Lee Shulman dengan tiga elemen inti, yaitu konten, pedagogi, dan teknologi. Selain itu, tulisan ini berpendapat bahwa pendidikan Islam perlu mengadopsi TPACK sebagai pendekatan pedagogis baru untuk model pembelajarannya di era pandemi. Pengembangan, penguatan dan pengarusutamaan TPACK oleh guru PAI sangat penting untuk pengajaran yang efektif dengan teknologi. TPACK sebagai pendekatan pedagogis baru model pembelajaran pendidikan Islam di era pandemi memungkinkan guru pendidikan Islam menjadi agen perubahan untuk memajukan pendidikan Islam agar lebih inklusif, akomodatif dan adaptif terhadap tuntutan zaman.

Kata kunci: TPACK, pendekatan pedagogis baru, pendidikan Islam, pandemi Covid-19

INTRODUCTION

COVID-19 pandemic has had a very significant impact on the implementation of the educational process, especially Islamic education. Islamic educational institutions are “forced” to move from conventional traditions to a new era in what is called to be all digital. Nowadays, Islamic Education stand in an interesting transitional phase between its past—borrowing Helen Beetham and Rhona Sharpe's words— “ICT free” (technology free) and a future that is “ICT aware” (technology literate) (Beetham & Sharpe, 2007; Pamuk et al., 2015). For many centuries before the development of digital technology, Islamic education from the aspect of learning content, learning process, curriculum and assessment used conventional methods to fulfill its vision and mission in developing and “accrediting” students’ knowledge and skills (Archambault & Barnett, 2010; Maor, 2017; Voogt et al., 2016).

The pattern of learning and assessment as mentioned above which tends to be too conventional-dogmatic is irrelevant in the current pandemic and digital era. On condition that Islamic education wants to survive and exist in society, Islamic education must be inevitably do innovative, creative and modern ways without negating its identity and distinction as *rahmatan lil 'alamin* Islamic education. In this context, teachers play an important role in making fundamental changes. Covid-19 outbreak requires teachers, especially Islamic Education teachers, to rack their brains in order to find the right and fast “concoction” for learning in this current era. In this current digital era, especially in pandemic conditions, technology-based learning is a necessity. The covid-19 pandemic and rapid progress in the digital world have created new opportunities and challenges in the world of Islamic education. New technology is bombarding teachers from all directions.

Under these conditions, Islamic Education teachers should be capable to utilize technology (technological literacy) for easy administration of planning, execution and assessment of learning (Kemenag, 2021). Although teachers often consider the possibility, for instance, technology A or B can have pedagogical value, in fact they often feel anxious, lack skills, and have a disposition to take risks and consequences, hence it impacts the learning process in the classroom. In order to facilitate digital

exploration for students and teachers, Minister of Education, Culture, Research and Technology (Kemendikbudristek), Nadiem Makarim has launched “Kita Harus Belajar” (KIHAJAR) (translation: “We Must Learn”) program on Thursday, 20 May 2021 (Kemendikbudristek, 2021). KIHAJAR is a digital exploration platform for students at all levels to improve literacy, numeracy, ICT usage, and character education through the use of information and communication technology (ICT) based on Science, Technology, Engineering, and Mathematics (STEM). KIHAJAR is intended to give students and teachers a sense of autonomy in the learning process, making it more enjoyable and productive (Kemendikbudristek, 2021).

Nevertheless, to be technologically literate is not enough for teachers, there are also several aspects of basic competence that need to be possessed according to Constitution Number 14 of 2005 Article 10 paragraph (1) concerning Teachers and Lecturers, namely pedagogic competence, personality competence, social competence and professional competence. For Islamic education teachers, these competencies must be enhanced with leadership and spiritual competencies based on the Decree of the Minister of Religion (KMA) Number 211 of 2011 concerning Teacher Qualification and Competency Standards (Kemenag, 2021). Consequently, Islamic Education teachers are expected to be able to present interactive, creative, innovative and joyful learning.

In the context of the Covid-19 outbreak, conventional or traditional teaching approaches is not possible to accommodate the teaching of Islamic education. The conventional teaching approaches are generally teacher-directed and where students are taught in a manner that is conducive to sitting and listening. It is true that the traditional expectations and department philosophies often allow us to continue with the teacher-based model with some useful results as evident by the past accomplishments of many and this cannot be disputed as much (Alshawish et al., 2021; Dayo et al., 2021; Tularam, 2018). However it is often argued that the traditional pedagogical approach may not provide students with valuable skills and indeed some even go as far as saying the traditional method leads to a student not retaining knowledge after exams - they have little or no recall of the body of knowledge learnt beyond the end of a semester, for example.

