

Management Perspective of Islamic Educational Institutions in Facing The Industrial Revolution 4.0.

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المخلص:

الصناعة 4.0 هي حالة حقيقية نواجهها. لتلبية هذا الشرط ، لا تزال إندونيسيا بحاجة إلى تحويل البنية التحتية لتكنولوجيا المعلومات ، ولم يعد من الممكن حل المشكلات التي تحدث في هذا الوقت بنفس الطريقة كما في الماضي. لا تكفي الثورة الصناعية 4.0 لمواجهة التطور التكنولوجي وحده ، بل يجب أن تتضمن الديناميكيات الاجتماعية فيها. لذا فإن إعداد ميزة تنافسية ضروري للإجابة على تطور عالم اليوم ، عندما تتدفق المعلومات بسرعة كبيرة دون أن تكون قابلة للتنبؤ على وجه اليقين. السؤال المهم هو ما إذا كان مفهوم استراتيجية السياسة الوطنية قد تمت صياغته بشكل صحيح. هل بدأت المؤسسات التعليمية في المجتمع ، وخاصة مؤسسات التربية الإسلامية ، في التصميم للتكيف مع احتياجات الخبرة في العصر الصناعي 4.0. علاوة على ذلك ، كيف يمكن للمعلمين والموظفين التربويين ومديري المؤسسات التعليمية الإسلامية تصميم الإدارة بنموذج جديد وتوقع وملء الصناعة 4.0 ، خاصة فيما يتعلق بالقيم المبنية ، لأنه من المؤكد أن الصناعة 4.0 سيكون لها تأثير سلبي . هذا هو المكان الذي تلعب فيه مؤسسات التربية الإسلامية دورًا. تهدف هذه الورقة إلى الإجابة على بعض هذه الأسئلة. الطريقة المستخدمة في كتابة هذا المقال هي طريقة وصفية نوعية من خلال منهج بحث المكتبة. الاستنتاجات من هذه الورقة هي (1) إدارة الحكم في المؤسسات التعليمية الإسلامية لا تزال ضعيفة. (2) تأثير الصناعة 4.0. تحتاج المؤسسات التعليمية الإسلامية إلى الاستجابة بحكمة ؛ (3) الحاجة إلى إصلاحات واسعة النطاق في المؤسسات التعليمية الإسلامية. (4) هناك حاجة إلى طريقة تفكير ثورية ومتجاوبة وذات رؤية من جميع الأطراف لإنشاء مؤسسات تعليمية إسلامية قادرة على الاستجابة لتأثير الثورة الصناعية الرابعة وعصر الاضطراب الحالي ؛ و (5) أهمية تعزيز إدارة الحوكمة في مؤسسات التربية الإسلامية. إن حل هذه المشاكل هو الحاجة إلى إصلاحات ضخمة في إدارة المؤسسات التعليمية الإسلامية حتى تكون قادرة على الاستجابة لتحديات ومطالب العصر التي تتغير باستمرار. بالإضافة إلى ذلك ، تسعى هذه الورقة أيضًا إلى تقديم عرض منفرد للتعليم الإسلامي في مواجهة عصر الثورة الصناعية 4.0.

الكلمات المفتاحية: إدارة؛ المؤسسات التعليمية الإسلامية ؛ الثورة الصناعية 4.0

Abstract:

Industry 4.0 is a real condition that we face. To meet this condition, Indonesia still needs IT infrastructure transformation. The problems that are happening at this time can no longer be solved in the same way as in the past. The Industrial Revolution 4.0 is not sufficient only to be faced with technological sophistication alone, but must also involve social dynamics in it. So preparing a competitive advantage is necessary to answer the development of today's world, when information flows very quickly without being predictable with certainty. The important question is whether the concept of national policy strategy has been formulated properly. Have educational institutions in the community, especially Islamic Education institutions, begun to be designed to adapt to meet the needs for expertise in the industrial era 4.0. Furthermore, how can educators, educational staff, managers of Islamic educational institutions design management with a new paradigm and to anticipate and fill industry 4.0, especially in terms of the values built, because it is certain that industry 4.0 will have a negative impact. This is where Islamic Education institutions play a role. This paper aims to answer some of these questions. The method used in writing this article is a qualitative descriptive method through a library research approach. The conclusions from this paper are (1) the governance management of Islamic educational institutions is still weak; (2) the influence of industry 4.0. Islamic educational institutions need to respond wisely; (3) the need for massive reforms in Islamic educational institutions; (4) a revolutionary, responsive and visionary way of thinking is needed from all parties to create Islamic educational institutions that can respond to the influence of the Industrial Revolution 4.0 and the current era of disruption; and (5) the importance of strengthening governance management in Islamic educational institutions. The solution to these problems is the need for massive reforms in the management of Islamic educational institutions so that they are able to respond to the challenges and demands of the changing times. In addition, this paper also seeks to provide a solutive offer for Islamic education in facing the Industrial Revolution 4.0 Era.

Keywords: Management; Islamic educational institutions; industrial revolution 4.0

Introduction

Changes in human life are needs and imperatives that characterize living things. Changes in life certainly have an impact, both positive and negative.

Advances in science and technology as a part of change have affected human life. The existence of information technology makes a necessity of human life a challenge that is currently being faced by humans. With the sophistication of digital devices that are growing more and more massive day by day, space, distance and time are no longer obstacles for humans to carry out various activities. Use of computing devices and use of unlimited data which in the end can overcome obstacles in every sector of people's lives. (Hermawan et al., 2021)

The rapid development of science and technology accompanies the development of lifestyle. That speed is called the "Revolution". The discovery of the steam engine by James Watt resulted in an industrial revolution that was able to replace animal and human power in transportation and even almost all the needs of human life. The Industrial Revolution is still running as a form of improvement to facilitate human work itself. And now this Industrial Revolution is called the Industrial Revolution 4.0, hereinafter referred to as Industry 4.0.

