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The Concept of TPACK through Exchange Orientation Program in Boosting Madrasa Student Achievements

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Abstrack
This qualitative study investigates the application of the Technological Pedagogical and Content Knowledge (TPACK) framework through an Exchange Orientation program designed to enhance student achievement in madrasahs. The research employs in-depth interviews and focus group discussions with educators participating in the program to gather insights into their experiences and perceptions regarding the integration of technology in teaching practices. The findings reveal that the Exchange Orientation program fosters collaborative learning among teachers, enabling them to share effective strategies for incorporating technology into their pedagogy and content delivery. Participants reported increased confidence in using technological tools, which subsequently led to more engaging and interactive learning experiences for students. The study highlights the critical role of professional development initiatives that utilize the TPACK framework in transforming teaching methodologies and improving student learning outcomes in madrasahs.
Keywords: *TPACK, Exchange Orientation, Madrasah Students*

BACKGROUND

In communicative technology that influence the development of education across various parts of the world. The education system has undergone significant changes, transitioning from traditional (conventional) systems to digital-based systems. Initially, the process of knowledge transfer occurred in a closed environment, limited to classrooms. However, today, the learning process takes place openly, unconstrained by time and space. As a result, teachers, as the main actors in the knowledge transfer process and primary supporters of learning, are required to master supportive media in the learning activities.

A teacher's proficiency in using communicative technology is also clearly outlined in regulations, specifically in the Minister of Education and Culture Regulation No. 16 of 2007. This regulation discusses the utilization of informative technology to support educational development (Miskiah et al., 2019:38). This underscores the government's significant attention to the interactive use of technological media for teachers. As the key players in the continuity of classroom learning, teachers are required to possess superior competencies to create a learning atmosphere suitable for the 21st century. Today's learners are very familiar with change, particularly related to technology. To keep pace with this, it is essential for teachers to develop learning activities and integrate them into their teaching practices.

Madrasah teachers also bear significant responsibility for implementing Technological Pedagogical and Content Knowledge (TPACK). Not only are they responsible for delivering and practicing the material, but they also have the duty to cultivate good morals among their

students. The responsibilities given to madrasah teachers become more complex when faced with two major tasks: delivering content related to faith and Islam, and integrating it with technology and media while considering both its positive and negative impacts. With the presence of technology and other sources of information, it is hoped that these factors will serve as motivation to make educators' work lighter rather than the opposite.

The integration of learning and technology has become an urgent issue in the field of education, especially during the pandemic when learning is conducted online and not in traditional classrooms. The learning process is carried out online using various technological devices that may not have been imagined before. This situation arose due to conditions that did not support direct or face-to-face learning. Likewise, it is not feasible to eliminate learning processes, such as closing schools. Amidst this uncertainty, educators are required to think critically and utilize media and technology to ensure that learning continues outside of traditional settings (Rita, 2020:238).

The readiness and ability to integrate technology into the learning process are manifestations of teacher professionalism. Educators are expected to possess skills in managing the learning process and innovatively and creatively using technological media in the 21st century so that the output and learning processes meet expectations (Poncojari, 2020: 5). The complex tasks of a teacher, along with various demands regarding learning administration and future vision, can hinder optimal implementation of some goals. Educators certainly hope that students can develop their potential, achieve success, and bring pride to their madrasah.

In light of this potential, vision, and noble ideals, Madrasah Aliyah Al-Manar collaborates with Rumah ABI, an organization oriented towards education aimed at forming a competitive generation of children under the age of 17 through scholarships and exchange programs both domestically and internationally. The programs provided by Rumah ABI utilize several methods such as observation, drilling, exploration, exposure, and performance, which guide participants step by step from the beginning to the peak using technology-based applications combined with the curriculum of subjects offered at MA Al-Manar.

The use of learning technology in partnership with Rumah ABI also collaborates with Information Feeder: PPI Dunia, ASEAN, the UN, the Ministry of Indonesia, Embassies, Foundations, and institutions that offer student exchange programs and national events. This is one of the reasons why MA Al-Manar has established cooperation with Rumah ABI; in addition to the programs offered, there is also a strong emotional connection. These factors provide the rationale for implementing the cooperation program, as the madrasah requires a platform to enhance students' academic and non-academic achievements using the right technology, methods, and approaches.

