Industrial Revolution 4.0: Innovation and Challenges of Islamic Education Teachers in Teaching

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Abstrak

Education is an important agenda that needs to be paid attention to, since the next generation to be born is largely influenced by its education. Even the rise and fall of a nation depends on the amount of education it receives. The education field is not static, but instead, it is constantly evolving. The education system in Malaysia requires an effective blueprint to ensure that it alligns with the globalisation era. Of course, it is undoubtedly based on Falsafah Pendidikan Negara that upholds the Rukun Negara. Nonetheless, despite of the vast technological advancement and innovation today as an effect of 21st century globalisation and industrial revolution 4.0, the main natinal education objective needs to be preserved to ensure it does not digress to the point of failure. Being a core subject that needs to be taken by each muslim student, the Islamic education subject also needs to be involved in any form of innovation and transformation that takes place today. Nonetheless, the teaching and facilitating of Islamic educaton need to achieve its ultimate goal, which is to produce a muslim generation that takes the role as both servant and vicegerent of Allah on this earth. This paper intends to analyze the latest technological advancement and innovation in the education world as well as the challenges it poses towards the Islamic education teachers.

Kata Kunci

Islamic Education Teachers, Innovation, Challenges, Teaching

Introduction

Teaching and learning innovation is an important feature to be cultivated among an Islamic education teacher as it is part of their main task (Ab. Halim 2006; Kamarul Azmi & Ab. Halim 2007a, 2007b). It cannot be denied that education plays an important role in determining the future of a society and nation. The upcoming generation will plentifully depend on these form and pattern of education provided. Despite its aim to produce knowledgeable and skillful human

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beings in a particular field, education also serves to produce upstanding virtuous personalities. This is because, regardless of how high or how great the person is, whether they are knowledgeable or a hand full of skilled, with the absence of moral value, surely will bring failure in building the country. Coincide with the message brought by the prophet Muhammad SAW's that exhibit the importance of morals in Islam (Asmawati et.al 2017). However, the importance of the role of 'aqidah or faith to the Muslims is preferred as it is the basis that determines the practice and behavior accepted by Allah SWT. It is of no use for a person to have a moral character or morality, but he does not trust and obey the rules and laws of Allah SWT. Likewise, by adhering to authentic and genuine faith, the Muslim individuals will realize their function as' abid and caliph of Allah SWT (Asmawati 2005). Hence, the community and the nation need to ensure that the concept and implementation of education benefit both the world and the hereafter.

In general, education is a continuous process of educating and shaping people into meaningful situations in the world and the hereafter (Ahmad 1997). From an Islamic perspective, education can be summarized as follows: Islamic education is the process of educating and training the mind, the physical and the spiritual of human beings based on Islamic values derived from al-Quran and as-Sunnah revelation to produce human beings who devote themselves to Allah SWT.

The above definition clearly indicates that Islamic education is a holistic, integrated and a balanced paradigm. It not only emphasizes the intellectual and physical elements, but also the spiritual elements that will bring happiness and prosperity in the worldly life and the hereafter (Mujani, 2012). It coincides with the word of Allah SWT in surah al-Baqarah, verse 208 which means: "O you who believe, enter Islam completely..."

Similarly with the implementation of the Islamic Education system (PI) should always underpin the PI philosophy embodied as follows:

> "Islamic education is an ongoing effort to convey the knowledge, skills and appreciation of Islam based on the Quran and as-Sunnah, in shaping the attitudes, skills, personalities and life-views as a servant of God who has the responsibility to develop self, society, the surroundings and the nation towards achieving good in the world and prosperity in the hereafter (Curriculum Development Center, 2005)."

Moving backward to the development of PI's in Malaysia, it is clearly stipulated the persistent improvements and enhancement efforts are being made to ensure that it is always in tandem with changes and times. Hence, how fast the changes occur in various aspects of the present day, the Islamic education system needs to preserve and sustain the goals and vision of PI to ensure balanced and integrated human development. Therefore, the PI is not left behind to deal with modern technological change and innovation to ensure it is relevant and co-exists in the national education system. PI teachers play a vital role in producing people who are capable of meeting the 4th industrial revolution and the 21st-century challenge without disregarding the Islamic values. Just as Islam itself requires its people to make changes towards improvement and progress in life. The word of Allah SWT in Surah Ar-Ra'du, verse 11 which means: "Surely, Allah does not change the condition of a people unless they change themselves".

