MUHAMMADIYAH EDUCATION'S READINESS IN THE SOCIETY 5.0 ERA

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Abstract

This study examines Muhammadiyah's readiness in education for the challenges of the society 5.0 era. Technology, Information, and Communication Technologies (ICT) are growing with the urgency of society 5.0 in education based on technology. It is significant to the modern education of Muhammadiyah, which has a progressive education spirit. The method used in this study is a literature review of various references to analyze the relevant data. As a result of the study, Muhammadiyah tried to develop a prophetic civilization, and the concepts of *khaira ummah* and *baldah thayyibah* as the recognition and expectations of the people and the nation toward Muhammadiyah, Muhammadiyah intellectuals synergized the potential resources in education. They strengthened religious-social movements as a driving force for the struggle by the spirit inherited by KH Ahmad

Dahlan. In this spirit, Muhammadiyah intellectuals challenge and construe society 5.0 based on human-centered. Muhammadiyah education in this era tries to improve educational facilities for digital-based learning in Muhammadiyah schools or madrasas; able to improve teacher human resources to innovate in digital-based learning both online and offline; able apply humanist learning with the main characteristics of respecting the opinions of others, respecting, and communicating correctly.

Introduction

The concept of Society 5.0 is an idea released by the Government of Japan in 2016 which carries the vision of developing science and technology for the future of society.[1] While one of the characteristics of education in the era of the industrial revolution 5.0 is the use of technology-based learning media and online-based learning models. The idea of Society 5.0 has the concept of big data technology collected by the Internet of Things (IoT), analyzed by Artificial Intelligence (AI), and returned to the real world, which can help people make life more meaningful.[2]

Society 5.0 also emphasizes a human-centered society.[3] The role of educa-

tors in the Industrial Revolution 4.0 era evolved to more vigilant, so educators are not allowed only in the transfer of knowledge but emphasize character, moral and exemplary education. Therefore, in transferring knowledge, it can be replaced by computer technology. However, soft skills and hard skills still cannot be shifted or replaced by media and technology.[4] Therefore, people hoped, throughout the era of society, 5.0 will be invented the technology in the field of education that change the role of teachers in teaching moral and exemplary education to students.

The education curriculum in Indonesia today is entering the era of the industrial revolution 4.0. In the educational trend in the 21st century, the competencies that must be learned in education are integrating Information and Communication Technology (ICT)

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[1] Laboratory Hitachi-U Tokyo, *Society 5.0* (Bunkyo-ku: The University of Tokyo, 2020).

[2] Ely Nastiti Faulinda & 'Abdu Aghni Rizqi Ni'mal, "Kesiapan Pendidikan Indonesia Menghadapi Era Society 5.0," *Edcomtech: Jurnal Kajian Teknologi Pendidikan* 5, no. 1 (2020): 61–66.

[3] Kayano Fukuda, "Science, Technology, and Innovation Ecosystem Transformation toward Society 5.0," *International Journal of Production Economics* 220 (2020). DOI:

10.1016/j.ijpe.2019.07.033.

[4] Ely Nastiti Faulinda & 'Abdu Aghni Rizqi Ni'mal, "Kesiapan Pendidikan Indonesia Menghadapi Era Society 5.0," *Edcomtech: Jurnal Kajian Teknologi Pendidikan* 5, no. 1 (2020): 61–66.

with knowledge, skills, and attitudes. According to UNESCO, the global challenge for education is to develop the pillars of education: learning to know, learning to do, learning to be, and learning to live together in peace. The Ministry of Education and Culture (Kemdikbud) complements these pillars with meaningful pillars following the national education goals: *learning to strengthen faith, piety, and noble character*.[5]

As initiated by KH Ahmad Dahlan, Muhammadiyah's educational ideals were to form new people as "ulama-intellect" or "intellect-ulama". Ulama-intellect in the Muhammadiyah sense is to produce students with characteristics such as scholars who hold fast to faith and piety based on the Qur'an and as-Sunnah (hadith). This intellectual ability is for someone who thinks about progressive Islam by the demands of his time. Therefore, through the da'wah activities of Muhammadiyah, as a large mass organization of Muslims in Indonesia, it encourages and strengthens faith and piety to Allah and carries out the Sunnah of the Prophet Muhammad to always be a human with noble character.[6]