Industry 4.0 is an industry that combines automation technology with cyber technology. This is the trend of automation and data exchange in manufacturing technologies, including cyber-physical systems, Internet of Things (IoT), cloud computing and cognitive computing. Industry 4.0 produces "smart factories". Within a modular structured smart factory, cyber-physical systems monitor physical processes, create virtual copies of the physical world, and make decentralized decisions. Through the internet for everything (IoT), cyber-physical systems communicate and cooperate with each other and humans together. Through cloud computing, internal and cross-organizational services are provided and utilized by various parties in the value chain. (Haris, 2019)

The impact of industry 4.0 is no exception to the world of education in general and more specifically Islamic education. The impact of developments and shifts in lifestyles demands that the management of Islamic Education must adapt to this situation. If you don't adapt, it's not impossible to be abandoned.

The world of education after the presence of the disruptive innovation phenomenon is predicted to enter the era of digitalization of the education system. Teaching and learning activities will change completely. Classrooms have evolved with digital learning patterns that provide learning experiences that are more creative, participatory, diverse, and comprehensive. The existence of information technology has erased geographical boundaries which triggers the emergence of new ways to produce new innovations. developments in digital technology with artificial intelligence (AI) that turn data into information, making it easy and inexpensive for people to obtain. (Pera Afrizal, 2021)

Challenges and obstacles to Islamic education to date continue to experience changes and shifts. If at some time ago the intimate conversation between students and teachers felt unusual, at this time it is actually a natural thing. Even according to the opinion of modern educational theory, it is a necessity. Such a relationship is precisely an indication of the success of the educational process. (Harris, 2019).

The phenomenon of Industry 4.0 becomes a thought for all people, especially regarding the management of education in Islamic Education Institutions, on the one hand it has the task of securing the practice of Islamic religious values in the younger generation, but on the other hand it must be anticipatory towards challenges or influences from Industry 4.0 which is said to be also the era of uncertainty (disruption). So it is necessary to revolutionize the paradigm of thinking from traditional to rational, from defensive to offensive and from passive to active and innovative in managing learning in Islamic Education institutions.

This paper seeks to encourage the need for massive reforms in the body of Islamic education. This reform is necessary so that Islamic education is able to answer the challenges and demands of the times which are constantly changing. In addition, this paper also seeks to provide a solutive offer for Islamic education in facing the Industrial Revolution 4.0 Era.

The method used in writing this article is descriptive qualitative through a library research approach, by collecting, reading and analyzing reading material in the form of books, e-books, journals, e-journals, newspapers and e-papers as well as information materials. other. According to Sudjana and Ibrahim (2004: 64) descriptive research is "research that seeks to describe a symptom, event, event that is happening at the present time" (Jayusman &

Shavab, 2020). The author describes in general the current conditions regarding discourse and objective conditions in the era of the Industrial Revolution 4.0 disruption in the field of education. The author also tries to collect some of the problems faced by Islamic educational institutions in the operational management of their learning.

Theoretical review

Etymologically, management means management and governance, management can also mean leadership of a group to achieve goals. Meanwhile, terminologically, management means the science or art of managing the use of Human Resources (HR) and other resources effectively and efficiently to achieve certain goals. (Thoha, 2016)

Meanwhile, according to Malayu S.P Hasibuan in Fajri DwiYama (2018) the elements of management consist of men, money, methods, materials, machines, and markets. The position of these management elements if managed properly can be more efficient, effective, integrated and coordinated to achieve optimal goals. (DwiYama, 2018).

In general, the concept and function of management is to help the effectiveness and efficiency of system performance that is built so that it is right on target according to the plans and desires of individuals or groups.

The concept of education itself is a human effort to build his personality to conform with the norms or rules in society. Every adult in society can become an educator, because being an educator is an important social act in the growth or development of students to become human beings who are able to think maturely and wisely.

Then what is meant by the word Islamic Education that forms the word education itself in relation to Islamic teachings. There are three terms commonly used in Islamic education, namely al-Tarbiyat, al-Ta'lim and al-Ta'dib. Tarbiyat means nurturing, raising and educating which broadly and deeply includes the meaning of teaching (Muh. Wasith, 2018).

Syed Muhammad Al-Naqib Al-Attas, a figure in Islamic educational thought, argues that in fact the most appropriate term for Islamic education is "ta'dib", because the structure of the ta'dib concept already includes elements of the science of instruction (ta'lim), and good coaching (tarbiyah). In contrast to Al-Attas's opinion, the I International Islamic Conference in Mecca in 1977

interpreted Islamic education to include three meanings at once, namely *tarbiyah*, *ta'lim*, *ta'dib*. (Machali & Hamid, 2017).

From this opinion it can be underlined that Islamic education is actually education that requires the formation of human beings with Muslim personalities whose all aspects of life are based on Islamic teachings and all of their activities are believed to be worship in the context of devotion to Allah and submission to Him.

Meanwhile, what is meant by management of Islamic education as stated by Ramayulis (2008) is the process of using all devices owned (Muslim community, educational institutions or others) both hardware (hardware) and software (software). The intended use is carried out by cooperating with other people in an effective, efficient and productive manner in order to achieve happiness and prosperity both in this world and in the hereafter. (Zaini, 2015).

The next opinion regarding the Management of Islamic Education according to Mujamil Qomar in Mansyur (2008), defines the management of Islamic Education as a way of managing Islamic educational institutions in an Islamic manner by dealing with learning resources and other related matters in order to achieve the goals of Islamic education effectively and efficient. Management must prioritize Islamic management, because this is what distinguishes Islamic management from general management. (Mansyur, 2020)

From the above opinion it can be concluded that the management of Islamic Education is basically the same as the management of Education in general, only in the management of Islamic Education the purpose of management is in order to achieve goals in an Islamic way and in order to instill Islamic values.