Islam also encourages its people to think creatively and critically to bring changes and reforms in life or firmly create an innovation. Allah S.W.T also emphasized this as in his word in Surah al-Baqarah, verse 219 means:

> "They ask you about wine and gambling. Say, "In both there is great sin, and some benefits for people. And their sin is greater than their benefit." And they ask you as to what they should spend. Say, "The surplus". This is how Allah makes His verses clear to you, so that you may ponder".

Hence, the question is, to what extent is the Islamic Education teacher prepare to face the challenge of digital technology and innovation in teaching and facilitating (PdPc) today?

Implementing e-Learning in Malaysia education curriculum is now a brand new breath for Gen Z and Alpha generations. Media that originally started from the information transfer of the airspace, which is now known as radio is dramatically evolving to the spread of digital media. This situation leaves an impact and creates awareness of the community that the methods of communication and the distribution of knowledge are no longer through bleached and white chalk like the former era. According to Mohamed Amin and Norazah (2013), lectures at the lecture rooms can no longer be conventional if they want to become university graduates who are in line with the current flow of creative and innovative technologies. Teaching here includes teaching in the classroom that experienced digital technology explosions. With respect to this, teachers or instructors should initiate steps to identify the types of technologies that are capable of connecting the understanding of the new generation to the older generation. This is due to the existence of gadgets such as computers, smartphones, and software that is easy to use for learning whether inside or outside the classroom.

The digital world is bound to meet the needs of the latest generation. Various digital platforms such as Facebook, Pathbrite, Youtube, Telegram, Instagram, Wechat, and WhatsApp are now a new world of communication and intercourse between generations to generation. The authenticity and valuation of knowledge are no longer same as the old times where the process of seeking knowledge is from one to another teacher compared to the latest generation who receive information independently through the gadget without evaluating the truthfulness of the information. Generally, this generation chooses the things that are desirable and necessary to them only while other are left abandoned. Hence, a teacher or instructor should have started using by assessing how and whether it is appropriate and capable of attracting this new generation.

The latest Z-generation (1998-2009) and Alpha-generation (2015 up to now) have unique features and distinctions that require us to understand them in depth. According to Tapscott (2015), this generation is born surrounded by the use of the internet and the way they understand the knowledge or even the world is by browsing on one particular issue. Based on Mac McCrindle's statement (2014) "Emphasize the common experience of people born in the same historical period which refers to their technological knowledge and historical experiences", shows that a generation is formed with the existence and change of technology that happens simultaneously where the previous generation was experienced the same phase and the new

generation learned from each of these changes. Figure 1 below shows the tools owned by each of the generation phases.
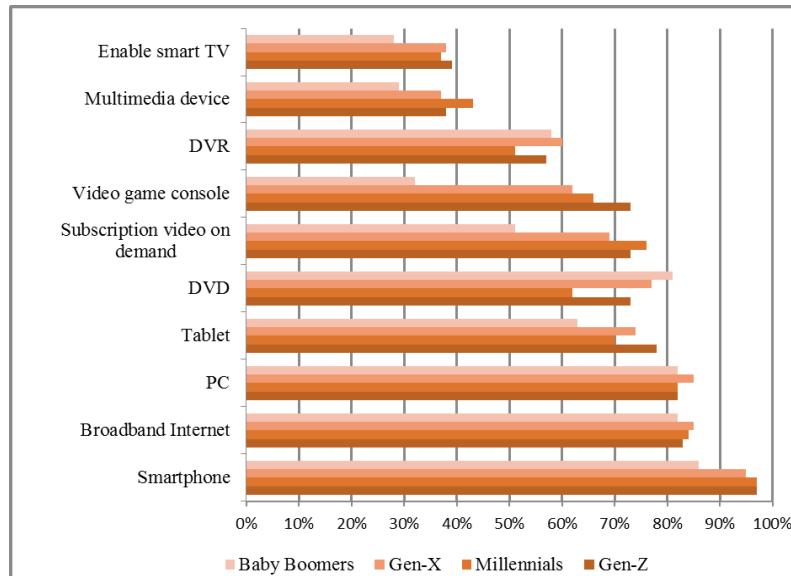
Figure 1: Graph of household device ownership by generation.