According to Kuntowijoyo, Muhammadiyah is based on a combination of Islam and progressive thinking. Muhammad Azhar and Muhammadiyah figures in "*Pendidikan dalam perspektif al-Qur'an*" (Education in the perspective of the Qur'an) stated that Muhammadiyah tries to interpret education by referring to the Qur'an in discussing the latest developments in educational theory.[7] Progressive education is the motto of Muhammadiyah in advancing its education. Following the words of KH Ahmad Dahlan, "*Dadio kyai sing kemadjuan, lan aja kesel-kesel anggone mung nyambut gawe kanggo Muhammadiyah*" (Be a progressive religious figure, and don't give up on working for Muhammadiyah). Indeed, the educational process adopted by KH Ahmad Dahlan is modern but still maintains religious values, which are essential, even more so in the society 5.0 era.[8]

Muhammadiyah always strives to answer every opportunity and challenge by improving the quality of education and educators at Muhammadiyah Educational Institutions. Muhammadiyah also seeks to make breakthroughs in

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[5] Putu Eka Sastrika Ayu, "Keterampilan Belajar dan Berinovasi Abad 21 pada Era Revolusi Industri 4.0," *Purwadita* 3, no. 1 (2019): 77–83.

[6] Mohamad Ali & Marpuji Ali, "Filsafat Pendidikan Muhammadiyah: Tinjauan Historis dan Praksis," *Tajdida: Jurnal Pemikiran dan Gerakan Muhammadiyah* 2, no. 2 (2004).

[7] Muhammad Arif Syaifuddin et al., "Sejarah Sosial Pendidikan Islam Modern di Muhammadiyah," *Jurnal Pendidikan Islam* 8, no. 1 (2019): 1–9.

[8] Ahmad Agustiar, "Relevansi Konsep Pendidikan Berkemajuan KH. Ahmad Dahlan dalam Penyelenggaraan Pendidikan Dasar di Era Revolusi Industri 4.0" *Thesis*. Universitas Muhammadiyah Surakarta (2020).

educational facilities and innovations by creating technology-based programs as a form of readiness to welcome the era of society 5.0.[9] This article aims to reveal Muhammadiyah education's readiness to encounter society 5.0.

Muhammadiyah Education in the Industrial Revolution 4.0

Muhammadiyah has always existed as a pioneer by offering new things in social, socio-cultural, health, economic, political, and educational services.[10] Muhammadiyah has an essential role as the founder of the basic integration between general education and religious education (pesantren) dominated since the Dutch colonial era.[11] The struggle of KH Ahmad Dahlan is the background in Muhammadiyah's educational philosophy in progressive Islam without leaving its Islamic identity so that Muslims are required to be able to integrate it into the current developments of the

industrial revolution 4.0.[12]

The transformational changes in this era have implications for all lines of life. Technological developments and innovations such as hardware and software devices have resulted in fundamental changes in people's lives.[13] Education also contributes to developments in this era which in turn is affected by these technological devices.[14] Indicators of progress in education cannot be separated from the impact of technology which can also function as a solution or problem solver to the problems of human life today due to the demands of the modernization era.[15]

The Internet of Things (ToT) has become an alternative to solving work problems, and rigid living systems are becoming more practical, so today's Industrial Revolution 4.0, which was

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[9] Umar Al Faruq, "Peluang dan Tantangan Pendidikan Muhammadiyah di Era 4.0," *Ar-Risalah: Media Keislaman, Pendidikan dan Hukum Islam* 18, no. 1 (2020): 13–30.

[10] Rokhim, "Peran Organisasi Muhammadiyah dalam Bidang Pendidikan di Kecamatan Sukorejo Kabupaten Kendal," *Jurnal Ilmiah Pendidikan Sejarah IKIP Veteran Semarang* 2, no. 1 (2014).

[11] Arifin Zain, Maimun Yusuf & Maimun Fuadi, "Internalisasi Nilai-nilai Modernitas dalam Gerakan Dakwah Organisasi Muhammadiyah di Aceh," *Al-Idarah: Jurnal Manajemen dan Administrasi Islam* 1, no. 1 (2017).

