Digital Transformation, Islamic Education, And Paradigm Learning: Assess Challenges And Opportunities On Islamic Education Development

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Abstract

Digital transformation has systemic implications for increasing skills in forming new learning. One of them is cutting-edge technology such as Artificial Super Intelligence (ASI), cloud computing and the Internet of Things (IoT) which accelerates the transformation of the education system - read Islamic education -, while basic technology such as data management and analytics is used to analyze the dynamics of data that is born of this digital transformation. Therefore, he provides new awareness that Islamic education needs to synchronize, reconstruct or even deconstruct. It is able to provide benefits in Islamic education, including: increasing the productivity of the management performance of the Islamic education system; improving consumer and stakeholder experience; and reducing financing for the operationalization of Islamic education institutions. As well as creating opportunities to maximize the axiological dimension in a more "down to earth" manner, so that education is truly an investment for the future. Clearly, digital transformation, one of which is through technology, is one of the triggers or driving forces that is able to have a positive impact on learning, especially in online learning. In this context, the paradigm was born that the success of education lies in the role of students who are required to be independent in the learning process they undergo.

Keyword: *Digital Transformation, Islamic Education, Educational Technology*

Introduction

Digital transformation increases the need for acquiring new skills but also fosters new forms of leaning. New jobs and new ways of working that did not exist until a few years ago

and are now emerging due to the digital revolution require "change in both what has to be learned and how this learning is to happen" (Metallo et al., 2021). Based on this quotation, it is clear that digital transformation has systemic implications some to improve skills in forming new learning. In this context, digital transformation becomes an entity that existence needs to be considered in efforts to develop learning (in Islamic education). It is natural that digital transformation studies are often related to institutional innovations - or read learning - as done by Pingali et al. (2021) developing a community mindset as carried out by (Padua, 2021). It means that digital transformation is able to grow new entities in institutional development, including in the construction of learning (in Islamic education). As if the digital transformation entity is a normative trigger that influences substantial aspects of learning; for this context is Islamic education.

Interestingly, digital transformation was introduced in the world of learning - including Islamic education in 2000s. One of the indicators is a methodological transformation of learning based on the mainstream internet; then the learning will be widely open through an international collaboration paradigm (Pineda, 2022). Obviously, the concept of digital transformation emerged with the introduction of the mainstream internet in learning, that actually became the basic framework of the Islamic education system. Learning process requires a competency that is able to transform traditional forms of learning into digital technology-based learning. Since the digitalization reach every part of educational life, influencing the way education is performed; starting from philosophical, methodological and other aspects (Akrim et al., 2021).

Indeed, massive and systematic digital transformation practices are used in business or company context (George & Paul, 2019). However, this digital transformation has entered the educational system; and it can influence the education system fundamentally; included in Islamic education. In fact, the introduction of digital technology triggers the creation of new learning that more closely to paradigmatic learning. The sophisticated technologies such as Artificial Super Intelligence (ASI), cloud computing and Internet of Things (IoT) have accelerated the transformation of educational system – in Islamic education -, while the basic technologies such as data management and analytics are used to analyze the data dynamics that created digital transformation. Basically, it has a formulative unity in methodological use based on the functionalization of the internet mainstream. A literature said that the digital transformation process is "*a change in all job and income creation strategies, application of a flexible management model standing against the competition, quickly meeting changing demands, a process of reinventing a business to digitize operations and formulate extended*

suplly chain relationships; functional use of internet in design, manufacturing, marketing, selling, presenting and is data-based management model"(Taherdoost, 2021).

It is clear that digital transformation has an influence on the basic framework in Islamic education. Means that technological advances and their derivatives such as digital transformation provide a new awareness that Islamic education needs synchronization, reconstruction and also deconstruction. Since Islamic education is in the midst of an "open world", people can evaluate and compare it with the diversity of other education systems. Therefore, this article focused on the implications of digital transformation on the basic framework of Islamic education system; and also on the basic paradigmatic framework of Islamic education learning.

Islamic Education

In order to avoid misconceptions about the constructed discourse in this article, the researcher provide a comprehensive understanding Islamic education concept. Since the history of Indonesian educational system and the study of Islamic education itself, the term "Islamic education" is generally understood only as a "characteristic" - a type of education with an Islamic religious background. The limitations had set out in legislation, namely Laws No. 20 of 2003 concerning on National Education System; Islamic education usually called as an education system that has special characteristics. These indications made the researcher to limit on the entity of the education system to focus on of the analysis.

There has been distractions in understanding the definitive boundaries of Islamic education. Some people interpret Islamic education as "Islamic religious education"; and on the other hand, others use the term Islamic religious education for "Islamic studies". For example, Islamic learning at schools sometimes referred to as "Islamic studies"; even though it is more appropriate as "Islamic religious education". Meanwhile, Islamic schools, Islamic boarding schools and *madrasah* are sometimes referred to as "Islamic religious education" even though the more appropriate term is "Islamic studies" (Mulkhan, 2002). This analysis requires more efforts to confirm the construction of Islamic education, particularly in the discourse analysis of this article.