Then the management function in Islamic Education institutions in carrying out the educational process so that it can be achieved effectively and efficiently and on target, then the management function is very important.

Some management experts argue that the function of management in organizations or institutions is as a means or tool to achieve goals, including in educational institutions and Islamic education institutions are no exception. The management functions according to several experts, among others according to Henry Fayol, management functions include: 1. Planning; 2. Organizing; 3. Giving orders; 4. Coordination and 5. Controlling.

Next According to L. Gulick management functions include: 1. Planning; 2. Organizing; 3. Work arrangement; 4. Briefing; 5. Coordination; 6. Preparation of reports and 7. Control. While G.R. Terry believes that management functions include: 1. Planning 2. Organizing 3. Executing/Driving 4. Controlling

From the several opinions above, it can be concluded that in general management functions are 1. Planning; 2. Organizing and 3. Controlling. The management function also applies to activities in educational institutions in general and specifically in Islamic educational institutions within them.

Meanwhile regarding the Industrial Revolution 4.0 or hereinafter referred to as Industry 4.0. The term "Industrie 4.0" originates from a project within the German government's high-technology strategy that prioritizes computerization of factories. The term "Industrie 4.0" was revived at the 2011 Hannover Fair.] In October 2012, the Working Group on Industry 4.0 presented recommendations implementation of Industry 4.0 to the German federal government. Members of the Industry 4.0 working group are recognized as the founding fathers and pioneers of Industry 4.0.

The revolution that is currently being faced, although it is still in the process of being reformed, its effects are already being felt. Industry 4.0 is a major trend in the industrial world that combines automation technology with cyber technology. Germany is the originator of Industry 4.0 which is marked by the government's advanced technology strategy which prioritizes factory computerization. In this industrial revolution, manufacturing workers have become a trend of automation and data exchange covering cyber-physical systems, cognitive computing and others.

This trend has changed the way people think and live in various fields, including the world of work, education and even the lifestyle of the people. In short, the industrial revolution 4.0 makes intelligent technology or robots the main center for connecting various fields of human life. (Wikipedia, 2022).

Industry 4.0 is also known as the digital revolution and the era of technological disruption. It is said that the digital revolution is caused by the accelerated development of computers and automatic recording in all fields. Then what is meant by the era of technological disruption due to connectivity and automation in all fields will cause non-linear movement of the industrial world and job competition. In simple terms, businesses that do not use the

internet and digital technology will have their stability disrupted. (Maysitoh & Agung, 2018).

The fruit of the industrial revolution 4.0 is the emergence of disruptive innovation symptoms. The impact of these symptoms or conditions has penetrated all sectors of life. Starting from the industrial sector, the economy, education, politics, and so on. This phenomenon has also succeeded in shifting the lifestyle (life style) and mindset (mindset) of the world community. Disruptive innovation can simply be interpreted as a phenomenon whereby old industrialists (incumbent) are disrupted by new industrialists due to the convenience of information technology. (Herman et al., 2021)

From the explanation of the description of conditions in the Industrial 4.0 era, the impact on the world of education, especially Islamic Education, is of course very pronounced. The development of internet-based information technology almost 24 hours affects the lives of students. The role of social media as a communication tool is almost limitless, which of course also directly or indirectly affects the atmosphere of teaching and learning activities.

The industrial revolution 4.0 with its disruptive innovations also positions Islamic education in a very dilemmatic position. The dilemmatic position has its own impact. Islamic education is free to make choices. If he chooses to be in the old position, that is, to stick with the old pattern and system, then he must be ready and open-minded if he is getting left behind. Conversely, if he can open himself up and is willing to accept the era of disruption with all its consequences, then he will be able to compete with others (Hermawan et al., 2021).

Regarding the problem of the Industrial Revolution 4.0 and its impact on education in general, the authors have encountered several previous studies by Ratna Ekasari, et al (2021), Yusnaini and Slamet (2019), and Akhmad Riadi (2021) or those related specifically to the Ratu Nisa Shafira Islamic Education Institute Hermawan, et al. (2021), Yayat Suharya, et al. (2018), Pristian Hadi Putra (2019) and Muhammad Nur Asmawi (2018).

Discussion :

A. Management of Islamic Education institutions

a). Understanding and Management Functions

Management is a word that is very familiar in everyday life. And almost every time people mention and even discuss it. There are several experts or experts who argue about what management is.

According to Sulistyorini in Rahendra & Iko, (2018) language management comes from English, namely management. The word management comes from the verb to manage which means to take care of (Rahendra & Iko, 2018).

Furthermore, Marry Papker Follett, in Muwahid Shulhan and Soim (2013) quoted by A.Malik and A.A.Musaffa said "Management is an art in completing work through other people's intermediaries. This understanding implies that managers in achieving organizational goals through setting other people to perform various tasks that may be needed, or useful by not doing the tasks themselves, with increasing needs by means of measuring (assessment) .(Khalik & A.A. Musyaffa, 2021).

Meanwhile, according to Hadari Nawawi in Jemani (2020), said management is a set of processes, management also consists of primary functions and secondary functions in administration. The primary function is none other than the management function in administration, which includes: planning, organizing, commanding, coordination, control and communication functions. Meanwhile, those that include secondary functions in administration are: administration, finance, personnel, logistics (supplies) and public relations." (Jemani, 2020).

From the opinions mentioned above, we can interpret that management activities are the art of taking care of work delegated through other people by first going through the process of planning, organizing, directing, coordinating, controlling. (control) and communication (communication) and these activities are all in the form of administration both in the form of personnel and finance.