[12] Rokhim, "Peran Organisasi Muhammadiyah dalam Bidang Pendidikan di Kecamatan Sukorejo Kabupaten Kendal."

[13] Ichwan Kurniawan & Much. Rifqi Maulana, "Pemanfaatan Aplikasi Mobile Augmented Reality sebagai Media Pembelajaran Materi Hardware Multimedia pada Matakuliah Sistem Multimedia di STMIK Widya Pratama," *Jurnal IC-Tech* 10, no. 1 (April 2015): 9–15.

[14] Lonika D Tesa, Amallia Noviani & Muhammad Mona Adha, "Civic Literacy: Sebagai Upaya dalam Mempersiapkan Warga Negara Menuju Era Society 5.0," *Prosiding. Seminar Nasional Virtual Pendidikan Kewarganegaraan* (2021).

[15] Ahmad Muttaqin, "Religion, Science, and Culture Amidst the Covid-19 Pandemic: Muhammadiyah's Worship Guidance and Members' Responses," *Al-Albab* 10, no. 1 (2021).

immediately followed by the industrial revolution 4.0, needs to be responded to wisely so that these changes can be helpful for human life.

In the field of education, especially higher education institutions as implementers of education level 6 and above at the level of the Indonesian National Qualifications Framework (KKNI) have an important role in responding to these changes.[16]

Muhammadiyah passed through quality competition in the era of disruption and industrial revolution 4.0. With the competition carried out with collaboration, it can be a solution to the partial work and imbalance of the education ecosystem in this country.[17] In this context, Muhammadiyah has at least three keys to success in future development (triple E to grow and develop). The three keys are *education and technology collaboration, education and entrepreneurship collaboration, and general education collaboration with religious education.*[18]

The first is a collaboration between education and technology. Education and technology collaboration is the latest approach to how educational innovation occurs in developing technology-based learning media, technology-based education management, technology-based staffing, and all technology-based institutional needs. The basis of this technology is the use of hardware and software that can facilitate work and budgeting effectively and efficiently, which in turn makes an innovative educational program. Educational innovation in the context of technology is a set of educational activities in which research and community service can be assisted by access to the technology. Thus, the collaboration between education and technology can be used as a strategic alternative to improving the quality of education.[19]

Second is the collaboration between education and entrepreneurship. This collaboration is a combination of college management and company management. This management began to be developed by several universities to survive in the era of free trade. The openness of traffic, both ideas and goods, between countries has forced universities to find strategic ways to become actual educational institutions as before. The collaboration of education and entrepreneurship is concretely the capita-

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[16] Djono Djono, Hermanu Joebagio & Nur Fatah Abidin, "Gerak Sejarah Integratif-Multidimensional: Warisan Sartono Kartodirdjo bagi Filosofi Pendidikan Sejarah Menuju Society 5.0," *Criksetra: Jurnal Pendidikan Sejarah* 9, no. 1 (2020).

[17] Umar Al Faruq, "Peluang dan Tantangan Pendidikan Muhammadiyah di Era 4.0," *Ar-Risalah: Media Keislaman, Pendidikan dan Hukum Islam* 18, no. 1 (2020): 13–30.

[18] Al Faruq, "Peluang dan Tantangan Pendidikan Muhammadiyah di Era 4.0."

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[19] Al Faruq.

lization of the potential in educational institutions so that they can be "sold" to the public with superior quality or distinction when compared with others. This aspect of entrepreneurship is extensive in scope. Globally, the mindset of building entrepreneurship-based educational institutions is to make financial potential internally so that it can be "sold" to the public. However, the selling value does not directly generate financial results but can be in the form of public trust, relations, and increasing public interest in studying at the educational institution. Thus, the institution's financial income does not rely on finances that come from student tuition. It is the core of interest in collaborative education and entrepreneurship.[20]

The third is the collaboration of education and religion. General education collaboration carried out by Muhammadiyah must internalize the religious values contained in Muhammadiyah's belief, Muhammadiyah's Islamic life guidelines, and other regulations related to Islam and Muhammadiyah in the industrial revolution 4.0 era.[21]

The era of the industrial revolution 4.0 is an era of collaboration between humans, technology, and big data as the main dimensions in various contexts as described previously. The use of the Internet of Things (IoT) and Artificial Intelligence (AI) in various aspects of life characterizes the current era of the industrial revolution 4.0, including the field of education. Therefore, several efforts should be implemented: curriculum revitalization and properly using information technology.[22] In the era of the industrial revolution 4.0, teaching has used online and also offline-based technology to facilitate teaching and learning. The previous education using direct learning, nowadays in the era of the industrial revolution 4.0, especially during the Covid-19 pandemic, can be carried out through online learning.