In the context of Islamic education learning in the pandemic era, we argue that Islamic education teachers need to input a “new pedagogical approach” in their learning. Also, we assume that there is no one best way of teaching except to integrate technology in the teaching process. Therefore, we introduce a “new pedagogical approach” that is *Technological Pedagogical Content Knowledge* (or TPACK for short), that describes the kinds of knowledge needed by a teacher for effective technology integration. The TPACK framework emphasizes how the connections among teachers' understanding of content, pedagogy, and technology interact with one another to produce effective teaching (Gómez-Trigueros & Yáñez de Aldecoa, 2021; Juanda et al., 2021; Mutiani et al., 2021). Even as a relatively new framework, the TPACK framework has significantly influenced theory, research, and practice in teacher education and teacher professional development. We recommend using the technology, pedagogy, and content knowledge (TPACK) framework as a way to think about effective technology integration, recognizing technology, pedagogy, content and context as interdependent aspects of teachers' knowledge necessary to teach content-based curricula effectively with educational technologies

The development of TPACK as a “new pedagogical approach” in Islamic education is quite minor. It can be seen from several recent studies, including Raoda Ismail which only emphasizing the mastery of TPACK in making learning videos during the Covid-19 pandemic, not mentioning Islamic education learning specifically (Ismail & Imawan, 2021). Likewise the research conducted by Abdul Quddus about the implementation of TPACK in Islamic Education's Teacher Professional Education of Teachers' Education Institute at UIN Mataram (Quddus, 2019). Many researchers are also conducted researches on the implementation of TPACK in general subjects (science, social studies, etc.) and TPACK in learning administration (Darmadji et al., 2015; Pulungtana & Dwikurnaningsih, 2020; Wilujeng et al., 2020; Zarni, 2019). On top of that, researchers from abroad only talk about the TPACK concept, but do not relate it to the context of Islamic education learning (Ajmain et al., 2019; Archambault & Barnett, 2010; M. Koehler & Mishra, 2009; Maor, 2017; Niess, 2011; Voogt et al., 2016)

Based on the above background, this article aims to propose a new pedagogical approach in Islamic education learning, namely Technological Pedagogical Content Knowledge (or TPACK for short) and to integrate it into Islamic education learning in order to produce innovative, creative, interesting, and joyful learning that is mutually dialectic and collaborates between teachers and students, as well as technology and learning content.

RESEARCH METHOD

This article uses a qualitative-exploratory approach to conduct a literature review. Literature study is a data collection technique that involves analyzing and understanding material from books, journals, notes, and other sources (Creswell & Creswell, 2017). This article uses a qualitative research method, which includes collecting and interpreting non-numerical data (such as text, video, or audio) in order to clearly define concepts, opinions, or experiences (Creswell & Creswell, 2017; Creswell & Miller, 2000). This method considers not just “what” people believe, but also “why”. It can be used to develop a better understanding of an issue or to develop new research topics. Also, the Miles and Huberman approach was used to analyze the data from this study, which included data condensation, data presentation, and making conclusions (Miles et al., 2014).

The TPACK Framework

To understand the genealogy of TPACK framework and its implications for educational technology, it is necessary to investigate first – borrowing Leanna M. Archambault term – *pedagogical content knowledge* (PCK) (Archambault & Barnett, 2010; Gómez-Trigueros & Yáñez de Aldecoa, 2021; Pamuk et al., 2015). The PCK concept itself has been introduced by Shulman where he acknowledged the need for a theoretical framework to explain the knowledge that teachers and students essential to know, thus teachers in this case are able to teach well and interactively. Schulman has termed it with content knowledge. As quoting from Shulman, the purpose of developing PCK idea is to describe the relationship between the amount and nomenclature of knowledge (organization of knowledge) of certain subject matter and knowledge related

to how to teach various pedagogical contents (Jamieson-Proctor et al., 2012; Maor, 2017; Schulman, 1986). To put it simply, PCK includes knowledge of how to teach a specific content or knowledge of subject matter, not merely knowing the content.

In this case, Shulman has described PCK as encompassing the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations in a word, the ways of representing and formulating the subject that make it comprehensible to others (Schulman, 1986). PCK articulation by Shulman has implicitly become the common currency in education, teachers and related scientific fields (Segall, 2004). However, as reported by Segall, although PCK is often used, it still raises questionable educational problems, and has the right to be criticized (Segall, 2004). McEwan and Bull also share the same opinion concerning on Shulman's difference conception between content knowledge and pedagogical content knowledge which introduces complicated conceptual problems (McEwan & Bull, 1991; Segall, 2004). However, TPACK framework built on Shulman's PCK description has at least given a "fresh air" in content and learning. The goal is none other than to insert a touch of educational technology into learning process, hence teachers and students can interact and communicate each other in order to create effective, creative, innovative and joyful teaching and learning process. In a similar research on TPACK, a more intensive research has also refined by Matthew J. Koehler, et al. in their article, "What is technological pedagogical content knowledge (TPACK)?" (M. Koehler & Mishra, 2009).