Source: https://www.recode.net/2017/7/17/15961370-millennials

Based on Figure 1, Millennials and Z generation seems to monopolize digital use especially the smartphones. The Millennials and Z generation are highly engaged in experiencing digital illustrated experience with challenges, scoring and as a source of income. David Kirkpatrick (2017) argues that the Millennials and Z generation are emphasized more on the digital needs for the sake of inner satisfaction of experiencing the virtual world despite the need to spend their money in buying the digital accessories. In fact, he also described the generation of Millennials and Z as a 'loyal software user' generation. This situation will certainly open up the opportunity for digital entrepreneurs to marketize new software such as Madlips, Tiktok, Bigo, Snapchat, Instaframe, Perfect365, and others.

Digital games have evolved from the use of black and white colors and blocks to the mastery of organic and geometric forms which has slowly resembled the real world. This has encouraged the young generation to experience themselves into the virtual game. With the existence of the Augmented Reality (AR) technology, a combination of virtual objects and the real world and the Virtual Reality (VR) which is a combination of a designated artificial world which would give the true feeling to the consumer in experiencing the 3D dimensions world (refer to figure 2). Likewise, the latest Transmogrified Reality (TR) which is still under survey by the world's largest web company, Google will be in the new generation's must-have list.
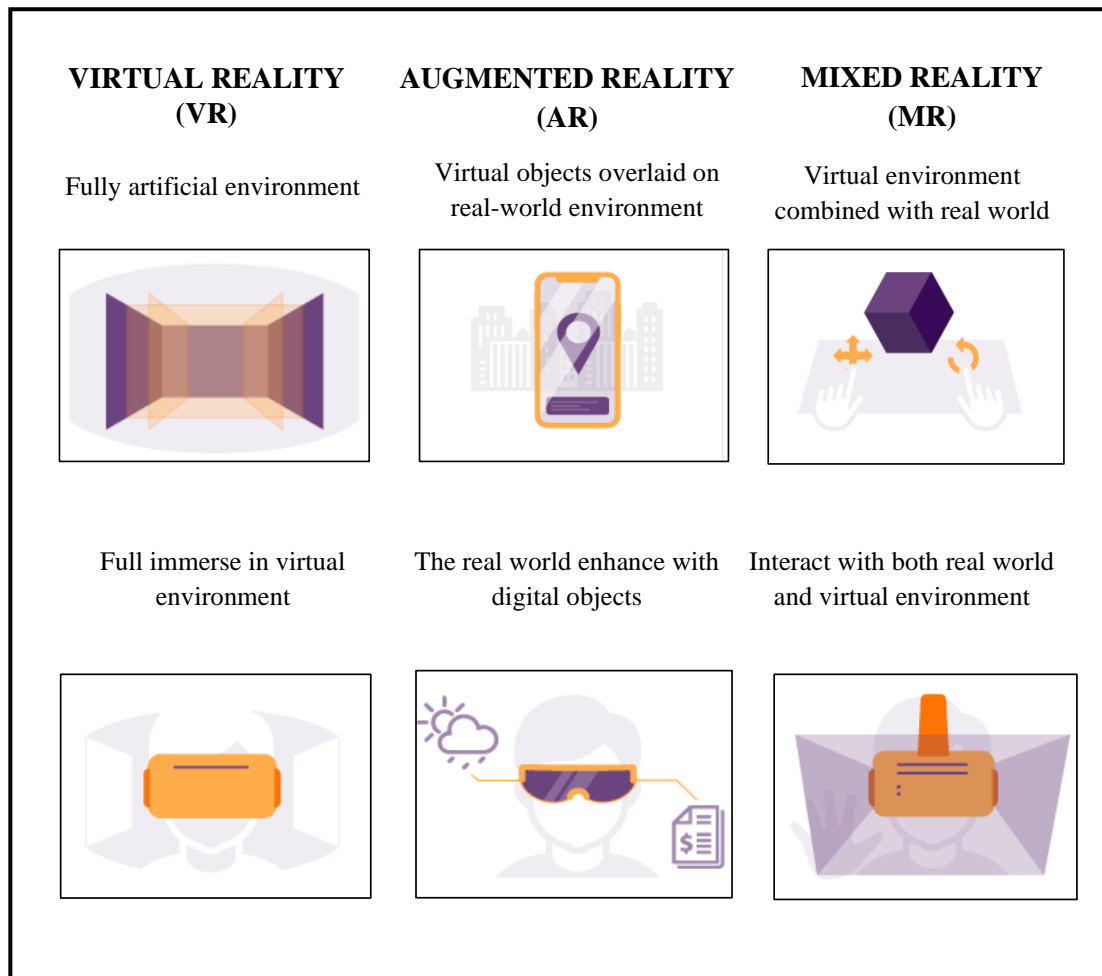
VIRTUAL REALITY (VR)	AUGMENTED REALITY (AR)	MIXED REALITY (MR)
Fully artificial environment	Virtual objects overlaid on real-world environment	Virtual environment combined with real world
Full immerse in virtual environment	The real world enhance with digital objects	Interact with both real world and virtual environment