The involvement of multiple organizations, such as PPI Dunia, ASEAN, the United Nations, and Indonesian government bodies, further enriches the experience of MA Al-Manar students by offering a wide range of opportunities for student exchange and participation in national events. By establishing partnerships with such prominent organizations, the program ensures that students are exposed to diverse international perspectives and experiences. This type of exposure not only broadens their understanding of global issues but also enhances their cultural competency—an essential skill in today's

interconnected world. The emotional connection with Rumah ABI, as well as the emphasis on quality education and appropriate learning tools, makes the collaboration particularly impactful for students at MA Al-Manar.

Moreover, this partnership plays a crucial role in ensuring that students have access to the most effective learning platforms and opportunities for growth. The focus is on creating an environment that fosters both academic and personal excellence, empowering students to excel in various fields. The combination of effective learning technology, expert mentorship, and collaboration with established organizations offers a well-rounded approach to education that goes beyond traditional classroom instruction. It provides students with practical experiences, exposure to new cultures, and a supportive community—all essential components for shaping successful future leaders. This comprehensive approach ensures that students are not only academically proficient but are also prepared for real-world challenges and opportunities.

METHOD

This study employs a qualitative research design to explore the implementation of the Technological Pedagogical and Content Knowledge (TPACK) framework through the Exchange Orientation program in enhancing student achievement at Madrasah Aliyah Al-Manar. A qualitative approach allows for in-depth exploration of participants' experiences, perceptions, and the contextual factors influencing the integration of technology in teaching practices. The participants of this study include teachers and students from Madrasah Aliyah Al-Manar who are involved in the Exchange Orientation program. A purposive sampling technique will be used to select approximately students in X Class, ensuring a mix of educators with varying levels of experience in using technology in their teaching. Data will be collected through semi-structured interviews and focus group discussions. The semi-structured interviews will allow for open-ended questions, providing participants the opportunity to express their thoughts and experiences regarding the TPACK framework and the Exchange Orientation program. Focus group discussions will facilitate interactions among participants, encouraging them to share ideas and perspectives collaboratively.

RESULT AND DISCUSSION

Integration of Technological Pedagogical and Content Knowledge (TPACK) in Learning

The Technological Pedagogical and Content Knowledge (TPACK) concept was proposed by Mishra and Mathew J. Koehler as an advancement of Shulman's model (1986) regarding knowledge, content, and pedagogy (Pedagogical Content Knowledge or PCK). The development made by Koehler and Mishra involved adding the element of "technology," thus transforming PCK into TPACK (Koehler, 2014: 101-110).

TPACK is a concept known for understanding the theoretical framework of educators' knowledge and its implementation in effective and efficient teaching. Competence related to technology, pedagogy, and content or media knowledge is a fundamental aspect that educators must possess in the present era. The competence of educators to learn and master technological media, pedagogy, and content (TPACK) becomes an authority that educators must have in the process of transfer of knowledge, as teachers are responsible as the sender

of information and students as the receiver (Ibnu Rofi, 2019). There are three main scientific foundations that form TPACK, namely Content Knowledge, Pedagogical Knowledge, and Technological Knowledge. Content Knowledge (CK), this knowledge pertains to various subjects that are the responsibility of a teacher. It refers to theoretical knowledge, ideas, content, approaches, and practices in the development of content knowledge. Pedagogical Knowledge (PK), this is the educator's knowledge of various teaching strategies, learning methods, and instructional practices. Technology Knowledge (TK), this is the educator's knowledge of technology, both conventional and modern, which can be integrated into the learning process.

The integration of the Technological Pedagogical and Content Knowledge (TPACK) concept is a conscious effort to combine fundamental concepts as a way to hone and expand students' knowledge and skills. This "demand" encourages educators to develop the ability and creativity to prepare the best possible instruments and components, concepts, and appropriate models in teaching and learning (Evi, 2019:83). It is not impossible that the integration of TPACK (TK, PK, and CK) in the learning process will create a more vibrant, efficient, and innovative learning environment with the help of technology.