TPACK framework includes three types of core knowledge including content, pedagogy, and technology (M. J. Koehler et al., 2011). However, in the context of Islamic education, a teacher have to overstep technology in order that the teachers are not confined and trapped or focused on the use of technology alone, additionally teachers are not only transferring knowledge, but also transferring value to students. This trilogy of knowledge is flexible, dynamic and contingent which requires teachers to be long life learners. Mastery TPACK's competence for an Islamic Education teacher in all-digital and pandemic era is a necessity. However, TPACK's competence on the one hand is full of technological touch in which has a great opportunity to ignore the

values of Islamic education, but on the other hand, Islamic education must be packaged and delivered in digital format. Certainly, these are opportunities and challenges that must be responded wisely by teachers and related stakeholders.

This is what Shulman said that good teaching is not simply adding technology to the existing teaching and content domain. Rather, the introduction of technology causes the representation of new concepts and requires developing sensitivity to the dynamic, transactional relationship between all three components suggested by the TPACK framework (M. J. Koehler & Mishra, 2005).

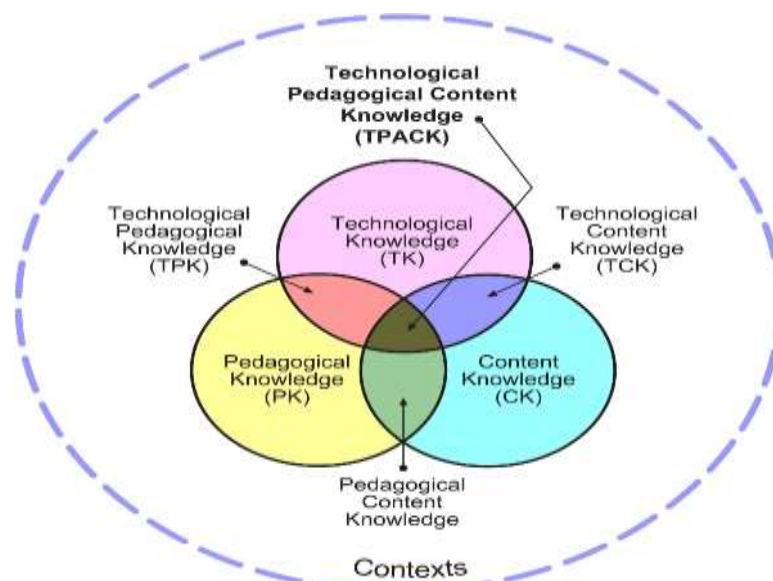


Figure 1: TPACK Framework (TPACK, n.d.)

In the above figure, there are three main components in the TPACK framework, namely Content Knowledge (CK), Pedagogical Knowledge (PK), and Technology Knowledge (TK). The three core components of TPACK are equally essential as the interactions between bodies of knowledge with one another. This is represented as PCK (pedagogical content knowledge), TCK (technological content knowledge), TPK (technological pedagogical knowledge), and TPACK (technology, pedagogy, and content knowledge). Effective technology integration towards pedagogy about particular subject matter requires dynamic sensitivity. It means teacher must be able to “mix” learning content with technology, or package technology-based learning content as the underlying.

Seven Components of TPACK

First, content knowledge (CK) is the teacher's knowledge of the subject matter to be studied or taught. For example, the content structure (the body of knowledge) of Islamic education must be acknowledged that currently is more appreciate on development-borrowing Abid al-Jabiri term – “*bayani*” and “*irfani*” reasoning, rather than “*burhani*” reasoning (Al-Jābirī, 2003; Al-Jabiri, 1991; Hilmy, 2013). Definitely, Islamic Education content is distinctive from natural sciences which prioritizes inductive thinking skills (*burhani*) or Cartesian reasoning. Knowledge about this kind of learning content is very important for teachers. As noted by Shulman, content knowledge includes concepts, theories, ideas, organizational frameworks, and evidence, as well as established practices and approaches for developing knowledge (L. S. Shulman, 1986). Therefore, Islamic Education teachers in particular must understand the body of science of Islamic education content characteristics in depth (the deeper knowledge fundamentals) as a means to more targeted development and far from doctrinal or dogmatic.

Second, Pedagogical Knowledge (PK) is a set of in-depth knowledge that teachers have about teaching and learning processes and practices or methods. In a regulatory perspective, a teacher must master pedagogic competence in depth. Pedagogic competence is the ability to understand students, design and implement learning, evaluate learning outcomes, and develop students to actualize their various potentials and matters related to pedagogic elements. According to Matthew J. Koehler, pedagogic competence includes how the teacher's ability to understand how students learn, general classroom management skills, lesson planning, and student assessment.