Figure 2: Ilustration application of VR, AR and MR's use in achieving industry and education objectives.

Sources: https://rubygarage.org/blog/difference-between-ar-vr-mr

The development of the 4th Industrial Revolution (IR 4.0) surprised people with the new paradigm including in education. Generally, the 4th Industrial Revolution (IR 4.0) encompasses the discovery of new technologies such as automation, the Internet of Things (IoT), analysis and big data, simulations, system integration, robotic applications and clouds that will spur the progress of the modern landscape. The newly introduced era is said to occur once in a generation which haven't been yet discovered. 2016 remarks the beginning of the Fourth Industrial Revolution (Industry 4.0) which is said to be the continuation of the third version of the automation and the Internet and other physical processes including the cyber-physical system. Industry 4.0 is the discovery of various new technologies, including automation, analysis, and large data, simulations, integration systems, robots, clouds, Internet of Things (IoT), and similar things. It involves a technology automation that creates a new challenge for all sectors in the country that require them to make changes in line with digital transformation to remain competitive other than accelerating the development of the modern landscape (Mohd Fairuz, 2017). This revolution denotes the appearance of a physical cyber system involving completely

new capabilities for human technology, machines, and new methods. In other words, this automation technology is seen as a technology that no longer depends on human beings. The Industrial Revolution 4.0 also addresses the dependency of humans on energy sources that will significantly change the nature of future careers.

Transformation and Innovation in Teaching and Moderning

Transformation or change in the education of Malaysia can be assessed through student current level of learning and development. Changes in student learning can be seen through a holistic approach that emphasizes the intellectual values, spiritual, emotional, and physical development, in line with the strong national identity (Malaysia Education Blueprint, 2012). Teachers are the drivers of education development by responding to challenges in education transformation through Malaysia's Education Development Plan (PPPM) 2013-2025. Through this transformation, the civilization of the nation can be further reinforced through the creation of dynamic human capital. Teachers also play a vital role in ensuring that the young generation is given quality education in responding to the advancement era. Educators need to preserve the development of professionalism to support the implementation of Malaysia education transformation. Through quality and sound education, we are able to produce the world-class students that possess a critical thinking skill of the 21st century in line with the National Education Philosophy (M. Thirugnana 2018). Therefore, in order to meet PPPM's requirements, the curriculum transformation has been enhanced through the implementation of the Primary School Standard Curriculum (KSSR) replacing the Primary School Curriculum (KBSR) starting from 2011. The Secondary School Standard Curriculum (KSSM) stimulates high-level thinking skills, problem-based learning, contextual learning and collaborative learning (Kementerian Pelajaran Malaysia 2016).

The transformation also does not set aside the development of PI subjects. The curriculum transforms emphasizes the use of various approaches in PdPC that provide more hands-on learning process such as discovery inquiries, experiential learning, problem-based learning, constructivism learning, contextual learning, self-regulating learning, master learning and outdoors learning. The approach used must provide a fun learning opportunity for students and take into account the diversity of student intelligence. Additionally, the explosion of modern and digital technology can help the PdPC process to be more attractive and facilitate the understanding of students. In conclusion, through the improvement and enhancement of the curriculum, it can enhance the teaching of PI where previously the PI teachers focus only on delivering knowledge to students, but recently they have to be able creating a first-class human capital (Maimun et al 2016). Teachers should always be prepared and make improvements in teaching to diversify the pedagogy used in teaching style. PI teachers need to work harder to improve PI teaching to prepare students facing the current changes and challenges.