The main objective of management activities is to facilitate or create an effective and efficient work atmosphere in accordance with the plans and expectations expected to achieve a certain goal.

b). Management according to Islam

Since the beginning of the existence of Islam religion aims to organize human life. This can be seen that all Islamic law is to create an orderly human life which is implemented in Islamic teachings in all behavior. And everything

is expected to function as a value of worship. Islam as a complete religion outlines all the activities of its adherents regulated by teachings and prayers, starting from public and private affairs. And this is in line with modern management functions which aim to organize work processes or services in an orderly way, to create effectiveness and efficiency in the performance of a person and or group as well in an organization.

Management according to Islamic view is fair management. The fair limit is that the leadership does not abuse staff or executors and the executor does not harm the leadership or the company they occupy. The forms of abuse mentioned are for example reducing or not giving the executor's rights and forcing the executor to work beyond the provisions. It is better if the work agreement is made for the common interest between the leader and the executor. If a manager requires the executor to work beyond the allotted working time, then in fact the manager has tyrannized the executor. And this is very contrary to the teachings of Islam. (Fahmi, 2020)

So it is clear that the principle of management in Islam is to uphold justice in every activity carried out by humans, both individually and in groups. By upholding justice, peace of work will be created. Calm will be created because they work based on worship to their Lord. Or in other words management according to Islamic view is management based on "justice".

c). The Essence of Islamic Education Management

To understand the concept of management of Islamic Education as a whole, there is nothing wrong if we understand what Islamic Education is. So far, some literature on Islamic education has introduced at least three words related to Islamic education, namely al-tarbiyah, al-ta'lim, and al-ta'dib. If you trace the verses of the Qur'an and matan as-Sumah in depth and comprehensively, apart from these three words, there is still the word al-tazkiyah. (Siti Asiah, 2018).

According to Jalaludin (2016) in Triana Rosalina Noor, "Basically Islamic education is a concept that cannot be separated from the values of Islamic teachings themselves. This is because in essence, education is an effort that is believed to be the most effective in realizing the values of Islamic teachings as a whole and thoroughly. In principle, Islamic education is a concept that cannot be separated from the values of Islamic teachings themselves. This is because in essence, education is an effort that is believed to be the most

effective in order to realize the values of Islamic teachings as a whole and comprehensively "(Noor, 2019).

From the opinions above, in general we can understand that Islamic education is an educational concept that aims to instill Islamic values through an educational process that aims to realize these values in life after following the process for students who follow it.

As for achieving the objectives in Islamic Education, administratively management is needed to regulate the process of implementing education through the management of Islamic Education.

If we talk about management of Islamic education, in essence, we cannot escape talking about management in general, it's just that in the special sense of management of Islamic education, there are certain characteristics that are specifically of course not found in the concept of management in general. In the following, the author quotes several expert opinions on the management of Islamic Education.

Management of Islamic education is a process of operating Islamic educational institutions in an Islamic manner by dealing with learning resources and other matters related to achieving the goals of Islamic education effectively and efficiently. (Zaini, 2015)

Management of Islamic education in a practical sense, is management that is practiced in Islamic educational institutions in practice, namely carrying out the principles and functions of management in Islamic educational institutions. Management practices that grow and are commonly carried out in general-secular organizations are borrowed and then adopted in Islamic educational institutions. The word "Islam" in this kind of management practice is institution/organization and spirit, Islamic values that animate organizational activities. (Machali & Hamid, 2017).

From some of the opinions mentioned above, it can be concluded that basically the management of Islamic Education itself comes from modern management concepts in general, then combined with Islamic principles and values, or in other words management with an Islamic spirit in practice.

Meanwhile, the Management of Islamic Education described above generally has a function in the process of implementing Islamic Education itself, some experts argue as the authors quote below. Talking about the management function of Islamic education cannot be separated from

management functions in general as stated by Henry Fayol, a French industrialist, he said that the management functions are planning, organizing, ordering, coordinating.), and control (controlling). (Fahmi, 2020)

Each science will have a basic function, as well as in education management. Focused on Islamic education management, has 4 function sections. The four functions include the planning function, the organizing function, the directing function, and the supervisory function. The following is an explanation for each function of Islamic education management.

1). Planning function (planning).

Planning is the initial foundation in determining all steps. Through careful planning, one can determine the right goals and strategies. By planning, you can also minimize the losses you face. Likewise in the management of Islamic education, there is a need for proper planning or planning.

2). Organizing function (organizing).

After planning, the next function is organizing. This function also includes the determination of functions, relationships and structures. Functions in the form of tasks divided into line, staff, and functional functions. This relationship consists of responsibility and authority. Streamlining the structure can be horizontal or vertical.

3). The directing function.

In the management of Islamic education, the function of directing becomes a guiding process using religious principles to colleagues. So that the person wants to carry out his duties seriously and enthusiastically with a very deep sincerity.

For example, this can happen when a boss provides assistance in the form of guidance to members who experience difficulties at work. With these directions can create a more pleasant working atmosphere.

4). Supervision function (controlling).

Ramayulis (2008: 274) explains, supervision in Islamic education has characteristics such as material and spiritual supervision. This means monitoring is not only the manager, but also Allah SWT.

In addition, the method used is a humane method that upholds human dignity. The supervisory function also evaluates and supervises everything that is done by members of the organization so that it can be directed to the right path according to the goals.

Then, in the implementation of education management, basically there are several elements that must be considered in its operations, namely the human element (personal), money (financing), methods, materials, machines and markets.

A simple explanation of the elements above is, the human element in management studies is psychological in nature which involves attitudes, habits and tendencies in dealing with the work environment. So in the management of elements of work climate is part of the study because it affects the performance of groups or organizations.