Specifically, pedagogical knowledge includes knowledge of techniques or methods used in class, target audience, and strategies to evaluate student understanding. A teacher who has deep pedagogical knowledge will be able to understand how students construct knowledge and acquire skills, and how they develop habits of mind and positive dispositions toward learning. Thus, pedagogical knowledge requires the understanding of cognitive theory, social, developmental theories of learning, and how a teacher should behave in the classroom.

Third, Pedagogical Content Knowledge (PCK) is pedagogical knowledge implemented in certain learning content. The main idea of Shulman's conceptualization on PCK is transforming subject matter for teaching and learning (L. S. Shulman, 1986). Specifically, Shulman has explained that this transformation and transmission occurred when the teacher interprets certain subject matter, then finds the best way to implement that interpretation, and adjusts the teaching material with the previous students' conceptions (L. Shulman, 1987). Thus, PCK includes learning, curriculum, assessment, and reporting.

Fourth, Technology Knowledge (TK) or knowledge about technology. This type of knowledge is invariably dynamic and fluid. He has supposed an integrated framework between the content and pedagogy. Many variation of technologies developing nowadays indicates the praxis of the use is also varied. In Indonesia, internet users have reached 202.6 million people in early 2021 (Kompas, 2021). This number increased significantly by 15.5 percent or 27 million people when compared to January 2020. Meanwhile, the total population of Indonesia is currently 274.9 million people. It means that internet penetration is massive in Indonesia, where in early 2021 it reached 73.7 percent. The data at a glance showed that Indonesian people are familiar with digital, but in reality, such massive technology is quite rarely designed specifically for education. The proposal of the Committee of Information Technology Literacy of the National Research Council stated that FITness (*Fluency of Information Technology*) has surpassed the definition of a computer in general (National Research Council, 1999). In this context, FITness must be understood as a dynamic technology literacy that requires each individual to learn or update their abilities or information. Therefore, the conceptualization of TK does not actually place – borrowing Matthew J. term Koehler – end state, but views it dynamically, flexible, adaptive and fluid according to the context and dynamics of the era.

Fifth, Technological Content Knowledge (TCK). Technology and content knowledge have a deep historical relationship. Advances in various fields such as science (medicine, physics, mathematics, climatology, etc.) as well as social-humanities sciences (religion, arts and culture, history, archaeology, anthropology, etc.) coincide

with the development of new technologies enable the representation and manipulation of data in powerful and useful ways. The development of technology that is so massive turns out to offer a re-reading (rethinking and re-interpretation) of the world, especially the world of education. The wide choice of technologies has given, inspired, and at the same time limited the types of content ideas that can be taught. Thus, the decision to choose certain content has consequences for what type of technology to use.

As quoting from Matthew J. Koehler, Technology can constrain the types of possible representations, but also can afford the construction of newer and more varied representations. Furthermore, technology can provide a greater degree of flexibility in navigating all of these representations. TCK is an understanding the way technology and content influence and constrain one another. In the digital and pandemic era, teachers need to master these competencies and require having a deep understanding of the manner in which material can be packaged and wrapped neatly, creatively, innovatively and funly through the implementation of certain technologies. In particular, teachers need to understand which types of technology are best suited for “handling” subject matter learning within their domain and how content defines or might even change technology—or vice versa.

Sixth, Technological Pedagogical Knowledge (TPK) is an understanding of how the teaching and learning process can change when involving certain technologies in certain ways. Applying TPK requires a deeper understanding of the constraints and affordability of technologies and the context of the scientific disciplines based on its function. Furthermore, the application of TPK requires careful strategy and planning as well as pedagogical design and technology, thus the teaching and learning process occur conducive. An understanding of the affordability of technology and how a teacher can use it appropriately according to its context and purpose is an integral part of understanding TPK.

TPK becomes very urgent because most popular software programs are not designed for educational purposes. Software programs such as Microsoft Office Suite (Word, PowerPoint, Excel, Entourage, and MSN Messenger) are usually designed for a business-oriented environment. In fact, web-based technologies such as blogs or

podcasts are designed in such a way for the purposes of entertainment, communication, and social networking. Therefore, teachers must – to borrow Duncker's term – reject functional fixedness and develop competencies that overstep common habits in order to be able to reconfigure them for more contextual pedagogical purposes (Duncker, 1945). Thus, TPK requires to seek insightful, creative, and open-minded use of technology, not for its own sake but to advance student learning and understanding.

