

An Analysis Of The Readiness Of Lecturers And Students Of Al-Qolam Islamic Institute To Challenge The Industrial Revolution 4.0

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ABSTRACT

The purpose of this study was to determine the application of the industrial revolution 4.0 carried out in teaching and learning activities and to find out what challenges were faced by students of the Al-Qolam Islamic Institute of Malang. This research uses descriptive qualitative research. The subjects of this study were 7 lecturers and 12 students of the Tarbiyah Faculty of IAI Al-Qolam Malang. The data was taken from a questionnaire consisting of 8 questions with 2 choices, namely no and yes to determine the readiness of lecturers and students in facing the challenges of the industrial revolution 4.0. Based on the results of the study, it can be said that lecturers have a positive view of lecturers and students in facing the challenges of industry 4.0 at the Al-Qolam Islamic Institute. However, there are still obstacles and challenges faced by lecturers and students in learning in the era of the industrial revolution 4.0 at the Al-Qolam Islamic Institute.

Keywords: Industrial Revolution 4.0, Readiness, Obstacles, Challenges

INTRODUCTION

In this era, the development of technology has experienced quite significant developments from time to time.¹ Currently, technological development has reached the fourth generation rank where previous technology has been integrated quite well with other technologies in the network, which we usually know as the era of the industrial revolution 4.0. Where the beginning of the industrial revolution 4.0 began to emerge around the 2010s through intelligence engineering, and the internet of things as the basis for machine movement and connectivity.² Where at this time science and technology are developing rapidly, so that learning occurs. This can be seen from the rise of digital systems in the world of learning. The progress of the nation can be supported by the growth of a learning system that can affect human energy sources that are faster and ready to change. So learning and technological progress have an important and equal position in the quality of human energy resources.

The progress of the development of the world of technology and information is a sign of the readiness of the world of education in entering the industrial revolution 4.0 era. Facing the industrial revolution 4.0 that is already in sight, it is believed that it can improve the quality of life of human resources in the world due to the surge in changing times with information and communication technology.³ Technological developments have taken an important role in implementing the 4.0 industrial revolution, it can be seen that the 4.0 industrial revolution inspired the world of education in the era of technological advancement of the industrial revolution 4.0.

¹ Pimpin Meindra, Hari Wahyono, *“A Critical Analysis of Educational Technology in The Era of Industrial Revolution 4.0”* Journal, (Malang: Universitas Negeri Malang, 2020) Pg 2.

² BanuPrasetyo and Umi Trisyanti, *“Revolusi Industri 4.0 Dan Tantangan Perubahan Sosial”* Journal, (Surabaya: Institute Teknologi Sepuluh November, 2020) Pg 22.

³ R, Mursid and Erma Yulia, *“Pengembangan Pembelajaran Dalam Teknologi Pendidikan di Era RI 4.0”* Journal, (Medan: Universitas Negeri Medan, 2021) Pg 2.

Therefore, the world of education must adjust the process of teaching and learning activities with technological developments. Teaching and learning activities in the past focused on teachers (teacher centered learning), but now it has changed, namely by using learning methods that focus on students (student centered learning).

The current learning methods have changed along with the development of information technology.⁴ Information technology is currently very easily accessible to students. In the past, students obtained information from print and television media, but for now, the information is very easy to obtain by accessing it via the internet. Students when looking for information on the internet do not need a long time, only a few seconds the information can be obtained and can also be disseminated widely. Currently, the role of information technology through internet networks greatly contributes to the teaching and learning process, so it must be optimized and used as a medium for student learning to improve the quality of education.

In the world of educational technology, it is not just about learning media, but also includes learning media teachers, learning resources, education systems, and schools as institutions.⁵ The teacher is a facilitator in the teaching and learning process and plays an important role in the world of learning. According to Suryosubroto, that the task of a teacher is as a professional educator with the main task of educating, teaching, guiding, directing, training, assessing, and evaluating students in the teaching and learning process. Including pedagogical tasks and administrative tasks.⁶ The pedagogical task is to be able to assist, guide, and direct students in learning. According to Suyono, convey that teaching is not just transferring knowledge from a

⁴ Achmad Saiful Ulum, Suhartono, and Evi Sistiyarini, “Pemanfaatan Teknologi Pembelajaran Di Era Revolusi Industri 4.0” Journal, (Surabaya: Sekolah Tinggi Ilmu Ekonomi Perbanas, 2020) Pg 1334.

⁵ Pimpin Meindra, Hari Wahyono, “A Critical Analysis of Educational Technology in The Era of Industrial Revolution 4.0” Journal, (Malang: Universitas Negeri Malang, 2020) Pg 3.