The basis for the analysis in this study is Zarkawi Soejoeti's statements that maps Islamic education comprehensively. His views are often used as a reference for normative mapping; for instance, (Fadjar, 1998; Muhaimin, 2001) relies on definitive boundary mapping based on Soejoeti's views, as follow:

1. Education according to Islam and Islamic studies, namely education that is understood and developed by the values and fundamental doctrines contained in its basic authority, namely *Al-Qur'an* and *Sunnah*. On these limits, Islamic education can be the educational thoughts and theories developed by these basic authorities.

2. Islamic studies or Islamic religious education, means the efforts to educate religion or Islamic doctrine and its values to have perspective and life attitude. Islamic education can be some points: (1) efforts made by certain personalities or communities to help an individual or group to develop Islamic doctrine and its values; (2) the construction of phenomenon between two or more people that has implications for the embedding and/or growth of Islamic doctrine and its values in one or several parties.

3. Education in Islam, or the process and practice of providing education that took place along the historical trajectory of Muslim community. It can be interpreted as the process of the development of Islam and its people, both Islam as a religion, doctrine and cultural and also civilizational system; from the era of the prophet Muhammad until the present. The term Islamic education can be understood as the cultivation and inheritance of religious doctrine, culture and civilization of Muslims from generations in historical trajectory.

Although the term of Islamic education can be understood in different ways, but it still a unit in the form of a system. In other words, Islamic education can be understood from *Al-Qur'an* and *Sunnah* that operationally justified in the process of cultivation and inheritance. It is also oriented towards the development of Islamic religious doctrine, culture and civilization to generation throughout the history of Muslim community. Therefore, the process of Islamic education cannot be separated by the personal development and self-cultivation of educational subjects. It is also based on the value of normative authority toward the "texts of revelation" (Al-*Qur'an* and *al-Hadist*); then it is specific to theological education including the content, curriculum, and methods by utilizing academic standards and modern pedagogical methods.(Kenan, 2009).

Islamic education in this article is positioned as a type of education that establishment and implementation are driven by the motivation and enthusiasm to embody Islamic values, both as reflected in the name of the institution and in their activities. The word "Islam" is positioned as a source of values that will be realized in all educational activities. It is also defined as a type of education that provides attention and makes Islamic studies as a subject for the implemented study program. The word "Islam" is placed as a field of study or science, and treated like any other science. It is also said to be a type of education that covers these

two definitive boundaries; it is also positioned as a source of value as well as a field of study offered through the study programs held (Fajar, 1999). It can be understood that the existence of Islamic education is not only for its unique characteristics, but also for the ideal goal to be realized, namely to create God's servants.

Research Method

Digital Transformation in the Islamic Education System: Opportunities and Challengesn

Digital transformation is an implemented process by Islamic education system to integrate digital technology into educational sectors. It fundamentally transforms the methodology of Islamic education by providing a new perspective with more constructive values. It means that Islamic education adopts innovative digital technology to create a design on cultural and operational transformations to adapt the digital transformation as an impact of developments in science and technology. This digital transformation pattern is not only about technology itself, but also about the intersection of subject entities and objects of Islamic education; Islamic education system; and educational technology tied to educational methodological frameworks. The unity of this framework can be described as follows:
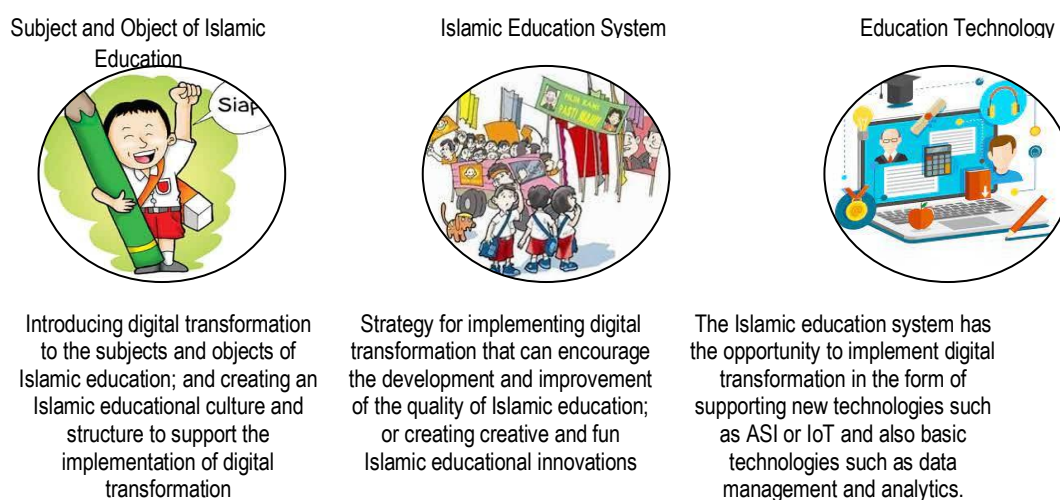
Subject and Object of Islamic Education	Islamic Education System	Education Technology
Introducing digital transformation to the subjects and objects of Islamic education; and creating an Islamic educational culture and structure to support the implementation of digital transformation	Strategy for implementing digital transformation that can encourage the development and improvement of the quality of Islamic education; or creating creative and fun Islamic educational innovations	The Islamic education system has the opportunity to implement digital transformation in the form of supporting new technologies such as ASI or IoT and also basic technologies such as data management and analytics.