Seventh, Technological Pedagogical Content Knowledge (TPACK) is an emerging form of knowledge that surpasses the three “core” components (content, pedagogy, and technology). In further explanation, TPACK can be defined as an understanding that emerges from the interaction between content, pedagogy, and technological knowledge. TPACK is a combination of CK, TK and TCK. It is also described as the basis of technology-based effective teaching. Certainly, it requires an understanding of the representation of concepts using technology, pedagogical techniques that use technology in a constructive way to teach content, knowledge of what makes concepts difficult or easy to learn and how technology can help address some of the problems students face, knowledge of students' prior knowledge and epistemological theories, and knowledge of how technology can be used to build on existing knowledge to develop new epistemologies or strengthen old ones.

In this case, TPACK does not exist merely in an empty space, but is distributed in specific learning and teaching contexts. Thus, teachers need to develop cognitive fluency and flexibility not only in each of the key domains (T, P, and C), but also in the ways these domains and contextual parameters are interrelated with the aim to build effective solutions. Therefore, TPACK is a kind of deep, flexible, pragmatic, and nuanced understanding of teaching with technology – in Koehler's perspective – TPACK is perceived as a professional knowledge construct (M. Koehler & Mishra, 2009).

The TPACK framework shows that content, pedagogy, technology, and the context of teaching or learning have a role to play both personally and collectively. Teaching with technology is considered an achievement if continuously creating,

maintaining, and re-establishing a dynamic balance among all the components. It should be noted that various factors influence how this balance is achieved.

TPACK Development Strategy in Learning

Then, what is the strategy for developing Technological Pedagogical Content Knowledge (TPACK)? And where to start? Of course, these minor questions become commonplace. Several approaches have been offered to develop TPACK for teachers in learning contexts. Two of these approaches (read: PCK to TPACK and TPK to TPACK) became the basis or prior knowledge for their development construction and previous experience. The next step is to develop PCK and TPACK simultaneously. This requires a holistic approach for the development of professional TPACK centered on the teacher's experience in interpreting, designing, processing, and perfecting the teaching and learning process in education in order to solve certain learning challenges.

In the context of Indonesian Islamic education, TPACK development strategy in learning should be implemented in delivering Islamic Education material to students. As quoting from Matthew J. Koehler, here is an explanation of three TPACK development strategies.

Table 1. Three TPACK Development Strategies

TPACK Development Strategy	Description
From PCK to TPACK	Teachers utilize existing Pedagogical Content Knowledge (PCK) to form knowledge about technology that can be applied properly for specific learning goals (Doering et al., 2009; Harris & Hofer, 2009).
From TPK to TPACK	Teachers build their knowledge of technology in general to develop technological competence in the context of learning. Furthermore, with that knowledge, teachers can identify and develop specific content that benefits from teaching using these technology strategies (Angeli & Valanides, 2009).
Simultaneous PCK	At this stage, the teacher has gained experience

and TPACK development	and knowledge through a series of the two concepts above, thus the teacher is able to define, design, and refine solutions to learning problems. This design process serves as a locus for activities that generate knowledge on how to utilize the triple of TPACK, namely technology, pedagogy, and content that interact each other to create specialized forms of knowledge (Brush & Saye, 2009; Mishra & Koehler, 2006).
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TPACK as a New Pedagogical Approach of Islamic Education in the Pandemic Era

In the pandemic era, there is no other choice for Islamic Education but to adopt TPACK as a new approach in its teaching pattern. The development of TPACK as a new approach for Islamic Education learning model should be considered by Islamic Education teachers. It will make Islamic Education learning adaptable to the dynamics of the times and not being monotonous and unattractive anymore. Based on the TPACK framework (M. Koehler & Mishra, 2008; Mishra & Koehler, 2006), we argue that Islamic Education teachers should – to borrow Wilfred Smith's term – rethink the learning design and concept (Smith, 1989) and re-imagine how the demands of the 21st century change the boundaries of content knowledge (CK) in Islamic Education.

In addition, the creativity and experience of Islamic Education teachers are the determining factors for the effectiveness of pedagogical knowledge (PK) use, such as how they should teach according to the context of the times, how to do dialectics and interact with students, how to increase their motivation, how to choose and sorting technology relevant to Islamic Education material, as well as how to evaluate students and the learning process properly. All of them require creativity and experience or teacher's hours of practice. Afterwards, teachers also have to adapt to the new demands to go beyond memorizing-oriented learning to higher-order thinking skills. Furthermore, TPACK also requires Islamic Education teachers to understand how teachers can adapt, reuse, and repurpose new technology for the classroom (technology knowledge).

TPACK as a new approach to Islamic Education learning models in the pandemic era – following Amartya Sen (Sen, 1999), Masdar Hilmy (Hilmy, 2003, 2013), and Senata Adi (Prasetia & Fahmi, 2020; Prasetia & Najiyah, 2021) – plays three essential functions.