Then the element of money or financing as one of the elements of management is as an operational driver for actors or executors who need work wages and other financing either in the form of currency or cash, as well as demand deposits (cheques, or other forms of electronic money).

d). Islamic education

In general, the concept of Islamic education refers to the meaning and origin of the words that make up the word education itself in relation to Islamic teachings. There are three terms commonly used in Islamic education, namely al-Tarbiyat, al-Ta'lim and al-Ta'dib. Tarbiyat means nurturing, raising and educating which includes the meaning of teaching. Departing from this understanding, tarbiyah is defined as a process of guiding human potential to the maximum so that it can become a provision in facing life and the future. (Muh. Wasith, 2018).

Furthermore, it is said that education is a conscious and planned effort to create a learning climate and learning process so that students actively develop their potential so that they have religious spiritual strength, self-control, personality, intelligence, noble character, and the skills needed for themselves, society, nation and society. Country. While the purpose of education itself is to humanize humans so that all students can achieve what is implied in the meaning above. As well as efforts to direct and change ways of thinking, perspectives and ways of behaving in accordance with Islamic teachings. (Niken, 2019).

Another meaning is also almost the same as before saying, Islamic Education is education that aims to form a complete Muslim person, develop all human potential, both in the form of physical (physical) and spiritual (psychic), foster harmonious relationships each person with Allah, human and the universe. Thus, Islamic education seeks to fully develop the individual, so it is only natural to be able to understand the nature of Islamic education based on an understanding of the human concept according to Islam. (Saad, 2015).

From some of the concepts and understandings described above, it can be concluded that Islamic education is a conscious effort made to develop the potential of students to have spiritual strength, self-control, personality, intelligence and noble character. Making humans who have noble characteristics by always holding on to Islamic religious values.

e). Types of Islamic Education Institutions

Islamic education institutions are a system that supports ongoing education in order to achieve educational goals. The existence of institutions in society, in the framework of the process of empowering the people, is a task in which the cultural and educative responsibilities towards students and their community are getting heavier. The responsibility of these educational institutions in all their types according to the Islamic view is closely related to efforts to succeed in the mission as a Muslim. (Ja'far, 2020)

What is meant by an Islamic educational institution is an institution or place where the educational process is carried out with the aim of changing a person's behavior towards a better direction through interaction with the surrounding environment. And these changes are of course based on Islamic values. (Hawi, 2017).

From the above opinion, it can be said that Islamic educational institutions can be interpreted as something in the form of an agency or organization that aims to support ongoing education in order to succeed in the mission as a Muslim, which aims to change individual behavior for the better and shape them into individuals who can interact with their surroundings.

As for the types of Islamic educational institutions in terms of the person in charge, Islamic educational institutions are divided into 3 parts, namely:

1) Informal Islamic Education Institutions (Family)

In Islam, family is known as usrah and nasb. In line with the above understanding, family can also be obtained through breastfeeding and independence. The importance and primacy of the family as an Islamic educational institution is required in the Qur'an:

يَا أَيُّهَا الَّذِينَ آمَنُوا قُوا أَنْفُسَكُمْ وَأَهْلِيكُمْ نَارًا وَقُودُهَا النَّاسُ وَالْحِجَارَةُ عَلَيْهَا مَلَائِكَةٌ غِلَاظٌ شِدَادٌ لَا يَعْصُونَ اللَّهَ مَا أَمَرَهُمْ وَيَفْعَلُونَ مَا يُؤْمَرُونَ

It means :

“O you who believe, protect yourselves and your families from the fires of hell whose fuel is humans and stones; guardians of angels who are rough, harsh, and do not disobey Allah in what He commands them and always do what they are commanded. (Q.S. At-Tahrim: 6)

Reading the verses of the Qur'an above, it is not an exaggeration to say that Islamic education or more specifically the first and foremost educational institution for every Muslim individual is the family or in other terms primary education.

2) Formal Islamic Education Institutions (Schools/Madrasahs)

The definition of a formal Islamic educational institution is if the education is held in a certain place, regularly, systematically, has an extension and within a certain period of time, takes place from basic education to higher education, and is carried out based on predetermined official rules. As for the types and levels of formal Islamic education institutions in Indonesia, they are:

- a. Raudhatul Athfal or Busthanul Athfal, or another name according to the founding organization.
- b. Madrasah Ibtidaiyah (MI) or Islamic Elementary School (SDI).
- c. Madrasah Tsanawiyah (MTs), Islamic Middle School (SMPI), or other names that are at the same level as this education, such as Madrasah Mu'allimin Mu'allimat (MMA), or Madrasah Mu'allimin Upper (MMA).
- d. Tertiary Education Institutions, including Islamic Colleges (STAI), State Islamic Institutes (IAIN), State Islamic Universities (UIN), or similar institutions belonging to Islamic foundations or organizations, such as Colleges, Universities or private Institutes belonging to certain organizations or foundations .

To find out for sure the number of Formal Education Islamic Education institutions in all Provinces throughout Indonesia, public and private based on data from the Ministry of Religion of the Republic of Indonesia, namely: data on institutions registered at the Ministry of Religion of the Republic of Indonesia to date, formal Islamic Education institutions (madrastas) in 2019/2020 from the Raudatul Atfawal level to the public and private Madrasah Aliyah level there are 82,418 institutions, with details and distribution in each Province as shown in the following table :