Figure 1: The Intersection of Digital Transformation Entities in Islamic Education System

According the figure above, it can be interpreted that digital transformation is capable of influencing the structure of education system. Digital transformation in education includes some substantial things; such as the Islamic education system can start building digital solutions, learning through mobile applications or electronic media-based learning platforms; or innovation in the Islamic education learning system through migration from on-premise

computer infrastructure to cloud computing (Arinushkina et al., 2023). Dorner & Rundel stated that digital transformation in the world of education creates the enthusiasm to encourage people to be involved in the process.(Dorner and Runnel, 2021). It means that digital transformation in (Islamic) education system needs to be oriented towards positive implications for social and community life. In addition, this transformation is able to develop an effective education system in accordance with the needs of digital economy and guarantees easy access for stakeholders in (Islamic) education sector itself (Krishnan et al., 2023).

This orientation indicates that digital transformation of Islamic education needs to be accompanied by its impacts. One of them needs to be oriented towards the impact of economic performance by improving the capacity for economic innovation through the dissemination of knowledge and also improving skills and productivity of human resources. Therefore, the diction of "digital transformation" in Islamic education actually explains the implementation of new technology, talents and processes in order to remain be competitive in the scientific landscape. In this 5.0 era, the Islamic education system needs to have the ability to adapt systemically, massively and quickly to social, cultural, economic and political transformations, and particularly for the expectations of consumers or stakeholders.(Airlangga & Akrim, 2020)

Through this framework, it is clear that the Islamic education system needs to embrace or adapt digital transformation strategies to keep pace with technological developments and consumer or stakeholder expectations. It is natural that various developments in digital technology are able to design effective learning to prepare the subject of education (Islam). This condition has been analyzed by several experts, such as David Thornburg in "From the Camprire to the Holodeck: Creating Engaging and Powerful 21st Century Learning Environments"; (Thornburg, 2013) or Judith V. Boettcher & Rita-Marie Conrad in "*The Online Teaching Survival Guide: Simple and Practical Pedagogical Tips*". ((Boettcher & Conrad, 2010)Priten Shah even provided a basic framework for the using of AI in education and it turns out that AI is able to produce educational innovations (Shah, 2023). All of them actually want to reveal the "meeting" of the education system - read teaching - with technological developments; as explained by Wood and Ponsford (2014) dalam "*TechnoTeaching: Taking Practice to the Next Level in a Digital World*".

Based on this digital transformation initiative, it can be seen that some benefits can be taken by the Islamic education system. The benefits are the process of managing Islamic education institutionally; or also benefits in the scope of teaching. The benefits in question include: first, increasing the productivity of the management performance of Islamic

education system. The emergence of technology such as cloud services can save time and increase efficiency at all levels of Islamic education management process. For instance, by applying digital technologies such as Artificial Intelligence (AI) will transform human resources to focus on tasks that require creativity and problem solving. While the data analytics with machine learning can open up space for knowledge insights and horizons for strategies to achieve Islamic education goals more effectively and efficiently (Dalle et al., 2020).

Second, increasing the experience of consumers and stakeholders. Since they want constant availability of educational services across various channels. They also want some easy and comfortable services to be used on their mobile devices; then the construction of Islamic education system can be implemented in online learning. This pattern is essentially a form of logical implication of technological development, particularly for digital technology; Eileen Kennedy & Diana Laurillard explained the practical dimensions of online learning being pioneered for future learning in "Online Learning Future: An Evidence Based Vision for Global Professional Collaboration on Sustainability" (Kennedy & Laurillard, 2023). Factually, there are several digital transformations that can directly affect the experience of consumers and stakeholders; such as the development of various applications and workflows of technological devices (laptops or mobile phones); mapping and fulfilling criticism and suggestions from consumers and stakeholders more efficiently and systematically by adopting technology; or also interacting directly with consumers or stakeholders in real time with or through AI. They all can be seen as opportunities for Islamic education system to improve support and services by using digital automation.

Third, reduce funding for operationalization on Islamic education institutions such as for Islamic boarding schools, *madrasah* or Islamic-based schools. It means that investment in digital technology in Islamic institutions can actually reduce costs for operationalization on several ongoing programs, such as: maintenance of institutional facilities and infrastructure for Islamic boarding schools, madrasas, Islamic-based schools or religious colleges; minimizing the workload of human resources or even by substituting through digital technology. It is believed that the digital transformation process is capable in achieving operational cost savings; since it contains several aspects; namely the elimination or replacement of certain resource-intensive workflows, including human resources; reduced costs of expensive facilities and infrastructure through managed services and cloud computing; or also automating the management performance of educational institutions by combining Artificial Intelligence with machine learning. It was a framework by David

Thornburg that formed to encourage the optimization of educational spaces with teaching (learning) practices while still involving all components.