First, the intrinsic function. TPACK as a new approach to Islamic Education learning model must be able to grow and strengthen the intrinsic values of collective life to ensure that every individual's human right is guaranteed. In this context, Islamic Educational institutions must be good at exploring constructive-productive values for the development of a perfect human basic character which is in Islamic language known as *insan kamil* (perfect human). However, it is actually counterproductive if Islamic Educational institutions and or Islamic Educational content dehumanize human values. In this kind of function, humans must be considered as the epicenter in every activity and policy of religious education.

Afterwards, Islamic Education is responsible for exploring the intrinsic values of humanity through its most authentic sources such as the holy book (Al-Quran and al-Hadith) and local wisdom (Kagan, 1998). Oppression, violence and even murder in any name cannot be justified by religion (Lemos & Lemos, 1994). The orientation and content of the Islamic Education curriculum must be directed at strengthening human values and pluralism. It must be considered that the Islamic Education content should be brought closer to the religious mission to make human beings as the real human beings who respect life and human values.

Second, the extrinsic function (Rønnow-Rasmussen, 2015). If the TPACK intrinsic function has the responsibility to grow and strengthen religious intrinsic (esoteric) and the collective life value, therefore TPACK extrinsic function views Islamic Educational content as something that can be utilized and has a great opportunity to be cultivated. Extrinsic is often seen as something that is not sincere and has a certain hidden agenda (Covington & Müeller, 2001; Lepper et al., 1973). Nonetheless, in a psychological perspective, the perfect human development (read: students) cannot only be based on strengthening intrinsic values, but must be

encouraged and motivated by external parties including teachers, parents and a supportive environment (Dörnyei, 1994).

In the essentialism school point of view, – as inspired by Weberian theoretical constructs –religious awareness and belief systems frame the deepest structure of community awareness that provides a blueprint for people's mindsets and behavior from generation to generation (Fukuyama, 2006; Hilmy, 2010; Huntington, 2000; Shils, 1982). It means that, in this pandemic era, optimizing students' potential requires teachers' awareness to enhance their digital awareness and Islamic Education content packaging. Nevertheless, TPACK as a new approach for Islamic Education learning model was deserve to be considered.

The next extrinsic function is to increase an open-minded attitude while reflecting to find appropriate solutions in addressing the complexities of stagnant Islamic Education learning model (Bradley, 1998). It is time for the Islamic Education learning model to adopt the TPACK framework as a new approach in order to increase and stimulate students and teachers' active participation in learning and create a conducive and interactive atmosphere.

Third, the instrumental function. As an instrument, TPACK only plays a role in delivering students to be *insan kamil* (perfect human beings) by - borrowing Peter L. Berger and Thomas Luckmann theoretical constructs – externalizing, objectifying and internalizing (Berger, 2017; Berger & Luckmann, 1991) all good potential in them and is actualized through the real-life praxis. In this context, Islamic Education teachers need to have a positive thinking that every student has potential that can be “externalized” into adaptable skills in accordance with the context of time.

Nonetheless, what happens in our “academic society” is just the opposite. Instead of considering TPACK as a new approach for Islamic Education learning model based on the integration of content, pedagogy and digital, they try to avoid it. Whereas Islam teaches their people not to be anti-change as long as the change brings benefits (*al-muhafadzah ala qadim al-shalih wa al-akhdzu bi al-jadid al-aslah*). In fact, there is a tendency that TPACK is added complexity itself. The presence of TPACK is actually as

a tool for Islamic Education learning to have new nuances without removing the "old" values has been *embedded*.

Fourth, the constructive function. In this context, the world of Islamic Education is required to build a collective loyalty or commitment to differences. Through TPACK, at least the constructive function is increasingly embedded in the teachers and students' minds. Islamic Education must rebuild its identity (re-constructive) with the nuances of technology without abandoning the intrinsic values in it. Through the world of Islamic Education as well, the affirmation of religious values that *wasathi* and national identity can be conducted through appreciation of each individual (Hilmy, 2013). Therefore, when they grow up, each individual is expected to understand and actualize the values of social care and collective life with full of appreciation and respect (coexistence and pro-existence).

Implications of the TPACK Framework in Islamic Education

The TPACK framework helps to develop more adaptive and contextual learning models as well as discover and explain how technology knowledge is implemented in Islamic Educational praxis. It is better to describe the type of knowledge that teachers need (in terms of content, pedagogy, technology, context, and their interactions), hence educators will be better in understanding the different levels of technology integration occur. Furthermore, the TPACK framework has offered several possibilities for promoting research in the teachers' professional development as well as the use of technology by teachers. In fact, it is very possible for teachers to move beyond TPACK as a new approach to Islamic Education learning models in a more "ecological-substantive" way.