⁶ Suryosubroto, “Proses Belajar Mengajar di Sekolah” Book, (Jakarta: PT Bineka Cipta, 2009) Pg 48.

teacher to their students, it will However, it is hoped that it can help students to build their knowledge through activities related to real life.⁷

Educational technology is growing, especially in the era of industrial revolution 4.0, all components that are currently integrated through the use of in human life, it cannot be denied that human life cannot be separated from the use of technology. According to Hudson, Life-based learning/atmosphere today is a vital component in problem solving problems in everyday life, relevant to the needs and interests of citizens, and able to adapt to social changes and technological growth.⁸ In addition, the visible impact of The development of the world of technology in the field of education will also affect the developments in the teaching and learning process. As has been explained by Hasibuan, one of the scientific experts, that information and the development of communication technology allows teachers to use learning media that supports to be used in the learning process of learning better and interesting.⁹

Students who act as students in the classroom and are in direct contact with students The learning process must be considered seriously. During the process in class, students are the ones who feel whether the learning media used by the lecturer is good or not. Student's perspective on must also be considered, especially to produce appropriate learning media and relevant to the needs of students to achieve learning objectives.

The college or school is a place or institution that provides opportunities for students to learn and gain knowledge. Thus, universities must be able to provide a better process and provide

⁷ Pimpin Meindra, Hari Wahyono, "*A Critical Analysis of Educational Technology in The Era of Industrial Revolution 4.0*" Journal, (Malang: Universitas Negeri Malang, 2020) Pg 6.

⁸ Hudson, S., "*Challenges for Environmental Education*" Issues and Ideas for the 21 st Century, (Bioscience, 51(4)) Pg 283-288.

⁹ Hasibuan N, "*Pengembangan Pendidikan Islam dan Implikasi Teknologi Pendidikan*" Book, (Jakarta: Fitrah 1 (5), 2015) Pg 206.

adequate facilities in the learning process learning to improve the quality of students. To provide a better learning process, universities are able to offer facilities that are in accordance with the learning process. According to Abdullah, that the facilities related to the learning process provided by the school are significantly the effect on the effectiveness of the teaching and learning process is 96.6 percent as a result. In addition, educational institutions have the authority and capacity to design learning model (which is still based on the curriculum implemented by the center government).¹⁰

This was acknowledged by the United Nations Education, Scientific and Cultural Organization (UNESCO) on Thursday (5/3), that the Covid-19 virus outbreak that entered Indonesia had quite an impact on the education sector. Nearly 300 million students disrupt their school activities worldwide and threaten their future education rights. The day before, 13 countries, including China, Italy and Japan, had closed schools across the country in a bid to stop the spread of the virus. It affects almost 290 million students as quoted in Deli & Allo, 2020.¹¹

Closing schools and learning facilities are an option for many countries, both at the elementary school level or at the university level throughout Indonesia, especially in the area of East Java Province (Malang) which is a city of education. At every level of learning institutions in Indonesia, especially large academies, feel as on of the institutions that are affected by spread of the unfavorable effects of covid-19 caused by students being required to study online from home because of the cessation of education directly face to face in class to break the chain and be exposed to the corona virus.

¹⁰ M. Abdullah, “*Pengaruh Fasilitas Sekolah Terhadap dan Motivasi Guru Terhadap Efektivitas Proses Mengajar di Madrasah Aliyah DDI Bontang*” Journal, (Universitas Muhammadiyah Metro Bontang, 2018)

¹¹ Sujarwo, Sukmawati, Akhiruddin, Ridwan, and Suharti Siradjuddin, “*An Analysis of University Students Perspective on Online Learning in the Midst of Covid-19 Pandemic*” Journal, (Makasar: Universitas Megarezky Jakarta, 2020) Pg 126.

Moreover, they are used to designing project-based educational activities, when the Covid-19 outbreak forced all schools to close and students study from home, they almost did not experience adjustment problems. Not very good, however, education is not established for some students, they hardly faced adjustment issue. At worst, as we know, learning does not happen to just a few students. Educators such as lecturers are also affected by this case. Their lecturers lack the resources to interact in online learning activities and many students do not have access to the internet and supporting media such as the necessary gadgets and laptops.¹² Based on the above statement, the lack of maximum human resources and teaching staff will have an impact on the ineffectiveness of a good teaching and learning process, especially if there are problems with poor internet connections and the lack of learning support tools that students do not have are also obstacles. the main factor in this.

According to UNICEF, that as of August 2020, there were 15 billion children school closures due to the Covid-19 pandemic and must carry out learning at home. In that number there are about 45 million students in Indonesia, accounting for 3% of the total number of affected students worldwide impact.¹³

This condition is quite alarming considering that students and lecturers cannot carry out face-to-face learning in class in an unknown time until when this pandemic can be resolved or ended. Online learning is still considered a breakthrough or a new paradigm in teaching and learning activities in various educational institutions.

Because the online learning system strives for students to study at home without having to come to school. Learning is done

¹² Lie, A. (2020). COVID-19 disruption and the widening digital divide. <https://www.thejakartapost.com/academia/2020/05/02/covid-19-disruption-and-the-widening-digital-divide.html> acces on 14 agustus 2021

¹³ N. F. Azzahra, “*Mengkaji Hambatan Pembelajaran Jarak Jauh di Indonesia di Masa Pandemi Covid-19*” (CIPS. Jakarta: Center for Indonesian Policy Studies, 2020)

with an application-based system that can be done remotely. Learning activities are no longer carried out face-to-face, but virtual so that it seems more practical and easy to do in the midst of a pandemic like today.