STATISTICAL DATA OF ISLAMIC EDUCATION OF MADRASAH 2019/2020

#	^	Nama Provinsi	RA		MI		MTs		MA		Jumlah	
			Swasta	Negeri	Swasta	Negeri	Swasta	Negeri	Swasta	Negeri	Swasta	Total
1		Aceh	343	433	170	109	340	69	205	611	1.058	1.669
2		Bali	108	16	70	7	42	5	25	28	245	273
3		Bangka Belitung	51	12	19	11	37	5	22	28	129	157
4		Banten	1.412	20	1.047	30	1.040	19	401	69	3.900	3.969
5		Bengkulu	146	41	98	32	59	15	40	88	343	431
6		Di Yogyakarta	245	21	162	35	76	15	44	71	527	598
7		Dki Jakarta	1.021	22	457	42	204	22	71	86	1.753	1.839
8		Gorontalo	41	7	93	10	62	6	36	23	232	255
13		Kalimantan Barat	167	23	400	31	293	19	137	73	997	1.070
14		Kalimantan Selatan	340	143	390	84	261	42	118	269	1.109	1.378
15		Kalimantan Tengah	162	36	244	22	142	14	69	72	617	689
16		Kalimantan Timur	124	10	120	17	144	11	53	38	441	479
17		Kalimantan Utara	27	1	27	3	19	2	13	6	86	92
18		Kepulauan Riau	179	10	56	9	56	7	32	26	323	349
19		Lampung	656	52	733	24	679	18	302	94	2.370	2.464
20		Maluku	71	21	120	16	119	10	55	47	365	412
21		Maluku Utara	67	23	104	19	140	11	72	53	383	436
22		Nusa Tenggara Barat	617	26	823	28	837	19	528	73	2.805	2.878
23		Nusa Tenggara Timur	125	35	139	23	73	13	32	71	369	440
24		Papua	26	3	47	4	32	2	21	9	126	135
25		Papua Barat	55	7	41	4	27	5	14	16	137	153
26		Riau	503	19	439	34	585	21	293	74	1.820	1.894
27		Sulawesi Barat	147	6	167	6	178	5	102	17	594	611
28		Sulawesi Selatan	694	56	648	49	722	32	384	137	2.448	2.585

29	Sulawesi Tengah	124	21	187	29	255	16	150	66	716	782
30	Sulawesi Tenggara	215	19	152	46	185	17	112	82	664	746
31	Sulawesi Utara	167	12	80	18	57	5	39	35	343	378
32	Sumatera Barat	426	62	86	112	304	48	175	222	991	1.213
33	Sumatera Selatan	480	37	498	36	456	22	238	95	1.672	1.767
34	Sumatera Utara	1.964	127	846	60	1.020	43	476	230	4.306	4.536
Total		29.842	1.709	23.884	1.499	16.677	802	8.005	4.010	78.408	82.418

Source; <https://emispendis.kemenag.go.id/>

3) Non-Formal Islamic Education Institutions (Society)

Non-formal Islamic educational institutions are mechanisms that provide opportunities for everyone to enrich science and technology through lifelong learning. The emergence of the community-based education paradigm was triggered by the large current of modernization which required the creation of democratization in all dimensions of human life, including in the field of education. Like it or not, education must be managed in a decentralized manner by providing the widest possible space for community participation, and continuing to manage the needs of Islamic educational institutions in society which are based on, driven and developed by the spirit of Islam (Al-Qur'an and As Sunnah).

Islamic educational institutions that can be grouped into types of non-formal education are:

- a. Mosque, Mushalla, Langgar, surau, etc.
 - b. Madrasah Diniyah that do not follow official regulations
 - c. Taklim Assembly, Al-Qur'an Education Park, etc.
 - d. Islamic courses.
 - e. Spiritual formation agency.
 - f. Religious consulting bodies.
 - g. Musabaqah Tilawatil Al-Qur'an
- f). Problems of Islamic Education Institutions

In the case of Indonesia, the problem of Islamic education is still dominated by internal factors of Muslims and external factors of government policies. External factors related to politics and economics. Even though there is now the 1989/2003 National Education System Law which guarantees educational equality, both in the form of national education and in the form of religious education. However, on the implementation side in the field there are still gaps in various sectors. (Dadang Kahmad, 2021).

Furthermore, the challenges of this educational institution according to Cece Wijaya (1999; 38) in Akmal Hawi, can be described as changes in society in the social, economic, cultural, scientific and technological fields that have an impact on the ongoing education system. (Hawi, 2017).

One of the problems or constraints of educational institutions that focus on the field of human resource development is how the institution can anticipate people who have an evaluation orientation in terms of quality. Educational institutions are required to be able to develop and improve quality on an ongoing basis. Improving the quality of personnel, improving services to students and the community, and building harmonious relationships with institutions that have an interest directly or indirectly with education both private and public. Managing educational institutions in an integrated manner is an effort to empower educational resources by implementing an integrated quality management system (Total Quality Management). If TQM is implemented optimally and is directed, it will be able to overcome managerial problems that often arise in Islamic education. (Arifiah, 2021)

From the several opinions above, we can conclude that the problems or problems of Islamic Education institutions are internal and external factors, which also involve social, economic and cultural factors. And the problems in the management of Islamic Education institutions are about the quality of staff and service to students, as well as managerial problems of the institutional management system.

These problems must be anticipated for readiness in the Industrial Age 4.0 because if an Islamic Education institution is still struggling with its own internal problems while external challenges or problems are increasingly complex, it will have a negative impact on the educational institution itself. Because not only will they be left behind, but even more dangerous, they may be left behind.

B. Industrial Revolution 4.0

a). History of the Industrial Revolution 4.0.

The term "Industrie 4.0" originates from a project within the German government's advanced technology strategy that prioritizes factory computerization. The term "Industrie 4.0" was revived at the 2011 Hannover Fair. In October 2012, the Working Group on Industry 4.0 presented recommendations for implementing Industry 4.0 to the German federal government. Members of the Industry 4.0 working group are recognized as the founding fathers and pioneers of Industry 4.0. And the term appears in the final report of Working Group Industry 4.0 presented at the Hannover Fair on April 8 2013. https://id.wikipedia.org/wiki/Industri_4.0

The industrial revolution 4.0 is also commonly referred to as the digital revolution. All fields used at this time implement an automation system because it requires a system on a computer. One example of technological advances that occurred in the era of the industrial revolution 4.0 is the existence of artificial intelligence (Artificien Intelligent) where robots are created to almost resemble humans (Sri Anggraeni, 2018).