In other words, Islamic Education teachers should focus on determining, selecting and sorting out specific Islamic Educational content and appropriate pedagogy and technology design. In brief, if Islamic Education teachers teach Islamic Cultural History subjects, it is no longer the time for students to be told or even forced to memorize a series of history along with the date it happened. Those are the old boring ways. Afterwards, the Islamic Cultural History learning model in the pandemic and digital era, students should be invited to watch and observe videos, then asked to record important

points from the learning video. It is a glimpse of the TPACK application and here is much to be learned from the TPACK framework. At least, there are two implications of the TPACK framework in the Islamic Education context.

First, TPACK has brought new technology often creates new opportunities to represent the content and pedagogy that did not exist before. Initially, Islamic Education teachers have focused on Islamic Education content and pedagogy and nowadays they have become accustomed to formulating and designing or even formatting TPACK-based learning. The emergence of website or online learning sites whether facilitated by government or certain institutions as well as having a significant development of online learning are a good example in which the emergence of new technology has fundamentally changed the way of thinking about pedagogy and content representation (Cole, 2000; Tapscott, 1998). In addition, new devices such as GPS, Android, IOS, and internet 6.0 are contributing greatly to change the mindset and what is taught fundamentally. It is clear that Islamic Education teachers certainly have a set of knowledge about these new tools and are developing new ways and patterns to integrate them in their learning process. In this context, TPACK is actually a “driver of innovation” in pedagogy and content representation.

Second, it is important to realize that most of technology used by teachers has not been designed for educational purposes. It means that technological developments are only a business as usual and not for educational purpose. Therefore, Islamic Education teachers must rethink (re-read) technology in the context of Islamic Education. This kind of phenomenon is called – borrowing Passig's term as quoted by Matthew J. Koehler – a process of melioration (Passig, 2007). This process confirms cognitive knowledge support to adopt a field that is not in its domain (the competence to borrow a concept from a field of knowledge supposedly far removed from his or her domain, and adopt it to a pressing challenge in an area of personal knowledge or interest) (Passig, 2007). Melioration recognizes the importance and need for cognitive skills to obtain knowledge from various domains and synergize it in a unique and effective way. Such reuse is the essence of melioration and can only be done if the teacher understands the “rules of the game”, and is capable enough to know which rules to bend, to break, and

to leave. It requires deep experiential understanding which is developed through intensive TPACK training and practice.

These two implications indicate that TPACK as a new approach in Islamic Education learning model must be repurposed. This research argues that the combination of TPACK framework and melioration idea provides a new framework and knowledge of how Islamic Education teachers can be trained to improve their knowledge horizons about teaching with technology. The most frequent occurrence is the content that drives the tool (and its pedagogical use), and sometimes what a tool can do that can drive content pedagogy. Technology is not an add-on, but is an integral part of teaching performance that cannot be separated. Nevertheless, teachers need to be facilitated and affirmed by related stakeholders in developing contexts for learning that focus more on these three domains of knowledge collectively and not separately or sequentially. It is an act of design.

TPACK as a New Approach in Islamic Education: Challenges and Opportunities

The digitization era, which was originally designed as a scientific endeavor to overcome various disparities of humanitarian issues, was leaving a significant humanitarian problem. We live in a phase of sustained information technological development and Muslims have become accustomed to various ways that can be implemented to fulfill religious and other goals. In Gary R. Bunt's term, Muslims have been entering the era of Cyber Islamic Environments (Bunt, 2000, 2018).

TPACK as a new approach in Islamic Education learning model is quite similar with CIE (Cyber Islamic Environments). Both have the potential to change the aspects of religious understanding and expression in Muslim contexts and the power to enable elements of the Muslim population in the minority and majority arenas to have dialogues (does not have to be peaceful) with one another. In line with traditional forms of knowledge and media about Islam, access to (and possibly ownership of) the Internet has become a significant element of propagation and identity for Muslim individuals and organizations (Berry, 2012; Berry & Fagerjord, 2017; Bunt, 2003; Dangolla, 2019).

In the context of Islamic Education, technology as the underlying TPACK diverts from conventional learning models to educational digitization with a variety of

interpretive models. The implementation of TPACK sometimes rule out the established Islamic Education learning model and offers alternative learning approaches and models. The consequence is the emergence of a digital literacy generation who is able to persuade others in a wider range. This is an opportunity as well as a challenge from TPACK as a new approach in Islamic Education learning model. On the one hand, TPACK has a major contribution in orbiting students as “Islamic Education ambassadors”, but on the other hand Islamic Education teachers must work even harder in instilling digital awareness to students and equip them with various better understanding without losing the distinctive value of Islamic Education.

Islamic Education clearly has the opportunity to provide alternative answers as the antithesis of the digitization process. The antithesis in question is not contradicted and debated one another, but as an endurance strong for teachers and students as well as promoting Islamic Education in a wider range. It is undeniable that TPACK still has a number of problems for the technology industry, especially since the plans is to be applied in Islamic Educational field. In this case, it does not mean to be pessimistic, but the TPACK application needs time to be accepted and adopted in Islamic Education, specifically in a more advanced framework and does not overwhelm it. Therefore, it will not cause problems in the future.