Online learning itself allows students and lecturers to apply a learning system from home or anywhere according to an agreement between students and lecturers, besides this learning only requires an internet connection so there is no need to face to face directly.

Although many already know the sophistication of the world of educational technology in this era of the industrial revolution 4.0, the application of the online learning implementation system is not as easy as imagined. However, there are various obstacles faced by students and lecturers during the process of implementing this online learning system.

Such as changes in the new learning process which can indirectly affect students' understanding of learning, both in theory and practice, then there are various obstacles such as lack of focus during the learning process.

In its development the online learning system also causes communication and relationships between students and lecturers to experience problems, and poor internet connections when using online learning applications such as zoom meetings, google meet and other applications, sometimes also experience internet network disturbances which make it difficult to digest. the material delivered by the teaching lecturer, thus making the absorption of knowledge and the learning process less than optimal.

In the process of implementing the online learning system in the 4.0 era, several courses in addition to providing convenience, there are also obstacles experienced by lecturers and students. Because the distance lecture system requires the learning process to be carried out online or via online which requires a stable internet network and is supported by adequate facilities. Therefore, several teaching staff are required to provide effective lectures and also in accordance with the facilities owned by students.

Therefore, to catch up with our country's educational lag in the industrial revolution 4.0, the government must be able to provide adequate facilities for all educational institutions or institutions evenly throughout Indonesia. And also as the main foundation in the world of education, not only facilities, but educators must also be able to update competencies in the face of the 4.0 education era. If we see that students who are being faced by educators in the 4.0 era now are students from the millennial generation who are very familiar with the digital world. Students at this time are familiar with the flow of information and industrial technology 4.0, thus showing that school graduate products that have received the "PASS" label must be able to answer all industrial challenges in life in this country. Seeing these challenges, educators are required to be able to improve competence in dealing with millennial generation students.

Therefore, an educator does not stop only on the ability to apply information technology in the teaching and learning process, but there are six competencies that are expected to be possessed by 4.0 teachers and lecturers, namely: 1) Critical Thinking and Problem solving. 2) Communication and collaborative skill. 3) Creativity and innovative skill. 4) Information and communication technology literacy. 5) Contextual learning skill. 6) Information and media literacy.

Institutional challenges in the era of the industrial revolution 4.0 are only related to efforts preparing graduates with various skills above. No less important is to prepare resources, human resources, especially lecturers. Generational differences between lecturers and students are assessed as a factor major cause of educational failure. Why is that? A lecturer who teaches in college the majority of generation X, and Y have different characteristics from the current students mostly inhabited by generation Z. Generation Z attached to digital tools is not compatible with the method learning offered by the lecturer. The use of conventional methods in learning to Generation Z

is something that is not interesting. That gap or difference is the problem the single biggest problem facing the campus world today.

Thus, there is a need for continuous lecturer competency development throughout the university campus to be able to educate students who are ready to compete in the world of work after graduating from campus and create quality graduates. This development aims so that the quality of learning and university graduates is in accordance with the demands of the world of work in the era of the industrial revolution 4.0.

Institute of Islamic Religion Al-Qolam Malang, one of the universities in Malang Regency which has begun to try to implement an information technology-based learning system in facing the challenges of the industrial revolution 4.0 technology world. At the beginning of the implementation of the information technology-based teaching and learning system, this pesantren-based university was quite difficult to implement, even though the campus and curriculum had been declared ready to face the challenges of the industrial revolution 4.0, but our human resources must also be considered. As we know, the majority of students studying at this campus are students who live in Islamic boarding schools.

And based on the results of observations and interviews with some lecturers and students at the Al-Qolam Islamic Institute, actually the campus and its human resources are not really ready to face the challenges of the industrial revolution 4.0, said Muhammad Masykur Izzy Baiquni as the dean of the tarbiyah faculty. Not really ready does not mean that the campus does not just stand still, but the dictionary is also trying to catch up with this increasingly rapid technological development, for example the campus and lecturers are working on an active literacy, culture for lecturers and students, establishing work the same as campuses that have implemented the 4.0 revolution and the campus itself is currently also preparing the suitability of the independent campus curriculum.

Like during the pandemic, the institution also provides socialization to lecturers regarding effective online learning systems to be applied in

the teaching and learning process on campus, not only that, the institution also seeks to provide facilities that support learning for students such as language labs, SIAKAD, payments via virtual and digital library. said S. Syeh Assegaf as a lecturer in Islamic religious education.

And from the results of interviews that the researchers conducted with 3 students from different majors, as said by Luluk Lailatul, a student from the 5th semester of English study program, that, I think students at the Al-Qolam campus are still having trouble keeping up with the development of information technology-based learning in the 4.0 era. Hilda Qotrunnada who is also a student from the 5th semester of English study program also added that, "although the campus has made efforts to provide adequate facilities, the students themselves are still not ready for the challenges of the industrial revolution 4.0, especially since the Alqolam campus is a campus where the majority of students are students. A santri who lives in Islamic boarding schools, with the lack of facilities such as electronics that can reach the latest information and internet networks" it is not only the opinion of these two students that confirms their unpreparedness as students. Syahrul Kirom as student from the 5th semester Indonesian language study program, also said that, although institutions and lecturers were quite ready to face the 4.0 challenge, most students still did not know the updated information related to the development of the world of technology in this growing world of education.

