Developing Core Competencies for Islamic Higher Education in Indonesia in the Era of Industrial Revolution 4.0

Alhamuddin
Universitas Islam Bandung
ORCID iD: 0000-0002-1180-2813

Andi Murniati
Sekolah Pascasarjana Universitsa Islam
Negeri Sultan Kasyim Riau
ORCID iD: 0000-0002-6987-8220

Eko Surbiyantoro
Universitas Islam Bandung
ORCID iD: 0000-0002-1180-2813

Dewi Mulyani
Universitas Islam Bandung
ORCID iD: 0000-0001-9962-8145

Abstract: The curriculum has a role as an instrument to conserve the culture of a nation. Without a good curriculum, the culture of a nation can be extinct right away because there are no preservation efforts. By way of inclusion of culture in the curriculum, it is hoped that it can be passed on to the next generation. Then they will know at least their ancestors' culture. It is called a conservative role. This research uses a quantitative approach with a case study method. Data collection was carried out by a questionnaire and in-depth interviews. Data were analyzed using an interactive model. This analysis technique started from data collection. Data was reduced after it had been collected. The next step was to presenting the data, verifying and drawing a conclusion. Based on the description above, this research is considered important to be carried out being an addition for existing policymakers in order to organize higher education. Moreover, it is in response to the demands and basic guidance of compiling a curriculum based on the Indonesian National Qualifications Framework (KKNI) which is being and will be implemented in higher education in Indonesia especially in Islamic colleges.
Keywords: core competencies; islamic higher education; curriculum

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Introduction

The era of the industrial revolution 4.0 is marked by quality competition. It requires all parts in various fields and development sectors to constantly enhance their competence. Moreover, it is necessary to adjust their vision, mission, objectives, and strategies to be relevant. These adjustments directly change the structure in macro, meso, and micro systems, as well as in education. The national education system must always be developed conforming to the needs and developments that occur at the local, national and global levels.

Islamic colleges as educational institutions aim to form Moslem scholars who have a noble character, good knowledge,

and high competence. This is for the welfare of the people and the fulfilment of public needs. Afterwards, these objectives are disclosed and developed in the main duties of Islamic colleges. The main duties in question are Islamic colleges are an integral part of national development which becomes a mediator between Islamic science and general science and technology (Mas'ud et al., 2004).

The issues in the management of higher education are around quality,

potential, systems, work ethic, funding, infrastructure. Also, issues related to their function and role in building human resources. These criticisms are indicators to determine higher education quality standards. From several main problems above, some problems that require immediate solutions. They are the quality of graduates and higher education contributions to scientific development.

Table 1. Data of Unemployment Based on Educational Level

No.	The Highest Education Completed	2017		2018		2019
		February	August	February	August	February
1	Didn't/ Never Attended School	92,331	62,984	42,039	31,774	35,655
2	Didn't/ Haven't Graduated from Elementary School	546,897	404,435	446,812	326,962	435,655
3	Elementary School	1,292,234	904,561	967,630	898,145	954,010
4	Junior High School	1,281,240	1,274,417	1,249,761	1,131,214	1,219,767
5	Senior High School	1,552,894	1,910,829	1,650,636	1,930,320	1,680,794
6	Vocational High School	1,383,022	1,621,402	1,424,428	1,731,743	1,381,964
7	Academy/Diploma	249,705	242,937	300,845	220,932	269,976
8	University	606,939	618,758	789,113	729,601	839,019
	Total	**7,005,262**	**7,005,262**	**6,871,264**	**7,000,691**	**6,816,840**

College graduates are quite large in quantity, but they are poor in quality. The quality of college graduates still considered unable to meet the expectations of society. Basic competence and professionalism are often complained about. Eventually, there are many unemployed graduates. Likewise, the contribution of colleges to the development of science, technology, arts and culture is still considered insignificant by society. The public has not seen colleges as a center for the study of science for solving problems related to religion, even in the fields of science, art and culture, and technology-based on Islam. The results of college research on religious issues related to societal problems and science are not widely known by the public.