According to Masdar Hilmy’s theory, the implementation of TPACK requires two approaches, namely the accommodative and the responsive model (Hilmy, 2013). If it is translated structurally, TPACK as a new approach in Islamic Education learning model will produce an accommodating curriculum structure and adaptable learning content to the demands of pandemic era that is a scientific structure and learning content that emphasizes the creation of 'know-how' and 'know-why' competencies rather than 'know-what'. In this context, the introductions of basic reasoning’s principles are very relevant to be conducted. In addition, the responsive model through identifying gaps due to the pandemic and digital process. TPACK task as a new approach is to identify which gaps are weaknesses in both learning administrative aspects including lesson plans, attendance, learning event unit, and assessment, and personal aspects involved in learning such as teachers and students, parents, and related stakeholders, to be further

filled by Islamic Education. This gap serves as an entry-point for Islamic Education to carry out its transcendent-prophetic-productive role in the midst of pandemic and digital era.

Both models of this approach require the ideals distribution of these three reasons fairly and equitably; *bayani*, *burhani* and *'irfani* (Hilmy, 2009, 2013). The consequence is TPACK seen in the context of a particular region, for example the Western which is very different from “TPACK” and still “ICT free” in the context of Muslim society. They (the Western) may not be worry at all toward digital-based learning or TPACK as it is today because it has become a tradition, facilities from where they study and has a very supportive environment. However, this case should not be generalized blindly. Ahmet T. Kuru (Department of Political Science @ SDSU, n.d.) has recommended Muslims to regain scientific and socio-economic dynamism – to borrow Gary R. Bunt (Bunt, 2003) – in cyber Islamic environments. To balance the Western educational tradition, Muslims do not have to fully imitate the Western model. Muslims have their own history (Islamic tradition) and authoritative sources (religious sources) including Al-Quran and al-Hadith as sources of inspiration and role models for the revival of science and religious dynamics (Kuru, 2014, 2019).

The case of digitization in this era does not have to rely on a Western-centric view. Many Western's needs are socially and historically constructed reality and may not appropriate to other parts of the world, especially the Islamic world (Gregory et al., 2016; Meyers et al., 2013). It is due to Islamic tradition which is more accentuated on scientific *sanad* (*sanad*, *ijazah*, and so on) (Brown, 1999; Nakissa, 2019; Suhendra, 2019). If Islam is – to borrow the terms of Masdar Hilmy and Andrea Rota – a constructed reality and a social reality, then TPACK in this context is more of a scientific endeavor to overcome various gaps of human problems (Hilmy, 2009; Rota, 2016). The implementation of TPACK as a new approach in Islamic Education learning model requires academic works in order to become a constructed and social reality in Islamic world. These are the opportunities and challenges of TPACK as a new approach of Islamic Education learning model in the pandemic era. It is not impossible, even in

the era of the pandemic, for Islamic Education to be the pioneer of the best education for human civilization.

CONCLUSIONS AND SUGGESTIONS

The pandemic and digital era have been and always will continue to be an essential part of Indonesian Contemporary Muslim life. Nevertheless, the facts must be recognized, Islamic Education has proved to be “sporadic” in its response to this era, taking it without much thought and rejecting it without a backup plan. Those that get TPACK, or technology-based instruction, continue to struggle to deliver the best teaching achievable. For those who are agitated and apologetics, TPACK, as a new pedagogical approach in Islamic education learning model, has not yet produced innovation. Nonetheless, most Muslims are using digital “blessings” to a limited extent. In the pandemic era, they were unable to play a role in determining the variants and intensity. In the production capital pyramid, Muslims are still at the bottom layer as consumers and objects of TPACK. This situation has emerged as a consequence of Islamic education's inability to provide opportunities for the establishment of alternative technologies suitable of elevating Muslims' respect to that of respectable producers. In these conditions, a paradigmatic leap in Islamic education reasoning is necessary, one which is competent of changing the framework of thinking and Islamic education praxis in responding to the era of pandemics and digitization, shifting from objects to actors or subjects, and from consumers to producers. After that, this is a homework for all of us. What has to be prepared is how Muslims construct learning models that are responsive to the challenges and requirements of the pandemic era without compromising embedded and established principles and values.

Therefore, Muslims will have psychological and sociological readiness in facing an unpredictable future eras as a consequence of the reform of this kind of Islamic education model. In the pandemic era, TPACK as a new pedagogical approach to Islamic education learning models enables Islamic education teachers to become change agents, encouraging Islamic education that is more equitable, adaptable, and reliable to the expectations of the times

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