The purpose of this study to find out the application of the 4.0 industrial revolution carried out in teaching and learning activities and to find out what challenges are faced by lecturers and students in the teaching and learning process in the era of the industrial revolution 4.0 at the Al-Qolam Institute of Islamic Religion Malang. The research problem of this study are How far is the implementation of the industrial revolution 4.0 in the teaching and learning process at the Al-Qolam Islamic Institute of Malang. And What are the challenges faced by lecturers and students of Al-Qolam Islamic Institute of Malang.

METHODOLOGY

The study uses qualitative descriptive research. The subject of this research was 7 lecturers and 12 students Tarbiyah Fakultas of IAI Al-Qolam Malang. Which is a study conducted to obtain an overview by collecting data, looking for facts, then explaining and analyzing the data by compiling and collecting data. The purpose of this study is to determine the application of the industrial revolution 4.0 carried out in teaching and learning activities and to find out what challenges are faced by lecturers and students at the Al-Qolam Islamic Institute Malang.

The research instrument is a questionnaire obtained with Google Form. The questionnaire was prepared by the researcher with reference to the existing research. The questionnaire was used to collect data from the sample to describe the readiness of lecturers and students in facing the challenges of the industrial revolution 4.0. The type of questionnaire used is called a closed questionnaire. Closed questionnaire is a questionnaire that contains questions and choices. Lecturers and students fill out a questionnaire based on the questions and choose the options given. The questionnaire consists of 8 questions.

In filling out the questionnaire, participants are expected to choose the most appropriate option from the 2 answer choices provided, which are given a choice of no and yes and others. In contrast to other questionnaires which usually consist of four or even more options.

Another instrument for collecting data is interviews. The researcher asked several questions which were developed from the questionnaire. The interview sheet consists of 5 questions. The interview session is needed to describe the perspective of student lecturers on the readiness of lecturers and students in facing the challenges of the industrial revolution 4.0 at the Al-Qolam Islamic Institute of Malang.

The author uses descriptive analysis in analyzing the data. Questionnaires were analyzed from lecturer and student sheets. The author describes the results of the questionnaire. The author calculates

the percentage of lecturer and student responses from the questionnaire. and researchers also presented in the form of a bar graph.

RESULT/FINDINGS

The data analysis are presented as follows:

1. The Readiness of Lecturers and Students of Al-Qolam Islamic Institute to Challenge The Industrial Revolution 4.0

Table 1.1 The readiness of lecturers to challenge the industrial revolution 4.0

No	Question	Negative Answer	Positive Answer	Total
1.	What do you know about the industrial revolution 4.0 ?	0 0%	7 100%	7
2.	Has the IAI Al-Qolam campus implemented the industrial revolution 4.0 in the teaching and learning system ?	1 14%	6 86%	7
3.	Are institutions, lecturers and students at IAI Al-Qolam ready to face the challenges of the industrial 4.0 ?	4 57%	3 43%	7
4.	What are the obstacles faced by lecturers and students in facing the challenges of the industrial 4.0 ?	0 0%	7 100%	7
5.	What efforts have been made by the campus in facing the	0 0%	7 100%	7

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	challenges of the industrial revolution 4.0 ?			
6.	Are the learning facilities and infrastructure adequate ?	0 0%	7 100%	7
7.	Have the qualifications of teaching lecturers met the appropriate teaching standards ?	2 29%	5 71%	7
8.	Is the curriculum applied by the institution appropriate ?	2 29%	5 71%	7

Based on the table above, the researcher found out the data as follow:

From the results of 8 questionnaires taken from 7 lecturers from The Tarbiyah Faculty, it turns out that it can be seen that the lecturers already know about the industrial revolution 4.0. Therefore, 100% of respondents answered yes and 0% answered no. It means that 100% or 7 lecturers know or understand the development of the world of information technology in the current era, especially regarding the industrial revolution 4.0.

From the second questionnaire, it can be seen that has the IAI Al-Qolam campus implemented the industrial revolution 4.0 in the teaching and learning process system ?, 14% of respondents answered no and 86% of respondents answered yes. Therefore, 86% of respondents who are lecturers at IAI Al-Qolam have implemented the industrial revolution 4.0 system in the teaching and learning system and as many as 14% of respondents have not implemented the industrial revolution 4.0 in the teaching and learning system at IAI Al-Qolam. This means that almost all lecturers who teach at IAI Al-Qolam have implemented the 4.0 industrial revolution in the lecture system.

From the third questionnaire, namely Are the institutions, lecturers and students at IAI Al-Qolam ready to face the challenges of the industrial revolution 4.0 ?, 57% of respondents

answered no and 47% of respondents answered yes. Therefore, as many as 57% of respondents think that institutions, lecturers and students at IAI Al-Qolam are still not ready to face the challenges of the industrial revolution 4.0 and as many as 43% of respondents think that institutions, lecturers and students at IAI Al-Qolam are ready to face the challenges of the industrial revolution. The challenges of the industrial revolution 4.0. This means that institutions, lecturers and students are not really ready to face the challenges of the industrial revolution 4.0.