Advancements in science and technology (S&T) have spurred the growth and development of technological media beneficial across various life sectors. This ranges from traditional (conventional) technologies to modern (digital) technologies in today's industrial era. Such technological advancements touch upon numerous aspects of human life, including business, economy, politics, health, and education. Consequently, educators are required to master technology and possess adequate knowledge in operating various technologies as a necessity for providing innovation and creativity in teaching (Muhasim, 2017:46).

Technology-based educational campaigns are being promoted everywhere and have even become global programs, as exemplified by the Sustainable Development Goals (SDGs). This adds a significant "homework" task for educators to enhance their competencies by understanding and utilizing technology to make the learning process more enjoyable and less monotonous.

It is important to note that today's youth are claimed to be a generation familiar with technological matters. This generation prefers instant results, often overlooking the importance of the process (Ishak, 2019: 178-186). Recognizing these characteristics, educators are called to create a scheme for change in the teaching and learning process. One way to achieve this is by integrating technology with learning media. The combination of these two elements can develop and enhance learning as well as learning resources (Miskiyah, 2019:132).

The use of digital technology in the learning process will not be effective without the teacher's knowledge of pedagogical competencies and mastery of the subject matter. This is echoed by Baturay et al., who state that the use of technology in the learning process does not guarantee effective learning if educators do not employ pedagogical approaches (Baturay et al., 2017:1-23). This understanding has prompted Koehler and Mishra to share the TPACK framework, which emphasizes the continuous integration of pedagogy, technology, and content knowledge in the classroom.

Technological and Content Knowledge (TCK) in the exchange program must consider which methods are appropriate for the material to be taught to students. Additionally, educators need to master the characteristics of the material to be taught. This way, we can see the relationship between technology and content combined in the learning process. For example, the characteristics of psychomotor materials or practical competencies for students require using practical media as a medium for practice. We can leverage technological advancements to address these challenges using digital technologies like videos or conventional technologies like puppets or other props. Such technologies can facilitate students in practicing the materials presented by their teachers.

Pedagogical Content Knowledge (PCK) in the learning process requires teachers to master fundamental pedagogical knowledge. This pedagogical knowledge includes several aspects such as classroom management strategies, instructional strategies, and assessment. With this knowledge, educators can understand problems or issues that can be addressed through organization, representation, and alignment with students' talents and interests (Koehler, 102).

The integration of Technological Pedagogical and Content Knowledge (TPACK)—the combination of technological concepts and pedagogical understanding—is crucial in teaching. By understanding the characteristics or traits of students, it is necessary to plan the use of technology that aligns with students. For instance, when a teacher teaches at a senior high school level. The integration of TPACK in learning and improving student achievement at MA Al-Manar includes: a. Students are able to understand the features available in the canvas application or exchange application to analyze practice questions to assess their abilities and knowledge regarding the exchange world. b. Students can describe the historical trends in the development of education in the current era and identify the fundamental factors that drive these trends. c. Students can summarize the factors related to obtaining events or programs. d. Students can summarize the concept of exchange and how the registration flow system works until they obtain a program. e. Students can find solutions to problems related to their potential and personal development.

Exchange Orientation Boosts Student Achievements at MA Al-Manar

Exchange Orientation is an online class using an LMS (Learning Management System) feature consisting of 12 chapters of learning materials to provide motivation, information, strategies, and supervision for student exchange scholarships and other events. The learning is delivered through Canvas, YouTube, and blogs. All materials can be accessed based on free time, making them available anytime and anywhere as long as there is an internet connection. The Madrasa provides a strict schedule for the exchange program starting from January to February 2022. Every day after the learning sessions, selected students are required to participate in the exchange program, which runs from 11:30 AM to 2:00 PM (WIB).

The exchange program consists of several chapters of selected materials directly mentored by the owner of Rumah Abi, Miftachudin M.A. Besides being the owner, he is also the director of KKI (International Special Class) at a state university in Salatiga. He previously earned a master's degree through an exchange program in England, giving him a

special interest in the field of education. Additionally, the students of MA Al-Manar who participated in the exchange program were selected students from grades X-XII.