Muhammadiyah Education seeks to develop innovations, especially in education, with technology-based programs or applications as a form of

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[20] Ivo Yuliana, "Pembelajaran Berbasis Etnosains dalam Mewujudkan Pendidikan Karakter Siswa Sekolah Dasar," *ELSE (Elementary School Education Journal): Jurnal Pendidikan dan Pembelajaran Sekolah Dasar* 1, no. 2a (2017); Erna Rochmawati, "Peningkatan Kapasitas Kader Muhammadiyah dalam Penanganan Gejala pada Lansia dengan Penyakit Kronik," *Prosiding.* Seminar Nasional Program Pengabdian Masyarakat (2021).

[21] Ardhana Januar Mahardhani, Iqbal Akbar Imamudin & Fendy Eko Hardiawan, "Upaya Mitigasi Bencana melalui Aplikasi Dayakan Mitigation Center (DMC)," *Jurnal Pemberdayaan Masyarakat Universitas al-Azhar Indonesia* 3, no. 2 (2021); Sarmiasih and Pratama, "Dukungan Kolektif Civil Society dalam Pengarusutamaan Gerakan Anti Korupsi di Indonesia."

[22] Faulinda & Aghni Rizqi Ni'mal, "Kesiapan Pendidikan Indonesia Menghadapi Era Society 5.0."

readiness in the era of disruption of the industrial revolution 4.0 by utilizing ICT both in learning and lectures at Muhammadiyah Educational Institutions. Thus, Muhammadiyah initiated the Muhammadiyah Online University (MOU) program on the 107th anniversary of Muhammadiyah at the University of Muhammadiyah Yogyakarta. The General Chairman of Muhammadiyah, Haedar Nashir, said that the MOU is a database system that can encompass Muhammadiyah's higher education levels throughout Indonesia with online-based learning. To develop the learning process of Muhammadiyah Higher Education, the MOU does not require lecturers and students to go to campus because lectures are online. The study programs at the MOU that became this prototype were Management, Informatics Engineering, and Public Health.[23]

In Junior High School (SMP) education, Muhammadiyah encourages using Information and Communication Technology (ICT), especially during the Covid-19 pandemic. For example, online learning at SMP Muhammadiyah 2 Taman during the Covid-19 pandemicis is not allowed to study face-to-face in class. The learning media uses such as WhatsApp, Zoom, Google Meet, and Google Classroom.[24]

The Muhammadiyah Primary and Secondary Education Council (Dikdasmen) introduced its new educational development program: the Muhammadiyah Digital Education application (eduMU). As a school information and integrated digital learning management system based on websites and mobile phones (smartphones), the eduMU application integrates the entire learning process in Muhammadiyah educational institutions. The application is designed to connect parents, students, and educators in the learning process in schools and madrasas through the primary national big data of Muhammadiyah education.[25] The digital school application belonging to the Muhammadiyah Dikdasmen responds to the challenges of the industrial revolution 4.0 by increasing student achievement in Muhammadiyah schools and madrasas. The development of education at the elementary and secondary levels by Dikdasmen Muhammadiyah by utilizing ICT to facilitate management activities in schools and learning aims to improve the quality of Muhammadiyah education.

The eduMU application as a Learning Management System and integrated

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[23] Faruq, "Peluang dan Tantangan Pendidikan Muhammadiyah di Era 4.0."

[24] Syilviana Eka Purwanto & Muhlasin Amrullah, "Learning Strategies at SMP

Muhammadiyah 2 Taman during the Covid 19 Pandemic," *Proceedings*, The ICECRS 10 (2021).