Perhaps it is because of nonexistence, poor quality, or lack of dissemination.

Based on the descriptions and analyzes that have been stated above, one of the factors in the lack of success of colleges in achieving the main objectives contained in Government Regulation No.60 of 1999 is the curriculum factor. Considering, the curriculum is an educational plan that will be given to students. The existence of the curriculum is not only limited to the material that will be provided in the class but also it encompasses anything that is deliberately held or eliminated for students' experience in the class (Hamalik, 2007; WH Schubert, 1986). Therefore, the position of the curriculum as an urgent component cannot be dismissed in

the context of quality improvement in colleges. In a strategic study of the Higher Education Sector of the Ministry of Religion of the Republic of Indonesia, it is stated that the higher education curriculum at Islamic Religious Colleges is currently still very conventional and not based on applications and research. Also, less communicative to all parts involved. Therefore, one of the efforts to overcome these various problems and to fulfil the demands of the Law on Teachers and Lecturers No. 14 of 2005 is the development of a relevant Islamic Religious Education (PAI) curriculum. With the result that graduates are expected to have all the criteria for a professional teacher with various competencies obtained from college (Selvi, 2010). Besides, curriculum development is one of the strategies for national education development. Because graduates need to have some skills, especially the ability to use knowledge, understanding, with theoretical and practical thinking skills as well as other skills to be able to perform work duties effectively according to demands of certain works standards (Muhaimin, Suti'ah dan Prabowo & Sugeng, 2009). Shortly, the development of the curriculum is expected to obtain results, including the quality of education is more guaranteed; be able to meet the needs of employment, and the role of colleges as agents of change in society can be fulfilled.

Consequently, the review of the curriculum and learning process should focus on fostering graduates who have various competencies. It is especially the competencies needed in the era of the industrial revolution 4.0 (Blömeke & Kaiser, 2012). The review includes various aspects such as: first, scientific competence which includes intellectual intelligence, so they can transfer knowledge properly. Second, professional competence so they can carry out an effective learning process. Third, personal competence includes emotional intelligence and spiritual intelligence so they can be a good example for other students. Fourth, social competence includes social intelligence so they can understand their social dynamics and environment, and they can provide adequate and appropriate responses (Azyumardi, 2002).

Supplementary, the results of research (Alhamuddin et al., 2020) have mentioned some of the competencies expected by the user society in the industrial era 4.0. Those need to be considered in the curriculum development process in the Islamic Religious Education (PAI) study program. In the end, the quality of graduates can be competitive and useful in society.

Table 2. Graduates Competencies in User Society Perspective

No	Ability	SS	S	C	K
1	Integrity (Ethics and Morals)	93%	7%	0	0
2	Knowledge	90%	10%	0	0
3	Communication Skills	76&	24%	0	0
4	The Use of Information Technology	76%	24%	0	0
5	Loyalty and Commitment	76%	21%	3%	0
6	Initiative	72%	24%	4%	0
7	Self-Direction	72%	28%	0	0
8	Self-Development	69%	28%	3%	0

9	Leadership	69%	28%	3%	0
10	Creativity	69%	28%	3%	0
11	Problem Solving Skills	69%	28%	3%	0
12	Visionary	69%	28%	3%	0
13	Teamwork	62%	38%	0	0
14	Work Skills	62%	35%	3%	0
15	Managerial Skills	57%	39%	4%	0
16	Foreign Language Communication Skills	55%	24%	21%	0
17	Critical thinking	52%	45%	3%	0

Through take notice of the existing realities, the orientation for the preparation of graduates needs to be expanded. Several factors influence the quality of graduates of an educational institution, including college policies, curriculum, personnel, infrastructure, financial systems, information systems, environment, and social relations. As reported by the researcher, the curriculum can be deemed a top priority for attention. Furthermore, it is necessary to review the existing curriculum, by preparing all the tools that can support the achievement of this design.