For a full month, MA Al-Manar students studied the concepts of exchange. The preparation of these concepts required the selected students to participate in the program using modern technological devices. Students were given opportunities to seek information about both national and international events. After finding these events, students were required to participate in these programs. Through collaboration with Rumah ABI in the exchange program, many students who participated in the exchange program won gold to bronze medals in national competitions within a month after the training, including:

Table 1. List of students who participated in the exchange program

No	Name	Achievement	Event	Level
1	Siti Nur Afifah	Silver Medal in Chemistry	National Science and Social Competition 3.0 2022	National
2	Siti Cahyanging Safitri	Silver Medal in Physics	National Science and Social Competition 3.0 2022	National
3	Hanifah Nurul Fajriyah	Bronze Medal in Mathematics	Pre-KSM POSI 2022 Competition	Central Java
4	Indra Gunawan	Gold Medal in Islamic Education (PAI)	National Edusain Olympiad	National
5	Kurnia Rahmawati	Gold Medal in Islamic Education (PAI)	National Edusain Olympiad	National
6	Hanifah Nurul Fajriyah	Gold Medal in Islamic Education (PAI)	National Edusain Olympiad	National
7	Siti Nur Afifah	Silver Medal in Biology	National Edusain Olympiad	National
8	Siti Aisah	Silver Medal in Biology	National Edusain Olympiad	National
9	Kurnia Rahmawati	Silver Medal in English	National Edusain Olympiad	National
10	Wahyu Arif	Bronze Medal in Geography	National Edusain Olympiad	National
11	Salma Khoirina	Bronze Medal in Islamic Education (PAI)	National Edusain Olympiad	National

These achievements highlight the dedication and enthusiasm of MA Al-Manar students in pursuing excellence. Their success was not limited to just participation; they excelled by winning various medals across disciplines such as Chemistry, Physics, Mathematics, Islamic Education, Biology, English, and Geography. This accomplishment was a result of rigorous preparation, strategic learning, and the mentorship provided by Rumah ABI, which guided them through understanding the requirements and opportunities available in such competitions. The students demonstrated their competence in various

subjects, proving that the exchange program was highly effective in preparing them for challenging events.

The exchange program's focus on using modern technology also played a significant role in enhancing the learning experience. By utilizing online resources, students had access to a wide range of materials that were pivotal in expanding their knowledge and skills. This exposure to technology not only prepared them for academic competitions but also equipped them with valuable skills for future endeavors. The achievements of MA Al-Manar students in such a short period reflect their ability to adapt, learn, and perform well under the guidance of skilled mentors and a well-structured program.

The program's emphasis on comprehensive development also ensured that students did not just focus on academic excellence but also gained important skills like critical thinking, effective communication, and collaboration. These skills are crucial when competing on a national level, as they enable students to express their ideas clearly and adapt to various challenging situations. The collaboration with Rumah ABI brought in expertise that was essential in building both the technical knowledge and the confidence required for excelling in competitions. The combination of rigorous study, mentorship, and access to cutting-edge technology allowed the students to fully prepare for any academic challenge that came their way.

Furthermore, the partnership between MA Al-Manar and Rumah ABI underlined the importance of external support in educational programs. The involvement of an external institution, led by experienced mentors like Miftachudin M.A., added significant value to the learning experience. The mentorship provided personalized guidance and insight into how to navigate the complexities of both national and international events. By integrating technology and structured learning with the guidance of experienced educators, the program proved to be a comprehensive approach to enhancing student performance, thus ensuring that the students were not only well-prepared academically but also confident in pursuing opportunities beyond the classroom.

CONCLUSION

Advancement of Shulman's model (1986) regarding knowledge, content, and pedagogy (pedagogical content knowledge or PCK). TPACK consists of three interconnected foundations: TK (Technological Knowledge), PK (Pedagogical Knowledge), and CK (Content Knowledge). Exchange Orientation is an online class using an LMS (Learning Management System) feature consisting of 12 chapters of learning materials aimed at providing motivation, information, strategies, and supervision for student exchange scholarships and other events. Through the exchange program partnership with Rumah ABI, many students participating in the exchange program won gold to bronze medals in national competitions within one month after the training.