The transformation effort on the development of PI curriculum in the form of content standards and learning standards is a form of innovation that is in line with the mainstream. Content standards are specific statements on what students should be aware of and can do during a school period includes the aspects of knowledge, skills, and values. Learning standards are a set of quality criteria and indicators of learning and achievement that can be measured by each content standard. Without a clear knowledge of the curriculum based on content and

learning standards, it may be difficult to define 'road-map' or teaching and learning programs towards achieving the goals and objectives of a subject. In addition, the teacher's style or method of delivery, student learning evaluation system, textbook preparation, and teaching aids, and education and selection of teacher should also be transformed. The PdPC process is no longer centered on the teacher alone, but the main focus is student-centered either individually or in groups (Asmawati and Mohd Aderi 2016).

Other than to intensifying the education transformation, the fact that the world has moved rapidly in term of the innovation in various forms and aspects including in the education world should be taken a serious action. Hence, one of the government's efforts to intensify innovation and program activities in education is to develop the Education Development Master Plan (PIPP). It turns out that the role of education has been outlined for the success of PIPP's mission of enhancing the nation's knowledge and innovation capability as well as cultivating first-class minds and addressing sustained and productive socioeconomic imbalances. Based on this mission, the goals aimed at education level are 1. Develop thoroughly the potential of an individual to produce a balanced either in physical, emotional, spiritual and intellectual of a person; 2. To enhance the creativity, innovation, and culture of students; 3. To engage in science and technology and lifelong learning; 4. To prepare a more efficient, effective and world-class education system. 5. To make Malaysia the center of excellence in education; and 6. To upgrade the quality of Malaysian Education System internationally.

By referring to the Malaysian Education Development Plan (2012), the Ministry of Education will ensure the implementation of an integrated curriculum based on international benchmarks to produce students with the skills to compete globally. The curriculum will foresee thoroughly on every student's intellectual, spiritual, emotional, and physical aspects, and emphasize the application of knowledge and development of critical, creative, and innovative thinking and high-minded thinking. The curriculum also gives students the opportunity to learn art, engage in at least one sports and other co-curriculum activities. The next focus is to ensure that all schools are equipped to support the enhanced curriculum and pedagogical delivery.

To ensure the successfulness of PIPP is achieved, educators need to innovate. Therefore, based on the philosophy and goals of Islamic Education, there is also a planned effort to meet PIPP's goals, especially in "enhancing the creativity, innovation, and culture of the students" in PI teaching and learning. PI teachers should also work harder to improve the teaching of Islamic Education to prepare students to face the challenges of the 21st century that also relevant to the present challenges (Asmawati 2016). The use of AR and VR has been seen in teaching and learning (PNP) sessions. As discussed, the emergence of VR and AR technology is also being experienced in PdPC. The use of VR and AR can benefit teachers because they do not have to take a study tour to a particular place but instead only need to use VR and AR digital tools in the classroom. The AR application is able to increase students' interest especially the new generation and the use of 3 Dimensional objects is to unlock the creativity in experiencing the virtual digital form of the study process. This application also improves the student's intellectual ability easily through the formation of visual objects that shows similar functions in reality. Even with the existence of this application, it is able to save the cost of learning space as the AR and VR functions are to create a vast space without boundaries.

Current Challenges of Islamic Education (PI) Teachers

The above discussion has clearly indicated the challenges faced by PI teachers added to the rivals impact of globalization and rapid technological change. PI teachers are not been left in this process of change and should always be prepared if they do not want to be left behind in the current transformation and innovation of the education world without eliminating the Islamic values and the Islamic law. What to be the concern is the issue or problem of the less mastered PI teacher in modern teaching methods or techniques that emphasize Hands-On Learning, inquiry learning, and mixed learning. According to Noor Fadlina (2014) and Kamarul Azmi et.al (2011), teachers' weakness in mastery the knowledge, PdPc's approach, the use and application of Information Technology and Communication or ICT in education is among the things detected in education level at school. Therefore, PI teachers should have the ability to integrate the skills of the 21st-century if they want to produce students with life skills and competitive, creative, and innovative. This is because PI teachers play an important role as a driver in the success of Wave 2 PPPM (2016-2020), in order to transform the education of the nation more effective and moving fast. PI teachers also need to be wise in selecting methods and approaches that are appropriate to the student's situation and needs as it is one of the key factors in determining the effectiveness of the PdPc process. According to Ahmad (1997), the suitability of the teaching approach is closely related to the type of students and the teaching style of a teacher.