Curriculum-Based on the Indonesian National Qualifications Framework

The Indonesian National Qualifications Framework (KKNI) was arranged in response to Indonesia's 2007 ratification toward the International Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in Asia and the Pacific. It is useful for assessing the equivalence of learning outcomes and the qualifications of labour that will either study or work locally or overseas. Particularly, it becomes a reference for the quality of Indonesian education when it is compared with the education of other states.

Indonesian higher education graduates can be equated with overseas graduates through this scheme. On the other hand, foreign graduates who will study in Indonesia can also liken learning outcomes. The role of the Indonesian National Qualifications Framework becomes important along with technological developments and human movements. Free market agreements in the Southeast Asian territory have enabled the movement of labour across countries. Hence, equalizing learning outcomes among ASEAN countries is very crucial. Moreover, the industrial revolution 4.0 is a challenge for colleges. Higher education graduates are expected to be qualified to face the era in which technology and artificial intelligence can replace human jobs.

The Role of the Higher Education Curriculum

The curriculum has numerous meanings, some say that "the curriculum is a set of courses" or "curriculum is a learning experience". Some state the curriculum is "learning plans or learning programs". In the context of Law No. 20 of 2003, the curriculum is defined as a set of arrangements regarding the objectives, contents, learning materials, and approaches. Based on these various

concepts of curriculum, this research can be defined as a designed document that contains the objectives; the content of the material and learning experiences; approaches and strategies; evaluations; and implementations. Thus, curriculum development includes the preparation of documents, implementation of documents, and evaluation of documents that have been prepared.

The role of curriculum development concerns the conservative, creative, critical and evaluative roles. The curriculum has a role as an instrument to conserve the culture of a nation. The culture of a nation can be instantly disappeared without a good curriculum because no institution tries to preserve it. By way of inclusion of culture in the curriculum, it is hoped that it can be passed on to the next generation. Then they will know at least their ancestors' culture. It is called a conservative role.

The creative role means that the curriculum must be adapted to the latest developments in knowledge and technology. Curriculum developers should be creative, workhorses, and have to constantly adapt to the changes. Consequently, the existing curriculum can match the needs and demands of society. In this case, the curriculum must be able to create new creations related to something, for example, related to the culture that grows in society so the culture is more appropriate with current development and demands of the society.

The last, role of critical and evaluation is that the curriculum can critically assess and evaluate the existence of the ancestors' culture to know the values contained in it. The next generation can sort out which culture can be applied if there are unfavourable cultural elements.

The curriculum should be able to develop the potential of students. With the result that they have a new mentality such as religious, productive, thrifty, nationalist, love environment, like reading, like sports, love art, innovative, creative, critical, democratic, love peace, love cleanliness, discipline, work hard, mastering information technology and so on. This is the ideal of Indonesian human resources. In other words, the curriculum must pay attention to the quality of humanity. It should be related to the development of science and the working world.

Framework for the Development of the Islamic Higher Education Curriculum

The substance of education is a contemplation on the actual problems faced by society in real life. The process of education or student learning experiences needs to prioritize the collaboration of various parts in the context of contemporary problems. Because of this, curriculum arrangement or educational program is begun from problems faced in the society as educational content. At the same time, the process or the students' learning experience is to explain science and technology, to work cooperatively and collaboratively, and to find solutions to these problems towards a better society. These improvements are carried out periodically and continuously according to the demands. Accordingly, good management will have a positive impact on sustainable innovation.

The college curriculum will have a very positive impact if it is arranged comprehensively which encompasses the facts from the college itself. The details that need to be studied are human resources, students, and supporting facilities. Factors concerning the parents are the family economy, parents' education, and their preferences. The socio-economic and cultural conditions of the local society, as well as the geographical conditions and the development of science, technology and art also affect. Ultimately it will emerge

knowledge of the developing strategic issues and the demands needed by prospective graduates. To grasp education it is necessary to pay attention to some questions who educate whom ?; what society are they?; when, where and what is the social position of the students?. Some of these fundamental questions become the basic framework in planning an educational curriculum. It is necessary to understand that a basic framework is a unit that is interconnected between one and another. Then the relationship between parts of the unit must be maintained to build relevance. Alhamuddin (2012) states that this process is carried out with a systemic approach effectively and efficiently based on existing needs. The process includes: identifying necessities and problems as well as for deciding alternative solutions. This approach has objectives, functions, components, interactions and synergic effects that are influenced by other systems. it undergoes a process of transformation, feedback and relative nature.