REFERENCES

Baturay, Meltem Huri Sahin Gökçearslan, and Semsettin Sahin. 2019. *Associations among Teachers' Attitudes towards Computer- Assisted Education and TPACK Competencies,* Informatics in Education 16, no. 1

Hidayat, W. N., & Nursikin, M. (2023). Konsep pendidikan nilai menurut ki hadjar dewantara dan nicolaus driyarkara. *Afeksi: Jurnal Penelitian dan Evaluasi Pendidikan*, *4*(1), 1-8.

Hidayat, W. N., Nurlaila, N., Purnomo, E., & Aziz, N. (2023). Technological Pedagogical and Content Knowledge (TPACK) in Islamic Religious Education in the Digital Era. *Al Hikmah: Journal of Education*, *4*(1), 93-106.

Hidayat, W. N. (2022). *Internalisasi Akhlak Kepada Sesama Melalui Metode Cerita Dan Tanya Jawab Pada Santri Tpq Al-Ikhlas Di Pusat Hiburan Malam Sarirejo, Kelurahan Sidorejo Lor Kota Salatiga Tahun 2022* (Doctoral dissertation, IAIN SALATIGA).

Hidayat, W. N., & Malihah, N. (2023). Implementasi Beberapa Teori Belajar Dalam Aplikasi Sholat Fardhu (Studi: Teori Koneksionisme Edward L. Thorndike, Teori Belajar Medan Kurt Lewin, dan Teori Kondisioning Ivan Pavlop di Masjid Al-Ikhlas Sarirejo). *Attaqwa: Jurnal Ilmu Pendidikan Islam*, *19*(1), 1-10.

Hudori, A., Ritonga, A. H., Anwar, K., & Hidayat, W. N. (2024). Kiai's leadership in human resource management of islamic boarding schools in jambi indonesia. *International Journal of Post Axial: Futuristic Teaching and Learning*, 109-117.

Fadlurrohim, Ishak et al., 2019. *Memahami Perkembangan Anak Generasi Alfa Di Era Industri 4.0*, Focus: Jurnal Pekerjaan Sosial 2, no. 2.

Koehler, Matthew J. et al., 2014. *"The Technological Pedagogical Content Knowledge Framework," Handbook of Research on Educational Communications and Technology*: Fourth Edition.

Komalasari, Rita. 2020. *Manfaat Teknologi Informasi Dan Komunikasi Di Masa Pandemi Covid-19*, TEMATIK - Jurnal Teknologi Informasi Dan Komunikasi 7,No. 1.

Miskiah, Yoyon Suryono, and Ajat Sudrajat. 2019. *Integration of Information andComunication Technology into Islamic Religious Education Teacher Training,* Cakrawala Pendidikan 38, no. 1

Ms, Rohmad. 2013. *Kompetensi Guru PAI dalam Pembelajaran Berbasis Teknologi Informasi*, ISLAMICA: Jurnal Studi Keislaman 8, no.1

Muhasin. 2017. *Pengaruh Tehnologi Digital, Terhadap Motivasi Belajar Peserta Didik,Palapa,* Jurnal Studi Keislaman dan Ilmu Pendidikan Vol. 5, Nomor 2

Rahmadi, Imam Fitri. 2019. *Technological Pedagogical Content Knowledge (TPACK): Kerangka Pengetahuan Guru Abad 21*, Jurnal Pendidikan Kewarganegaraan Vol. 6 No. 1

Rofi, Ibnu Nurrita Sabrina. 2019. *Pengintegrasian TPACK Dalam Pembelajaran Transformasi Geometri SMA untuk Mengembangkan Profesionatas GuruMatematika*. SJME (Supremum Journal of Mathematics Education), Vol.3

Rusydiyah, Evi Fatimatur. 2019. *Teknologi Pembelajaran Implementasi Pembelajaran Era 4.0*. Surabaya: Uin Sunan Ampel Press.