Nowadays, PI teachers should enhance knowledge and skills using modern technology tools and digital technologies in the PdPC process. In other words, the full reliance on textbooks in the PdPC process should be avoided, instead, teachers need to master the skills using the latest digital technology, ICT and teaching media in line with current generations. Undoubtedly, to master this skill certainly requires effort and diligence as well as full moral support from other parties. Hence, teachers should be given appropriate training in all aspects on an ongoing basis and ensured their effectiveness. While the existence of various software has met the needs of the new generation, it is still not too late for teachers to research and apply new methods to attract students in the PdPC process. As a teacher, the age barrier is not supposed to be an excuse to understand the application of advance gadget or the efficiency of the previous method to each generation and the different application of the level of understanding of a generation. According to Mohamed Amin's (2011), educators today should be mindful of teaching and activities in digital form to enable learning at any time and anywhere, even across any device and learning stage.

At par with the demands of time and globalization era, PI teachers need to understand and master the ability to apply higher order thinking skills or KBAT in the PdPc process that will ultimately students help students in realizing their knowledge and skills as a way of life-based on Shari'a. It further develops the creativity and innovative traits of the students to the optimum level. Besides KBAT, PI teachers also need to train and guide students using a reasonings approach so that in the future it will help students to solve the problems faced in their daily lives.

The existence of the 4th Industrial Revolution which emphasizes the development of virtual reality technology without much use of manpower definitely affects many aspects of life (Sabri 2018). Among other things, the change in education is not at par with the fast speed of

technological change. It certainly requires strong competence and support from various parties to ensure the desired educational process. Likewise, that is certainly a concern for the public and the Muslims, in particular, is the impairment of pure and humanitarian values if the demands of the 4th Industrial Revolution are not accompanied by Islamic spirit and obedience to religion. Due to the great pursuit of the achievement of the 4th Industry era, humanity is beginning to neglect the moral and human values that are the foundation of human civilization. Hence, transformation and innovation of PI PdPC need to be continued in order to preserve the philosophy and goals of the PI not being ignored and forgotten by the Muslims next generation. However, it is undeniable that the emergence of 4th Industrial Revolution is said to bring a positive ray for those who know how to use it and provide an alternative to virtual commerce or e-commerce technology which open up more economic opportunities for Malaysians (Sabri 2018).

The role and function of teachers, particularly the PI teachers has become more challenging nowadays. PI teachers need not to play the role of Murabbi, Muaddib but also as Mu'allim so that the students will not only are equipped with the knowledge and skills but also the strength of faith and good morals. It requires the inner strength of the teacher with the help and support of the community. That strength will not grow strong if it only dependent on physical strength, but spiritual strength should be the basis or core of human development. Thus, ad-Din Islam emphasizes the self-esteem of self-integrity including 'aqidah, ibadah and akhlak in order to produce the believer that is believing, practice the Islamic thought and the taqwa one (Asmawati & Mohd Aderi 2016; Mohd Adi Amzar & Noorsafuan 2017).

Conclusion

Most Muslims, particularly the PI teachers must be willing to adopt a paradigm of thought in education without neglecting the superior, practical and dynamics of Islam throughout the ages. Teachers should always be prepared to accept the changes and innovations in education so that the PdPC PI process is in line with current needs. The optimum attitude, mentality, and willingness of teachers are necessary to ensure that the transformation of Islamic Education reaches a satisfactory stage in line with the others. The paradigm shift should be accepted with open heart and sincerity if we want to see the equivalent Islamic Education in the mainstream. A future generation will be constantly exposed to numerous phenomena as a result of the explosion of digital technology and the unstoppable globalization era. Hence, teachers need to be equipped with 21st-century science of knowledge and teaching skills that include psychology, pedagogy, and sociology without deserted the principles and characteristics of traditional Islamic education that have successfully produced the outstanding Islamic intellectual and scholars. The emphasis value of Islam's faith and morals should not be neglected because morals is a final result of faith and aqidah stability and the practice of authentic worship (Asmawati et al., 2017). In order to ensure that this desire and pure intentions are to be success, support and involvement of various parties in a holistic and collective way are of paramount concern in order to achieve the goal in practical and real rather depend on the theoretical basis.

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