Industrial Revolution 4.0, or commonly called Industry 4.0, also known as the digital revolution, Industrial Revolution 4.0 is a change that has occurred in the industrial sector and has occurred for the fourth time. This industrial revolution is dominated by the exchange of data and the role of humans becomes less. This is because in the industrial revolution 4.0 all jobs have been taken over by several machines, computers and other sophisticated equipment.

The birth of the industrial revolution will also have an impact, especially in the industrial sector. At present, we have entered the industrial revolution 4.0, where human power has been largely replaced by machines, artificial intelligence equipment and sophisticated technology. <https://haloedukasi.com/revolution-industry-4-0>

b). Impact of the Industrial Revolution 4.0. against life.

Unknowingly, the industrial revolution that we are currently facing does not only affect what has been done, but also shapes identity. Starting from affecting privacy, consumption patterns, time spent working and relaxing, to how to maintain relationships with other people. (<https://www.zenius.net/blog/pengaruh-industrial-revolution-in-life>).

It is a law of nature that an event or event has an impact on human life and the natural surroundings. Broadly speaking, the impact of the Industrial Revolution 4.0 on human life has two sides, the positive impact and of course the negative impact.

1. Positive impact

1). Efficiency and Productivity increase

The first advantage that we will get from the industrial revolution 4.0 is increased productivity efficiency in the production process. We can produce the maximum number of goods or in bulk with fewer costs and resources because we are assisted by adequate technology.

2). Cheaper Costs

The use of automatic machine technology can reduce production costs quite a lot, such as employee salaries, meal allowances, and so on. The use of physical information systems enables and facilitates goods processing companies to produce quickly and safely rather than using human labor.

3). Better Risk Management

Manufacturing company risk management can also be better. Because with reduced risks such as human error which can slow down the production process. The use of artificial intelligence is one of the ways a company can reduce risks that can hinder the production process.

4). Faster Problem Identification and Troubleshooting

The next advantage is to take advantage of the advantages of digital information technology in industrial companies to be able to control and manage data and information in an actual and fast manner. The impact on the company can quickly and accurately overcome the problems that occur, so that they do not cause big problems and can disrupt company operations (Ja'far, 2020).

2. Negative impact

1). Vulnerable to cyber attacks

The Industrial Revolution 4.0 is closely related to the world of technology and one of the things that we can see is starting to be discovered now is IoT (internet of things). IoT products remove physical boundaries and are in cyberspace, between production processes and network systems, therefore they are very vulnerable to cyber attacks if they are not guarded by a solid and tough security system.

2). Investment in human resources is not cheap

Companies that want to use automation systems as well as high technology must of course have human resources who have the ability and skills to be able to use these sophisticated facilities.

3). Impact of technology on the environment

As long as humans use machines to work, energy needs will remain and until now there is no sufficient energy source to be used for production activities on a larger scale other than using fossil fuels. You certainly know the use of fossil fuels is not a friendly thing for the environment.

4). Impact on HR

Social media can carry fake news, it can also result in shifts in business models that make certain types of jobs no longer needed. Besides impact on environmental problems, the industrial revolution will also leave problems related to the loss of social humanities values. (Ja'far, 2020)

The two sides of the impact of the industrial revolution 4.0 depend on how we react, whether to be active or passive. If you react actively and anticipatorily, of course you can take advantage of this condition for the benefit and good. On the other hand, if you react passively, you will be left behind and maybe even abandoned, because others have taken advantage of existing technological sophistication.

c). The impact of the Industrial Revolution 4.0 on Islamic Education Institutions

The Industrial Revolution 4.0 is characterized by digital-based performance with artificial intelligence (AI) by replacing some human roles with robotic technology and other intelligent machines. This has a direct impact on the world of education. The era of the industrial revolution 4.0 also changed the perspective on education. The changes made are not just a way of teaching, but far more essential, namely a change in perspective towards the concept of education itself.

Education in the era of the industrial revolution 4.0 requires a change in the way of learning, thinking patterns and ways of acting of students and the way of teaching teachers which used to be traditionally paper based to information and communication technology (ICT) based or loss paper. The presence of ICT in the world of education also allows the creation of effective and enjoyable learning. To be able to realize effective and enjoyable learning, it is necessary to understand what is meant by ICT itself. (Technowijoyo, 2022).

The condition of Islamic Education Institutions facing the impact of the 4.0 Industrial Revolution certainly demands the hard work of all the components involved in it. The concept of organizing the educational process which has so far been manual-based will certainly be far behind. So, of course, you have to adjust to changing the old work system, with a new internet-based

digital work system in all its service processes so you don't get left behind or even leave the community behind.

C. Challenges and Opportunities for Islamic Education Institutions in the Industrial Revolution Era 4.0.

a). Challenges of Islamic Education Institutions in the Industrial Revolution Era 4.0.

The Impact of the Industrial Revolution 4.0 on Education in Indonesia In this modern era, information and technology has had a very massive impact on school activities. New information and knowledge is distributed easily and is accessible to anyone who needs it. Education experienced a very great disruption. The role of the teacher who has been the only provider of knowledge has more or less shifted away from it. In the future, the role and presence of the teacher in the classroom will be increasingly challenging and require very high creativity (Hasrul et al., 2019).

The era of the industrial revolution 4.0 is a tough challenge for education in any country in the world today. Quoting Jack Ma at the 2018 World Economic Forum annual meeting, education is the biggest challenge of this century. Because if you don't change the way teachers educate and teach their students, in the next 30 years we will experience great difficulties. Education and learning that are loaded with knowledge, while setting aside In line with national education, Islamic education in Indonesia also suffered a similar fate. Islamic education as a center in shaping the morals and morals of the younger generation is currently experiencing a setback. (Emalia & Farida, 2019).