From the results of the fourth questionnaire, it can be seen that, are there any obstacles faced by lecturers and students in facing the challenges of the industrial revolution 4.0 ?, 0% of respondents answered no, 100% of respondents answered yes. This means that all lecturers and students at IAI Al-Qolam experience many obstacles in facing the challenges of the industrial revolution 4.0. This means that lecturers and students at IAI Al-Qolam experience many obstacles in the teaching and learning process in this 4.0 era.

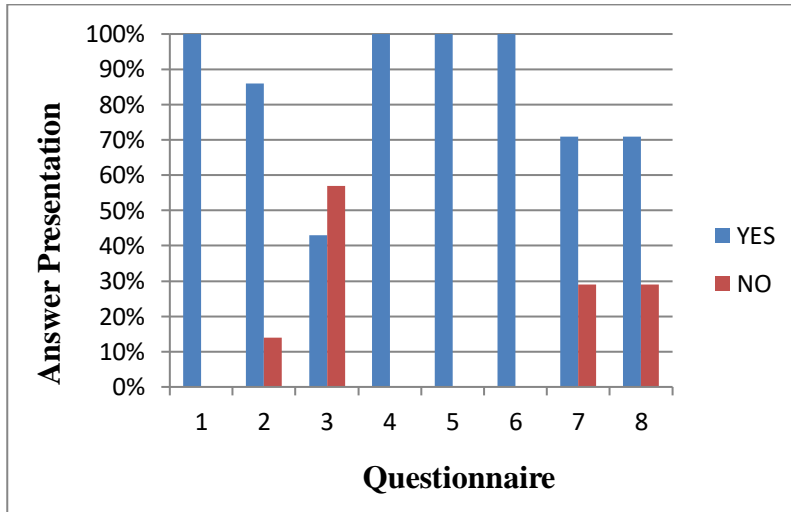
From the results of the fifth questionnaire, it can be seen. Are there any efforts that have been made by the campus in facing the challenges of the industrial revolution 4.0 ?, 0% of respondents answered no, 100% of respondents answered yes. This means that the campus itself has made efforts to face the challenges of the industrial revolution 4.0. This means that the campus itself has made several efforts to catch up with lecturers and students in this 4.0 era.

From the results of the sixth questionnaire, it can be seen. Are the learning facilities and infrastructure adequate? 0% of respondents answered no, 100% of respondents answered yes. This means that the learning facilities and infrastructure on the IAI Al-Qolam campus are maximized. This means that the lecturers who teach at the IAI Al-Qolam campus already feel that the learning facilities and infrastructure at the IAI Al-Qolam campus are sufficient to support the teaching and learning process.

From the results of the seventh questionnaire, it can be seen. Do lecturers' qualifications meet appropriate teaching standards? 29% of respondents answered no, 71% of respondents answered yes. This means that the qualifications of most of the teaching lecturers at the IAI Al-Qolam campus themselves still do not meet the appropriate teaching standards.

From the results of the eighth questionnaire, it can be seen. Is the curriculum implemented by the institution appropriate? 29% of respondents answered no, 71% of respondents answered yes. This means that most lecturers feel that the curriculum applied at the IAI Al-Qolam campus is appropriate.

The results of the percentage of answers to the questionnaire from the lecturer can be described in bar chart below:



Presentation image.1.1. Bar Chart Percentage of Lecturer Questionnaire Results.

The bar chart image above presents the percentage data from the results of the questionnaire answers that have been filled out by lecturers regarding the readiness of lecturers and students to face the challenges of the industrial revolution 4.0. The bar chart image above presents the percentage data from the results of the questionnaire answers that have been filled out by 7 lecturers as respondents regarding the readiness of lecturers and students to

face the challenges of the industrial revolution 4.0 consisting of eight questions.

Question number 1, answer yes = 100% and answer no = 0%.

Number 2, answer yes = 86% and answer no = 14%. Number 3, answer yes = 43% and answer no = 57%. Number 4, answer yes = 100% and answer no = 0% . Number 5, answer yes = 100% and answer no = 0%. Number 6, answer yes = 100% and answer no = 0%. Number 7, answer yes = 71% and answer no = 29%. Number 8, answer yes = 71% and answer no = 29%.

Table 2.2 The readiness of students to challenge the industrial revolution 4.0

No	Question	Negative Answer	Positive Answer	Total
1.	What do you know about the industrial revolution 4.0 ?	0 0%	12 100%	12
2.	Has the IAI Al-Qolam campus implemented the industrial revolution 4.0 in the teaching and learning system ?	0 0%	12 100%	12
3.	Are institutions, lecturers and students at IAI Al-Qolam ready to face the challenges of the industrial 4.0 ?	10 83%	2 17%	12
4.	What are the obstacles faced by lecturers and students in facing the challenges of the industrial 4.0 ?	0 0%	12 100%	12

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5.	What efforts have been made by the campus in fasing the challenges of the industrial revolution 4.0 ?	0 0%	12 100%	12
6.	Are the learning facilities and infrastructure adequate ?	9 75%	3 25%	12
7.	Have the qualifications of teaching lecturers met the appropriate teaching standards ?	2 17%	10 83%	12
8.	Is the curriculum applied by the institution appropriate ?	2 17%	10 83%	12

Based on the table above, the researcher found out the data as follow:

From the results of the first questionnaire taken from 12 students of the Tarbiyah Faculty consisting of Indonesian language education study programs, English language education, Mathematics Education, Islamic Religious Education, and Early Childhood Education, it can be seen that students already know about the industrial revolution. 4.0. Therefore, 100% of respondents answered yes and 0% answered no. This means that 100% of students know or understand the development of the world of information technology in the current era, especially regarding the industrial revolution 4.0.