[25] Dikdasmen, "Edukasi Digital Muhammadiyah," Majelis Dikdasmen Pimpinan Pusat Muhammadiyah (2020), 6–7.

school information is designed to create, distribute, and manage the delivery of online learning materials and activities, which is very helpful for student learning at school. In addition, parents and teachers can monitor their students' learning progress through this application. If the student's progress declines, it can be monitored on the eduMU application. That way, teachers and parents can provide additional learning at home more intensely. The eduMU application is also effective on students' learning motivation and is an alternative solution for online-based learning for schools and madrasas under the Muhammadiyah Educational Institution.[26]

On another aspect, the acceleration of Muhammadiyah education in its development through the Amil Zakat Infaq and Sadaqah Muhammadiyah Institute (LazisMU) initiated a digital-based learning program without internet quota, namely EdutabMu. EdutabMU is an alternative fun learning application that does not use the internet—this is for schools and madrasas in 3-T areas, underdeveloped areas, borders, and remote areas. However, EdutabMU focuses on PAUD, Kindergarten, and Elementary School Grades 1 and 2 stu-

dents. This application is evidence that Muhammadiyah education continues to innovate and develop to prepare for challenges in the industrial revolution 4.0 era.

Therefore, in this era, Muhammadiyah has accelerated and expanded to advance Muhammadiyah educational institutions from elementary to university levels. In addition, Muhammadiyah educational institutions also strengthen their network with other educational institutions. For Haedar Nasir, the acceleration and expansion of Muhammadiyah educational institutions to compete in the era of the industrial revolution 4.0 by increasing innovation, accreditation, and quality of education. Thus, Nasir hopes that students at Muhammadiyah schools will become superior, qualified, and innovative Muslims.[27] Again, Muhammadiyah will also build a Muhammadiyah University in Australia to accommodate access to education for Indonesians in Australia and also for the public if possible.

The Urgency of Education in the Society 5.0 Era

Society 5.0 is a development concept that aims to make people take advantage of future science and technology development. Society 5.0 is human-centered and technology-based. In the

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[26] Kusniati, "Efektivitas Penggunaan Aplikasi Edumu pada Pembelajaran Fisika terhadap Motivasi Belajar Peserta Didik Kelas XI IPA di SMA Muhammadiyah 1 UNISMUH Makassar," Universitas Muhammadiyah Makassar (2021).

[27] Al Faruq, "Peluang dan Tantangan Pendidikan Muhammadiyah di Era 4.0."

society 5.0 scheme, data from the real world forwarded to the virtual world is collected, analyzed, and applied to the real world again to make it more functional and meaningful in human life.[28] It means that, in society 5.0, a human-centered society with the use of technology can balance the needs of convenience with its impact.

The era of society 5.0 is different from the industrial revolution 4.0 in the scope of future goals in technological innovation. Industrial revolution 4.0 calls for an industrial revolution centered on manufacturing but ignores its impact on the people. In contrast, the concept of society 5.0 is human-centered and focuses on the technology's impact on the people and the need to create a better society. Therefore, the vision of society 5.0 is a reform program intended to construct an inclusive society that meets its needs and preferences.[29]

In education in the era of society 5.0, the teaching and learning process can utilize technology to make learning more effective and meaningful. Teachers are required to innovate in developing offline and online digital-based learning media. That way, education becomes one of the social functions for creating

human life in society 5.0 era.[30] The concept of society 5.0 emphasizes human-centered education. This education can be associated with humanist learning. The humanist approach views humans as perfect, unique, potential, and free creatures. Humanist education should be able to realize the role of humans by providing the broadest possible opportunity for students to develop their potential.[31]

The characteristics of humanist learning are student-centered, which makes students as inventors who do not only accept knowledge, facts, and procedures. Teachers can give students problems in the form of problem-solving so that students can find solutions to the issues presented. Teachers can also form discussion groups. The teacher must be able to relate the material to its application in everyday life. Teachers should also make students understand the subject matter better, including patterns, perspectives, and creativity. Therefore, humanist education emphasizes the importance of effectively building com-

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[28] Laboratory, *Society 5.0;* Pristian Hadi Putra, "Tantangan Pendidikan Islam dalam Menghadapi Society 5.0," *Jurnal Islamika: Jurnal Ilmu-Ilmu Keislaman* 19, no. 2 (2019): 99-110.