It can be seen these benefits as also opportunities can be maximized in Islamic education. Digital transformation actually opens up the opportunities in Islamic education to maximize the axiological dimension to be more "grounded"; since the education is truly an investment for the future. The implication that the construction is no longer of society based, as Nurcholish Madjid analyzed, on ascriptive but on meritocracy (Majid & Rachman, 2006). Therefore, the digital transformation of Islamic education will deliver the innovative explosions in every institutional and educational program. Moreover, as noted by ITU, UNESCO, and UNICEF, there are several opportunities that can be achieved when there is an accuracy of educational institutions in the application of technology. These opportunities can actually identify the basic framework in creating opportunities as shown as follow (ITU, UNESCO and UNICEF, 2020).

Elements of Opportunity	
	Funding: the sophisticated current global funding instruments and can be applied on Islamic educational institutions once they have access to accurate data
	Technology: technological advances are able to make institutional doing identification and building coverage much wider and easier
	Accountability: provide a methodology with a new perspective to monitor the progress, improvement and transparency of educational institutional services
	Focus: oriented towards on educational institutions as a gateway to increase investment targeting the community
	Awareness: a situation that encourages educational institutions to use institutions as a medium for community empowerment

Figure 2: Opportunity Creating Elements

From the scheme, it can be seen that technology give space for Islamic education to make innovative creations to develop its system. One of them is carrying out digital transformation that supports the acceleration of improving the quality of Islamic education itself or also to realization the ideality of Islamic educational goals. However, it is needed to have a critical effort that can distinguish digital transformation with digitalization in Islamic

education. Since they not only tend to have essential differences, but also have slices that unite them. They both have their own proportions of performance and the performance between the two also complements each other.

Results and Discussion

Digitalization is a systematic process of converting physical aspects on Islamic education institutional processes and workflows into digital aspects. One manifestation of this process is that non-digital or physical aspects are transformed into digital format, then the computerized systems can be used to accelerate the governance of Islamic education institutions. For instance, the paper forms filled-out by consumers or stakeholders in Islamic education institutions - such as Islamic boarding schools, *madrasah* or Islamic-based schools - are converted into digital forms that can be filled-in online; this commonly referred to as paperless. This digital data can be used as an analytical basis for decision making and looking for institutional opportunities for Islamic education later. In the management of Islamic education institutions, digitalization initiatives can include several aspects such as modernizing the institutional management system; paperless-based automation of administrative and learning processes; and also moving the learning evaluation system by online.

Although digitalization is able to touch the essential aspects of education; this digitization alone is not transformational - or even said to be digital transformational. Digitalization is basically a primary step and also has an urgency towards digital transformation. Digital transformation itself has a broader scope, especially when creating a shift in dominant culture in Islamic educational institutions. Digital transformation is very influential, particularly on learning models, as analyzed by Afonso et al. (2022) or also in higher education learning (Blankenship & Baker, 2019). Even the learning paradigm - especially online - is also experiencing a shift from teacher-centric to learner-centric that is considered by academics to be a complementary factor in realizing educational goals (Murty & Rao, 2019). Therefore, digital transformation has forming pillars that are firmly embedded in it.

Digital transformation is not just about adopting new technology and applying it massively in educational institutions. However, designing a digital transformation strategy to be effective and get maximum impact requires these pillars. The key pillars of digital transformation are as shown as follow:

Key Pillars of Digital Transformation	First, consumer and stakeholder experience; where Islamic educational institutional innovation focused on consumers and stakeholders as one of the key pillars that drives digital transformation. In this context, it is necessary to adopt emerging technologies when Islamic education has explored these technologies in accordance with consumer and stakeholder expectations
	Second, human resources; This pillar needs to be established on the construct of feeling safe and supported when adopting transformational technology. The adopted digital model can be successful only if the human resources of educational institutions accept it wholeheartedly. Educational institutions can be successful if they are combined with alternative human resources; such as training, recruiting the right talent, and retaining existing talent.
	Third, transformation; Digital transformation efforts are designed to carry out transformation in all parts of Islamic education institutions. In this context, planning becomes crucial to obtain a clear flow and direction, since social and societal transformations are unpredictable. Islamic educational institutions need to provide the tools and environment for the successful of digital transformation
	Fourth, innovation; This is a very important aspect and is directly related to digital transformation. They are not identical. Innovation is an effort to generate ideas that spark digital transformation by opening up space for open communication, collaboration and creative freedom
	Fifth, leadership; This aspect indicates that educational institutional leadership needs to be proactive and transformational in digital transformation. Leaders need to think ahead, explore technology from different angles, and inspire human resources to do the same thing.
	Sixth, culture; where the leadership of education institutional carrying out digital transformation to implement the other five pillars, so that this effort will encourage the growth of culture of innovation. With enthusiastic by human resources, it will actually provide a good experience for consumers and stakeholders, even digital transformation initiatives will develop and grow quickly