From the second questionnaire, it can be seen whether the IAI Al-Qolam campus has implemented the 4.0 industrial revolution in the teaching and learning process system? 0% of respondents answered no and 100% of respondents answered yes. Therefore 12 respondents who are students at IAI Al-Qolam have given their opinion that the IAI Al-Qolam campus has implemented the industrial revolution 4.0 system in the teaching and learning system. This means that almost all students studying at IAI Al-

Qolam have felt that the industrial revolution 4.0 has been implemented in the lecture system they received.

From the third questionnaire, namely Are institutions, lecturers and students at IAI Al-Qolam ready to face the challenges of the industrial revolution 4.0 ?, 83% of respondents answered no and 17% of respondents answered yes. Therefore, as many as 83% of the 12 respondents think that institutions, lecturers and students at IAI Al-Qolam are not ready to face the challenges of the industrial revolution 4.0 and as many as 17% of respondents think that institutions, lecturers and students at IAI Al-Qolam are ready to face the challenges. industrial Revolution. This means that institutions, lecturers and students are still not really ready to face the challenges of the industrial revolution 4.0.

From the results of the fourth questionnaire, it can be seen whether there are obstacles faced by lecturers and students in facing the challenges of the industrial revolution 4.0?, 0% of respondents answered no, 100% of respondents answered yes. This means that students at IAI Al-Qolam experience many obstacles in facing the challenges of the industrial revolution 4.0. This means that students at IAI Al-Qolam still experience many obstacles and problems in the teaching and learning process in this 4.0 era.

From the results of the fifth questionnaire, it can be seen. Are there any efforts that have been made by the campus in facing the challenges of the industrial revolution 4.0?, 0% of respondents answered no, 100% of respondents answered yes. This means that students think that the campus has made efforts to face the challenges of the industrial revolution 4.0. This means that the campus itself has made various efforts to catch up both in the field and in the knowledge of its students in information in this 4.0 era.

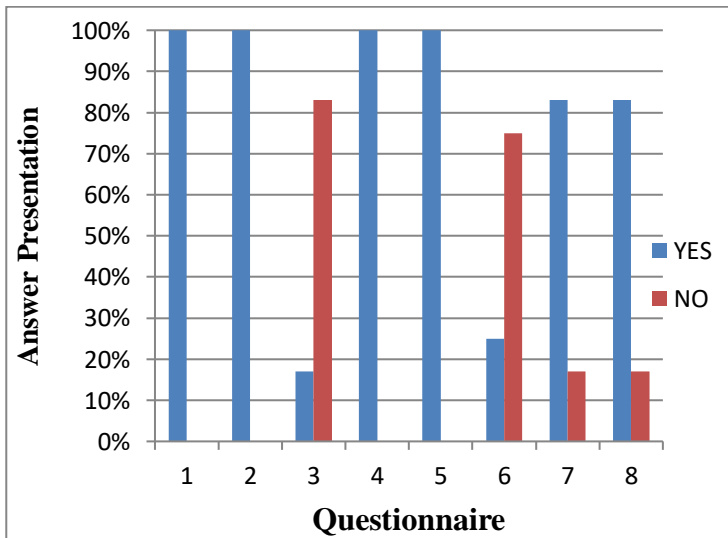
From the results of the sixth questionnaire, it can be seen. Are the learning facilities and infrastructure adequate? 75% of respondents answered no, 25% of respondents answered yes. This

means that the learning facilities at the IAI Al-Qolam campus are not adequate. This means that students are of the opinion that the existing learning facilities on the IAI Al-Qolam campus still do not meet the standards according to the needs of their students in the existing teaching and learning process.

From the results of the seventh questionnaire, it can be seen. Do lecturers' qualifications meet appropriate teaching standards? 17% of respondents answered no, 83% of respondents answered yes. This means that most students assume that the qualifications of teaching lecturers at the IAI Al-Qolam campus themselves have met the teaching standards in accordance with their respective fields.

From the results of the eighth questionnaire, it can be seen. Is the curriculum implemented by the institution appropriate? 17% of respondents answered no, 83% of respondents answered yes. This means that most of the 10 students think that the curriculum applied at the IAI Al-Qolam campus is in accordance with the university curriculum standards.

The results of the percentage of answers to the questionnaire from the student can be described in bar chart below:



Presentation image.1.2. Bar Chart Percentage of Student Questionnaire Results.