From the description and explanation above, the challenges of Islamic Education and especially Islamic Education institutions in Indonesia in the Era of the Industrial Revolution 4.0 or Industry 4.0. These include, among others: the matter of teacher creativity in carrying out learning inside and outside the classroom, equal distribution of management quality and the decline of Islamic Education institutions as centers for the formation of morals and morals of the younger generation.

These challenges must be addressed wisely and carefully, because the problem is very complex. The development of information technology is very fast if it is not accompanied by existing educational Human Resource skills, it will further exacerbate these problems. So it is necessary to organize the management of professional Islamic education institutions based on modern IT technology.

To answer all of these, managers of Islamic Education institutions must take anticipatory steps, including:

1. Improving the competence of teacher skills in the ability to carry out IT-based learning inside and outside the classroom.
2. Improve the ability and skills of educational staff in management capabilities by creating an IT-based network system to increase speed, accuracy and ease of service.
3. Strengthening the content of the curriculum with a character-based learning orientation to create a young generation who is moral and has noble character.

a) *Opportunities and Strategies for Islamic Education Institutions in the Industrial Revolution Era 4.0.*

Effects of the Industrial Revolution 4.0. for Islamic Education institutions if they are good at capturing existing situations or circumstances, then they can utilize and control them. This can be a valuable opportunity. As said by Faiz Rafdhi (2018), Seeing the fact that IT and the internet are not only complementary (secondary) tools for humans but have become part of (primary) human life, and their urgency for Islamic education, this paper needs to explain the opportunities and the challenge, especially for managers of educational institutions, is how school/madrasah principals or Islamic boarding school leaders can navigate this change, by integrating digital and physical technology in all areas of business, production, mobility and communication, the fourth industrial revolution represents a broad and comprehensive shift that must be handled comprehensively if schools/madrasahs/Islamic boarding schools are to develop. There are three things that must be observed in facing industry 4.0

1. Society

Society is an important element in change. Communities, especially in big cities, are among the most enjoying this change. Urban communities are the largest users of application-based online transportation services, urban communities are also the largest accessors of information scattered in various internet-based media and social media. Urban communities are the largest users of internet services compared to rural communities . Without society, technology is meaningless. This is a challenge as well as an opportunity for Islamic educational institutions. Society can become a new "market" as learning citizens who are not limited by age, space and time.

2. Strategy

It is time for the managers of Islamic education institutions to open themselves up to this technology. There are several steps that managers can take, including:

- 1) Preparing talent sources from various tertiary institutions to support the development of information technology or the internet in the learning process, both as providers of learning content and as institutional governance.
- 2) Enlarge the "market" or underserved and affordable markets through the development of e-learning and social media management that is friendly, inspiring and educating.
- 3) Offer predictive tools to help improve processes and reduce risk, especially in decision support, as stated by Marquardt regarding the electronic performance support system technology subsystem
- 4) Building networks with the government, internet service providers and other private sectors.

3. Technology

The industrial revolution 4.0 guarantees integrated digital and physical technology. This approach can improve an organization's operations, productivity, growth, and innovation. So far, it seems as if the managers of educational institutions have taken advantage of this technology, unfortunately they are actually using this digital technology to do the same things they have always done before, only to make things faster and better. In fact, many researchers find that true industry 4.0 organizations use it to create new business models. It is fitting that Islamic educational institutions that expand the use of Industry 4.0 technology to include suppliers, customers, workers, partners and other parties in the ecosystem, in order to find greater benefits for the development of more transformative Islamic Education institutions. (<https://klasikmedia.com/revolution-industrial-4-0-opportunities-and-challenges-for-Islamic-education/>).

From the above opinion, it can be assumed that the ease of accessing IT technology through an easily accessible internet network in conditions anytime and anywhere, while there is still a signal with a cellphone, gadget or laptop can be an opportunity to create an application system for service management activities in education, especially in educational institutions. Islam to provide fast, effective and easy services to students or guardians of students and those with an interest in the institution concerned. This IT technology capital is also a means to provide information to the wider community to convey learning messages. And most importantly, the opportunity to develop strategies for implementing the learning process

through the preparation of online lesson plans can also be conveyed effectively to all students via the cellphones they each have.

Conclusion

The impact of the Industrial Revolution 4.0 on the world of education, including Islamic Education, which of course is also an Islamic Education institution within it as an organizer, needs to respond wisely and critically, because there are two sides of its influence on the world of Islamic Education. The massive influence of the internet on society, the ease of making learning strategies and the ease of using internet technology for the learning process are opportunities for the management of Islamic Education institutions. Meanwhile, the disparity in quality between regions, public and private, teachers' competence in mastering science and technology is still low, and educational staff are still low in mastering applications to improve services in institutions, which are serious problems in Islamic education institutions.

So a revolutionary, responsive and visionary way of thinking is needed from all parties to create Islamic educational institutions that can respond to the influence of the Industrial Revolution 4.0 and the current era of disruption.

The old paradigm of thinking that tends to run institutions without good planning also has an impact that is less anticipatory in responding to environmental conditions that occur, both internal and external influences. The impact that is very fast and disruptive is due to the influence of the Industrial Revolution 4.0 or Industry 4.0 which is marked by the IT-based digital technology revolution with artificial intelligence (AI). Where robots and the internet are starting to replace human labor.

The management function in education is very strategic, including in Islamic Education, where one of its functions is to organize institutions. The most important management functions are planning, organizing, directing and controlling. The three management functions in their application are not optimal in the field. We can see from this that State and Private Islamic Education institutions are very weak in institutional management arrangements.

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