Figure 3: Six Pillars of Digital Transformation in Islamic Education Institutions

According these pillars above, it is very clear that digital transformation of Islamic education institutions can be created or constructed. Digital transformation occurs as a logical implication of social transformation on society and the development of science and technology. However, it was born from systematic efforts carried out by Islamic educational institutions themselves. There are several stages of digital transformation in educational institutions, namely:
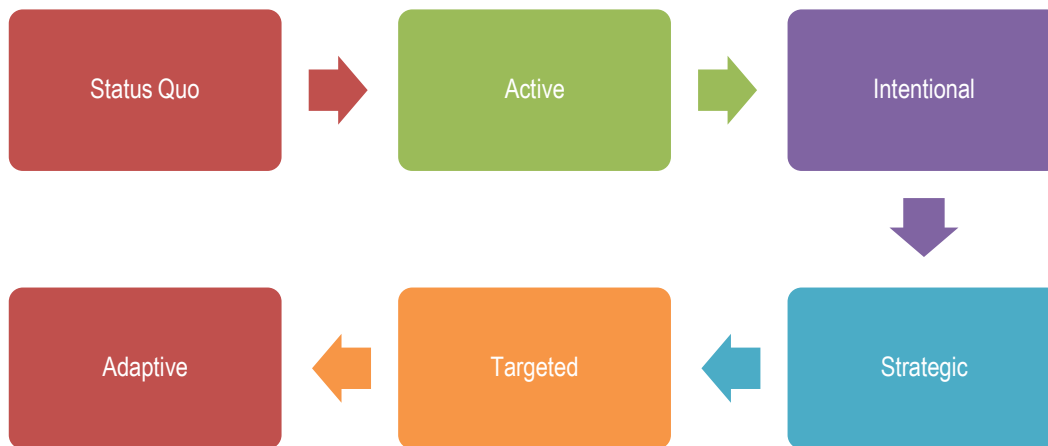
Figure 4: Stages of Digital Transformation in Islamic Education Institutions

In this picture, it appears that there are stages in carrying out digital transformation in educational institutions; then patterns and characteristics in each stage are clear. In this context it can be explained that:

In the first stage, is the status quo stage. At this stage, Islamic education institutions continue to carry out various institutional and educational programs that have been established and also maintain the status quo. However, transformation of institutional management such as digital technology is not a revolutionary priority in carrying out digital transformation; however, consumers or stakeholders are not aware on this. At this stage, the concern is the low level of digital initiatives in human resources, making educational institutions outdated; it is necessary to immediately move to next stage that is more adaptive on digital transformation.

The second is the active stage; where at this stage, the Islamic education institutions begin to realize the importance of digital transformation, so they begin to make efforts to improve by digital optimization. Islamic education needs to recognize the challenges that occur right now; then it needs to encourage digital transformation initiatives. All elements or resources with different views need to solve the same problem in different ways; it will have many alternatives in parsing and improving the institution (Islamic education). However, this stage still shows a lack of focus on the unity of the education system with digital technology. Therefore, educational institutions need to find the ways to move out of the chaos or unsynchronization if they want to achieve digital transformation success.

The third is the intentional stage; digital transformation efforts will begin when Islamic educational institutions begin to move to the intentional stage. Digital human resources begin to emerge and change agents are also was born; as they begin to test new technologies. They

seek formal approval from institutional structures to carry out digital transformation. At this point, the institutional culture of education can become a barrier, as the old culture tends to be incompatible with the new digital culture. Therefore, educational institutional leaders need to play an active role in encouraging innovation and the birth of a digital culture in order to transform more massively and systematically.

The fourth is strategic; where educational institutions have achieved or succeeded in cultural transformation. The implication is that the institutional human resources will work collaboratively to achieve the goals of Islamic education. Educational institutions also need to design strategic guidelines that focus on achieving the success of digital transformation of Islamic educational institutions. They need to plan various aspects of educational institutional transformation such as management standards or research that needs to be done.

The fifth is targeted; Islamic educational institutions will implement digital transformation strategies from the previous stages. They tend to be more attractive in targeting the goals of educational institutions based on digital culture. Typically, they will have a team of innovators in charge of identifying things that need to be done now and in the future. This initiative is designed to continuously achieve the success target of the digital transformation of educational institutions, so that various programs and also education are continuously updated.

And the sixth is the adaptive stage; a process of educational institutions have been able to have a digital transformation framework to face all the challenges and opportunities of educational institutions. They welcome the interests of consumers and stakeholders in the future by referring to digital culture. Therefore, the framework becomes a way of life, and/or even the educational process is continuously on the path of innovative technology; as if the digital transformation projects in educational institutions become a necessity.