The bar chart image above presents the percentage data from the results of the questionnaire answers that have been filled out by students regarding the readiness of lecturers and students to face the challenges of the industrial revolution 4.0. The bar chart image above presents the percentage data from the results of the questionnaire answers that have been filled out by 12 students as respondents regarding the readiness of lecturers and students to face the challenges of the industrial revolution 4.0 consisting of eight questions.

Question number 1, answer Yes = 100% and answer No = 0%.

Number 2, answer Yes = 100% and answer No = 0%. Number 3, answer Yes = 17% and answer No = 83%. Number 4, answer Yes = 100% and answer No = 0% . Number 5, answer Yes = 100% and answer No = 0%. Number 6, answer Yes =25 % and answer No = 75%. Number 7, answer Yes = 83% and answer No = 17%.

Number 8, answer Yes = 83% and answer No = 17%.

2. Opinions Of Lecturers And Students Of The Industrial Revolution 4.0 In The Teaching And Learning Process At The IAI Al-Qolam Campus

To answer the problem of the study, the researcher conducted several interviews with lecturer and student. The analysis is as follows:

1. How far is the implementation of the industrial revolution 4.0 in the teaching and learning process at the Al-Qolam Islamic Institute of Malang?

The implementation of the industrial revolution 4.0 in the teaching and learning process itself has been carried out for quite a long time, both from the dictionary and from the lecturers. Although not all lecturers who teach have

implemented 4.0 in the learning process, most of it has been done, although not totally.

Based on the survey results, students said that so far the implementation of the industrial revolution 4.0 in the teaching and learning process on the IAI Al-Qolam campus has been quite rapid, which means that the learning system at this institution is arguably very good in implementing 4.0 with the development of educational technology that is increasingly rapidly.

2. Have IAI Al-Qolam lecturers implemented the industrial revolution 4.0 in the teaching and learning system ? Please explain and give an example!

Based on the survey results, lecturers who teach at IAI Al-Qolam have implemented the industrial revolution 4.0 in the teaching and learning process. For example, in the lecture process at the Indonesian language education study program itself, some of the lecturers of this study program have used the zoom meeting application in online lectures and students are also required to have the google classroom application to check assignments given by the lecturer.

Lecturers who teach at the IAI Al-Qolam campus have implemented the industrial revolution 4.0 in the lecture system that is being carried out. Actually, this policy has been implemented for quite a long time in the teaching and learning process, but it is undeniable that even though the industrial revolution 4.0 is quite helpful in a more flexible and practical teaching and learning process, at the IAI Al-Qolam campus itself this is still slowly being implemented as an example even though there is already access to online libraries and some courses that already use digital learning applications, but there are still some lecturers who prefer to use offline learning methods. this is because the majority of students at IAI Al-Qolam live in Islamic boarding schools.

Based on the survey results, students said that teaching lecturers at this institution had implemented the 4.0 concept in the teaching and learning process, it can be said that almost all lecturers have done that well. For example, when online classes are held, some lecturers use applications that can support online classes such as Google Meet, Zoom and Google Classroom and sometimes lecturers also provide recommendations for direction so that students use applications or the web that can support students doing assignments or looking for book materials. or journals on the internet.

3. Are the learning facilities and infrastructure adequate ? Please explain and give an example!

From the results of the interview, the lecturer said that so far the facilities provided by the campus to the lecturers to support the teaching and learning process were adequate. such as access to premium google meet, large capacity hard disk and E-Journals that make it easier for lecturers to publish student articles.

And from the results of interviews with students, students that the facilities provided by the campus are still inadequate, most students are still not satisfied with the facilities provided by the campus to support the teaching and learning process. Although every student has been given a login account to wifi, the internet speed, capacity they receive is still not optimal and other facilities such as the language lab are still inadequate because there is still a lack of facilities that can support learning such as listening.

4. What are the obstacles faced by lecturers and students in facing the challenges of the industrial 4.0 ? Please explain and give an example!

From the results of interviews with lecturers, they said that there are still many obstacles faced by lecturers in

facing the challenges of the industrial revolution 4.0. This does not cover that the obstacles that are actually faced by the lecturers themselves are not from themselves but from their students. Actually, the lecturers themselves are hampered by the understanding and backwardness of the students they teach.

From the results of interviews with students, students said that the obstacles they faced in facing the challenges of the industrial revolution themselves were the lack of facilities that were still inadequate from the campus and the lack of student literacy and limited information that students could get, especially for students living in their own Islamic boarding school. It is still difficult to access the internet and some online learning media.

5. What are the challenges faced by lecturers and students of Al-Qolam Islamic Institute of Malang?

From the results of interviews with lecturers, it was said that lecturers as teaching staff must be ready to face the challenges of the industrial revolution 4.0 themselves. As well as the challenges that lecturers have to face, lecturers or teaching staff are expected to be able to become agents of transformation to strengthen Human Resources in building the talents of students, managing learning more creative, for that lecturers are required to continue to improve professionalism towards 21st century education.

From the results of interviews with students, it is said that the challenges faced by students in the era of the industrial revolution 4.0 are: 1. Students must be able to develop their potential. 2. They must also be able to master technological developments.