[29] Laboratory, *Society 5.0.*

[30] Kurniawan Nanda Alfan & Ummu Aiman. "Paradigma Pendidikan Inklusi Era Society 5.0," *JPD: Jurnal Pendidikan Dasar* (2020): 1–6. http://journal.unj.ac.id/unj/index.php/psdpd/article/view/17736.

[31] Yusuf Falaq, "Education of Citizenship in Higher Education as a Fortress of Nation Characters in Facing Era Society 5.0," *Journal of Educational Sciences* 4, no. 4 (2020): 802. DOI: 10.31258/jes.4.4.p.802-812; Moh Mahfud Effendi, *Pembelajaran Humanis Masa Pandemi* (Yogyakarta: Bildung, 2020).

munication and relationships between personal and school community groups.

In developing and cultivating the relationship model, students can present themselves so that the learning process has a meaningful relationship with the school community. Thus, the main characteristics of an effective humanist education are a learning process that respects each other and communicates optimally, even though in different scopes of diversity.[32]

Muhammadiyah Education Efforts to Encounter the Society 5.0

Muhammadiyah education has the motto "progressive education" with a modern nuance by maintaining religious values. The *Paradigma Pendidikan Berkemajuan* (Progressive Education Paradigm) noted that progressive education is the use of the basis of religious (Islamic) values to achieve progress in life for individuals and socially by continuously trying to improve life. It is an indicator of progressive education, so the question: is Muhammadiyah's education well prepared to encounter society 5.0? Here are some ways that Muhammadiyah's education can do.

The first is educational facilities. Muhammadiyah must strive to improve the quality of educational facilities in

schools or madrasas under Muhammadiyah Educational Institutions. It is because, as we know, technology in the era of society 5.0 is essential to facilitate human performance. Muhammadiyah education must continue to innovate and utilize technology to successfully collaborate the real and virtual worlds to make learning meaningful for students. Although Dikdasmen Muhammadiyah has innovated in education development through its programs and applications from both eduMU and EdutabMu, the results of these innovations (programs and applications) must also be used optimally by Muhammadiyah education in all Muhammadiyah schools or madrasas in Indonesia.

Second, improving the human resources of Muhammadiyah teachers or educators through digital-based innovation learning training so that they have skills in technology and creative thinking in the learning process. Director of Highly Functioning Education Consulting Services (HAFECS), Zulkifar Alimuddin, considered that teachers in the era of society 5.0 must be more innovative and flexible in teaching in the classroom. The concept of Innovative and Creative Learning (ICL) can have an impact on students to improve achievement and be able to compete globally.

Third, the Muhammadiyah Elementary and Secondary Education Council

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[32] Lazuardi, "Pendidikan Humanisme dalam Perspektif Pendidikan Muhammadiyah," *Forum Paedagogik* 10, no. 2 (2020): 1–15.

(Dikdasmen), as the administrator of Muhammadiyah school or madrasa education, must be able to design a human-center-oriented educational approach in this era of society 5.0. One of them is a humanistic approach that can fulfill the human role by providing the most comprehensive opportunity for students to develop their potential. The main characteristic of effective humanist education is a teaching and learning process that respects the opinions of others and respects and communicates well even in different spheres of diversity.[c]

Conclusion

The era of society 5.0 is an era where people's lives are human-centered and technology-based. Whereas in the society 5.0 era, education utilizes technology in the teaching and learning process to realize the human role by providing the broadest possible opportunity for students to develop their potential.

Muhammadiyah education in the era of society 5.0 can improve educational facilities for digital-based learning in Muhammadiyah's schools or madrasas; able to improve teacher human resources to innovate in digital-based learning both online and offline; able apply humanist learning with the main characteristics of mutual respect for the opinions of others, respect, and good communication.

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cana Melalui Aplikasi Dayakan Mitigation Center (DMC)." *Jurnal Pemberdayaan Masyarakat Universitas al-Azhar Indonesia* 3, no. 2 (2021). DOI: 10.36722/jpm.v3i2. 560.

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