Digital Transformational Learning: A Paradigmatic

Based on this description, it is clear that technological developments will have implications for the operationalization of (Islamic) education. One of the impacts is an effort to accelerate learning in the academic realm. Many experts have proposed a number of methods, including networked learning or distance education approaches in integrating digital technology with educational practices. When a learning discourse is offered online, it requires the using of specialized hardware and software, as well as the development of new pedagogical competencies among educators. All steps in online learning can be completed in an interactive format without having to leave an internet-connected computer -read Artificial

Super Intelligence (ASI), cloud computing and the Internet of Things (IoT). The availability of this information makes it easier to use digital resources for the purpose of education itself. (Kifta, dkk, 2021). The process includes four stages - including teaching Islamic religious education, teaching through digital materials, investigation through online activities and discussion boards, application through online assignments, and assessment through online quizzes and assessments. Holmberg - a figure known as a pioneer in this field – stated that distance learning encompasses various forms of study that are carried out without direct presence and supervision of a tutor in the same room with the learners, but they still receive guidance organized by the tutor (Holmberg, 1995).

There is something interesting in this formulation, "distance learning between learners and teachers" is also intrinsically found in Keegan's ideas. He stated that the majority of distance learning is carried out between teachers and learners through distant communication media, but without reducing the quality of education (Keegen, 1993). It means that the learning is a systematic step that still maintains the quality of education itself. Although, technology becomes one of the triggers or driving forces that can accelerate the positive impact when online learning is taking place (Bernard et al., 2014). In this context, the paradigm was delivered that the success of education lies in the role of students who are required to be independent in the learning process. By adopting an emphasis on the substance of learner independence in the learning process and the using of communication media and computer networks, it can be said that the concept of distance learning is the embryo for the concept of online learning (Sulasmi & Dalle, 2022).

On the other hand, it can be applied through the using of technology-based media is the blended learning model. According to Driscol, it combines or incorporates various web-based technologies, to achieve educational goals (Driscoll, 2022). Therefore, this learning pattern is a mixed form of e-learning and multimedia technology, such as video streaming, virtual classes, or also online text animation aspects combined with traditional forms of learning. It is natural that in simple terms this pattern is said to be learning that combines online learning with face-to-face learning, as shown as follow:
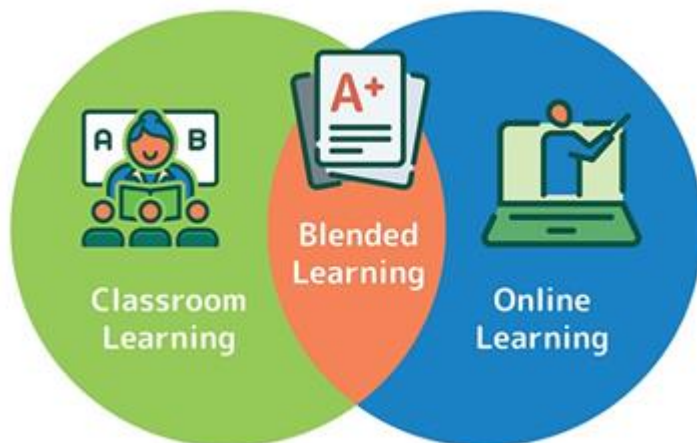
Figure 5: Blended Learning in Education

Through various online learning platforms, it is expected to be able to deliver a learning model formulation that able to reduce the disparity in the quality of Islamic education. The existence of various types of online learning will actually have a positive contribution in encouraging disparities in the quality of Islamic education institutions. The blended learning emphasizes activeness on learners. Conceptually, the activeness of learners in a learning process can be done through student-centered learning and active learning strategies. It is believed that online learning can have a positive impact through various variants of platforms used, either through problem-based learning, project-based learning, cooperative learning, or discovery/inquiry learning (Amhar et al., 2022).

However, that such learning still requires quality and effective teaching. Since the educator in online learning must act also as a facilitator, while the learners play an active role-participating in the learning process and setting their own learning pace. However, if compared with the implementation of learning methods or strategies with technology; technology affects the success of learning. Therefore, the role of educators is very important and conducive for the success of online learning. Particularly, the ability and function of educators, as well as their mediation, since the paradigm of online teaching is very different from traditional forms of lectures, so the educators need to be an active moderator.