DISCUSSION

Of the 8 questionnaire questions, there are 7 points (1,2,4,5,6,7,8) which indicate that the lecturers choose that the lecturers are ready to face the challenges of the industrial revolution 4.0. A total of 1 point (3) which indicates that the lecturer has a negative answer to the readiness of the lecturer in facing the challenges of the industrial revolution 4.0.

Meanwhile, from the results of a questionnaire consisting of 8 questions, there are 6 points (1,2,4,5,7,8) which indicate that students choose to be ready to face the challenges of the industrial revolution 4.0. A total of 2 points (3.6) which indicate that students have negative answers to readiness in facing the challenges of the industrial revolution 4.0.

From the interview session, it can be concluded that the lecturer's view of readiness to face the challenges of the industrial revolution 4.0 is a positive answer because the lecturers are very ready to face the challenges of the industrial revolution 4.0. However, from the results of interviews with lecturers, there are still obstacles and challenges faced by lecturers in the teaching and learning process in the era of the industrial revolution 4.0. The obstacles faced by lecturers are: understanding and backwardness of the students they teach. And the challenges that must be faced by lecturers in the era of the industrial revolution 4.0 are: lecturers or teaching staff are expected to be able to become agents of transformation to strengthen human resources in building student talent, managing learning more creative, for that lecturers are required to continue to improve professionalism towards century education. 21.

While the conclusions from the results of interviews with students, regarding readiness to face the challenges of the industrial revolution 4.0 are answers that tend to be negative because there are still many obstacles experienced by students and challenges that students must face in learning 4.0.

The obstacles faced by students are: 1. Campus facilities are still inadequate to support learning in the 4.0 era. For example, the

absence of a computer lab and the lack of facilities in the language lab 2. Students are limited in reaching the internet network, therefore students find it difficult to get updated information 3. And the limitations of students living in Islamic boarding schools to access the internet.

While the challenges faced by students in the era of the industrial revolution 4.0 are: 1. Students must be able to develop their potential. 2. They must also be able to master technological developments. They also feel that as students they are still not ready to face the challenges of the industrial revolution 4.0.

Pimpin Meindra and Hari Wahyono on the journal a critical analysis of educational technology in the era of industrial revolution 4.0 show that there is a teacher's task that includes the teacher pedagogical and administrative tasks and their implementation in learning, teacher learning resources and media, the role of school institutions that have provided facilities in the form of: webmasters and increased internet bandwidth, education system that refers to the education system latest, and the impact on students varies depending on the learning style by the teacher.¹⁴

Assyifa Salsabila Arsaf on the Tesis teaching english in industrial revolution 4.0: challenges and opportunities the fidding of this study indicate that the industrial revolution 4.0 may have both positive and negative impacts on English language teaching. The positive impacts include providing flexible learning time and place, increasing student self-confidence and motivation, encouraging student independence, increasing student creativity, building meaningful learning for students, preparing graduates for future work and life, creating opportunities for teachers to use technology in the learning process. The negatives are making it difficult for unprepared teachers, reducing interaction between teacher and students, demanding high internet access, declining writing skills and lack of

¹⁴Pimpin Meindra, Hari Wahyono, "A Critical Analysis of Educational Technology in The Era of Industrial Revolution 4.0" Journal, (Malang: Universitas Negeri Malang, 2020)

focus. Furthermore, to improve professionalism, a teacher must be aware of and adapt to developments, develop cooperation with students, improve teacher quality and competence, join and participate in teacher professional development.¹⁵

Achmad Saiful Ulum, Suhartono and Evi Sistiyanini on the journal pemanfaatan teknologi pembelajaran di era revolusi industri 4.0 show that The results of the community service that the Pasmusuran City MGMP economic teacher team participated in showed maximum results, as seen from the enthusiasm of the teachers in simulating the applications that had been provided and completing tasks on each material that had been given.¹⁶

CONCLUSION

The progress of the development of the world of technology and information is a sign of the readiness of the world of education in entering the era of the industrial revolution 4.0. Facing the industrial revolution 4.0 that is already in sight, it is believed to be able to improve the quality of life of human resources in the world due to the wave of changing times with information and communication technology. Thus, it is necessary to continuously develop the competence of lecturers and students, by educating students who are ready to compete in the world of work after graduating from campus and create quality graduates.

Based on the results of the research and discussion described in the previous section, it can be concluded that lecturers have a positive view of the readiness of lecturers and students in facing the challenges of the industrial revolution 4.0 at the Al-Qolam Islamic Institute. However, there are still obstacles and challenges that

¹⁵Assyifa Salsabila Arsaf, *“Teaching English In Industrial Revolution 4.0: Challenges and Opportunities”*, Tesis (Banda Aceh : Universitas Islam Negeri Ar-Raniry, 2020).

¹⁶Achmad Saiful Ulum, Suhartono, and Evi Sistiyanini, *“Pemanfaatan Teknologi Pembelajaran Di Era Revolusi Industri 4.0”* Journal, (Surabaya: Sekolah Tinggi Ilmu Ekonomi Perbanas, 2020).

An Analysis Of The Readiness Of Lecturers And Students Of Al-Qolam Islamic Institute To Challenge The Industrial Revolution 4.0

lecturers and students face in learning in the era of the industrial revolution 4.0 at the Al-Qolam Islamic Institute.

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