Thus, the established learning needs to keep referring to students; in this case, their human potential. Dina Mardiana's researches on online learning of Islamic Religious Education based on adversity qoutient, stated that it actually found an interesting pattern to be examined, namely the effectiveness of learning from Islamic religious education by referring to or based on humanist-futuristic values. This conceptual construction appears in the following figure by Mardiana (2021):
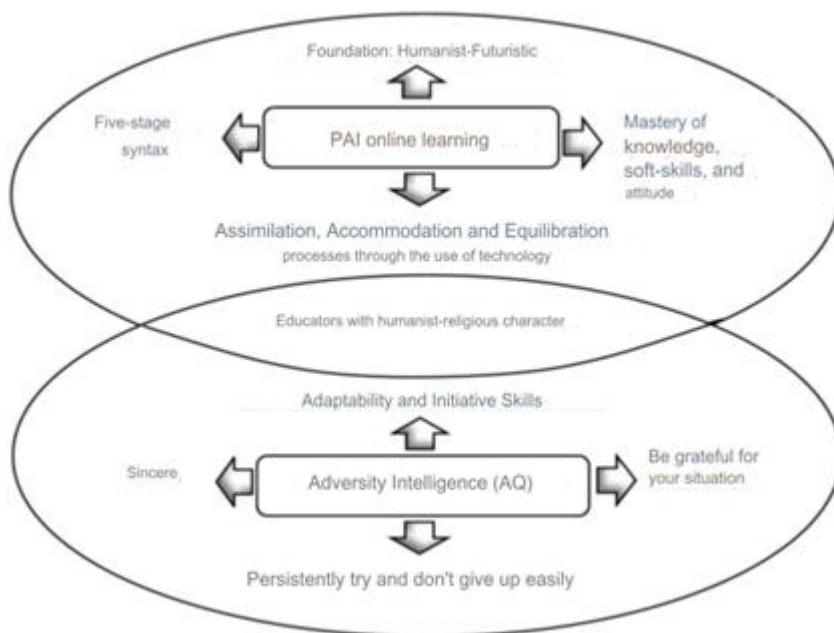
Figure 6: Conceptual Construction of Research Findings

From the figure above, there is a proposition that can be used as a basis for this article - if online learning based on digital transformation can be made effective - with reference to; PAI's learning foundation that is based on the spirit of humanist-futuristic education that includes mastery of three criterias; (1) the acquisition of knowledge, non-technical skills (soft skills) and attitude will actually be able to develop students' adaptability and (2) initiative skills if required the ability to adapt cognitive structures through the stages of assimilation, accommodation and equilibration of new knowledge, as well as (3) students' psychological readiness in facing challenges. Online online learning in Islamic Religious Education (PAI) will be able to develop students' adversarial intelligence if it is supported by lecturers who have a humanist-religious character. And the syntax of the Islamic Religious Education (PAI) by online learning model as an embodiment of discovery learning will be able to develop students' adversarial intelligence if it is implemented through five stages and adds one accompanying item, namely: exploration, problem identification and problem solving; information gathering; information processing; verification of results; generalization; and support from lecturers who have a humanist-religious character (Taba, 1962).

However, this framework needs to be supported by other entities as an effort to encourage the goals of educational. It includes the increasing of the competency and capability of educational institutions (Holdsworth & Thomas, 2020).

Conclusion

In this context, the urgency of strengthening the ideality of education through a philosophical foundation needs to be in line with the spirit of educational development that is moving towards the revolutionary era of society 5.0. It has actually had a real influence in the field of utilizing learning information technology. The real impact is marked by efforts to make the learning process more effective, but still trying not to reduce the quality of education, as Keegan's idea was more than two decades ago (Keegan, 2005). In fact, Bernard viewed the accelerated rate of information technology as being the trigger or driving force that accelerates the positive impact of ongoing online learning. However, it is still based on normative cultural values, in this context are *Al-Qur'an* and *al-Hadith*. Even as heirs to a culture that is in accordance with Islamic values, Taba in this context recognized that education is indeed a custodian as well as seeder of a legacy of cultural values that cannot simply let go of the intellectual factor from the personality development aspect of individual learners.

Reference

Airlangga, E., & Akrim, A. (2020). Learning from COVID-19, will this pandemic reappear: A reflection for indonesian children future. *Systematic Reviews in Pharmacy*, *11*(6), 1008–1015.

Akrim, A., Rudianto, R., & Adhani, A. (2021). Interactive effects of stoicism and religious coping on psychological distress, fatigue and intercultural communication: Muslim health workers in Bali. *Journal of Ethnic and Cultural Studies*, *8*(4), 214–237. https://doi.org/10.29333/ejecs/920

Amhar, A., Sabrina, R., Sulasmi, E., & Saragih, M. (2022). Student critical thinking skills and student writing ability: The role of teachers' intellectual skills and student learning. *Cypriot Journal of Educational Sciences*, *17*(7), 2493–2510. https://doi.org/10.18844/cjes.v17i7.7683

Fadjar, A. M. (1998). *Madrasah dan tantangan modernitas*. Diterbitkan Atas Kerja Sama Yasmin Dan Penerbit Mizan.

Afonso, A., Morgado, L., & Roque, L. (2022). *Impact of Digital Transformation in Teacher Training Models*. IGI Global.

Kaplan, A. (2022). *Digital Transformation and Disruption of Higher Education*. Cambridge University Press.

Arinushkina, A. A., Morozov, A., V., & Robert, I., V. (2023). *The Impact of Digitalization in a Changing Educational Environment*. IGI Global.

Murty, B., & Rao, K. N. (2019). Digital Pedagogy–An opportunity or a threat? *Social Science Research Network*. https://doi.org/10.2139/ssrn.3375701

George, B., & Paul, J. (2019). *Digital Transformation in Business and Society: Theory and Cases*. Springer Nature.

Holmberg, B. (1995). *Theory and Practice of Distance Education*. Psychology Press.

Majid, N., & Rachman, B. M. (2006). *Ensiklopedi Nurcholish Madjid: H-L*. Paramadina.

Krishnan, C., Babbar, M., & Singh, G. (2023). *Digital Transformation in Education: Emerging Markets and Opportunities*. Bentham Science Publishers.

Metallo, C., Ferrara, M., Lazazzara, A., & Za, S. (2021). *Digital Transformation and Human Behavior: Innovation for People and Organisations*. Springer International Publishing.

Dalle, J., Hayat, A., Karim, A., Tirtayasa, S., Sulasmi, E., & Prasetia, I. (2020). THE INFLUENCE OF ACCOUNTING INFORMATION SYSTEM AND ENERGY CONSUMPTION ON CARBON EMISSION IN THE TEXTILE INDUSTRY OF INDONESIA: MEDIATING ROLE OF THE SUPPLY CHAIN PROCESS. *International Journal of Energy Economics and Policy*, *11*(1), 536–543. https://doi.org/10.32479/ijeep.10693

Thornburg, D. (2013). *From the Campfire to the Holodeck: Creating Engaging and Powerful 21st Century Learning Environments*. John Wiley & Sons.

Keegan, D. (2005). *Theoretical Principles of Distance Education*. Routledge.

Helbig, C., Hofhues, S., Ifenthaler, D., & Egloffstein, M. (2021). *Digital Transformation of Learning Organizations*. Springer Nature.

Padua, D. (2021). *Digital Cultural Transformation: Building Strategic Mindsets via Digital Sociology*. Springer Nature.

Aslan, E. (2009). *Islamic Education in Europe*. Böhlau Verlag Wien.

Kennedy, E., & Laurillard, D. (2023). *Online Learning Futures: An Evidence Based Vision for Global Professional Collaboration on Sustainability*. Bloomsbury Academic.

Mardiana, D. (2021). *Pembelajaran Daring Pendidikan Agama Islam di Perguruan Tinggi dalam Pengembangan Kecerdasan Adversitas Mahasiswa: Studi Multisitus di Universitas Negeri Malang dan Universitas "X" Malang*.

Taba, H. (1962). *Curriculum Development; Theory and Practice*. Harcourt, Brace & World.

ITU, UNESCO, UNICEF. (2020). *The Digital Transformation of Education: Connecting Schools, Empowering Learners*.

Boettcher, J. V., & Conrad, R. (2010). *The Online Teaching Survival Guide: Simple and Practical Pedagogical Tips*. John Wiley & Sons.

Wood, J. M., & Ponsford, N. (2014). *TechnoTeaching: Taking Practice to the Next Level in a Digital World*. Harvard Education Press.

Sandhu, K. (2021). *Handbook of Research on Advancing Cybersecurity for Digital Transformation*. IGI Global.

Stein, J., & Graham, C. R. (2014). *Essentials for Blended Learning: A Standards-Based Guide*. Routledge.

Rahardjo, M. (2006). *Quo Vadis Pendidikan Islam: Pembacaan Realitas Pendidikan Islam, Sosial, Dan Keagamaan*. UIN-Malang Press.

Muhaimin. (2001). *Paradigma pendidikan Islam: upaya mengefektifkan pendidikan agama Islam di sekolah*. Remaja Rosdakarya.

Shah, P. (2023). *AI and the Future of Education: Teaching in the Age of Artificial Intelligence*. John Wiley & Sons.

Sengamalam, R. (2022). *Transformation of Teaching-Learning Strategies in the Digital Era*. Shanlax Publications.

Blankenship, R. J., & Baker, C. (2019). *Cases on Digital Learning and Teaching Transformations in Higher Education*. IGI Global.

Bernard, R., Borokhovski, E., Schmid, R., Tamim, R. M., & Abrami, P. C. (2014). A meta-analysis of blended learning and technology use in higher education: from the general to the applied. *Journal of Computing in Higher Education*, *26*(1), 87–122. https://doi.org/10.1007/s12528-013-9077-3

Holdsworth, S., & Thomas, I. (2020). Competencies or capabilities in the Australian higher education landscape and its implications for the development and delivery of sustainability education. *Higher Education Research and Development*, *40*(7), 1466–1481. https://doi.org/10.1080/07294360.2020.1830038

Pingali, S. R., Prakash, S., & Korem, J. R. (2021). *Digital Transformation Strategies: Theory and Practice*. Sage Publications Pvt. Limited.

Sulasmi, E., & Dalle, J. (2022). The impact of external factors on the acceptance of educational technology among the Indonesian junior school teachers. *Electronic Journal of e-Learning*, *20*(2), 211-223. https://doi.org/10.34190/ejel.20.2.2647