Research Method

This research was qualitative. Qualitative research is "research that produces descriptive data in the form of written or spoken and observable behaviour"(Moleong, 2019). Within the framework of this research, the method used was a case study. In general, the case study is a research method or strategy as well as the results of a study in a particular case. In the currently developing mainstream of social sciences, researchers generally emphasize the first notion. A case study is an approach to studying, explaining, or interpreting a case in the natural context without any intervention. Among all the various case studies, the most prominent tendency is an attempt to highlight a decision or a set of decisions (Schramm) in Yim (2002). A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context. When the boundaries between phenomenon and context are not evident and in which multiple sources of evidence are used. The case study was conducted because the researcher wanted to know the phenomenon intrinsically, the regularity of the case, and the specificity of the case. It is not for other external reasons. Meanwhile, the second type, instrumental case study was conducted for external reasons. It is not for the essence of the case.

This data collection aimed to answer research questions regarding the development of the core competencies of the Islamic Religious Education (PAI) curriculum at Islamic Religious Colleges (PTKI). Based on these research questions, data collection techniques in this study were carried out by literature study, interviews, documentation, and questionnaires. This research had directed to produce a description of the core competencies development of the Islamic Religious Education (PAI) curriculum in the era of the industrial revolution 4.0. Then the researchers used an interactive model analysis technique that had been developed by Mile & Huberman (1985). It was started from data collection, data reduction, data display, and concluding the data conveyed.

Result and Discussion

UNESCO had socialized four educational principles in 2000. They are learning to know, learning to do, learning to be, and learning to live together. Based on them, around 2002, the term competency had been correlated with the quality of graduates. Accordingly, the curriculum at that time was called a competency-based curriculum KBK. Afterwards, several laws and regulations appeared, including Law number 12 of 2012 concerning higher education, Presidential

Regulation number 8 of 2012 concerning The Indonesian National Qualifications Framework (KKNI), and Minister of Education and Culture Regulation number 49 of 2014 concerning national standards for higher education (Alhamuddin et al., 2020).

According to Presidential Regulation number 8 of 2012 Article 1, The Indonesian National Qualifications Framework (KKNI) is a capability qualification staging framework that can match, equalize, and integrate aspects of education with aspects of work training and work experience. It aims to provide recognition of workability conforming to work structures in various fields. It is a system that connects aspects of education and training to form quality and certified national human resources through formal education, informal education, non-formal education, training or work experience.

The Indonesian National Qualifications Framework in the field of higher education is a qualification staging framework that can connect, equalize, and integrate educational achievement from informal education, non-formal education, and work experience into types and levels of higher education. The qualification staging is intended to facilitate the education of someone who has work experience and has an educational achievement to bring recognition of certain graduate qualifications from higher education. It has nine qualification levels, which are as below.

First level, they can do simple, limited, regular work by using the tools, methods and processes that have been made, and under the guidance, supervision and responsibility of their supervisor. Second, they have factual insight. Third, they have a responsibility for their work. The second level is divided into three classifications. Initially, they can carry out a specific activity using tools and information, can obey routinely work regulations implemented, as well as

providing valuable quality performance, under the control of a superior. they have basic operational insight and factual insight into specific activity sectors. Tertiary they are responsible for their work and can be given the responsibility of cultivating others.

The third level is, initially, they can do some specific work by interpreting information and using tools based on some work procedure options. Besides they can show their performance outcomes with measurable quality and quantity in indirect supervision. they have complex operational insight so they can solve various problems. Tertiary, they can work together and can communicate with others in the work environment. they are responsible for their work and can be given responsibility for the quantity and value of other's work.

The fourth level is, initially, they can perform specific duties by analyzing limited information, determining appropriate methods and showing performance with good quality and quantity. They have basic guidelines for certain areas of expertise and can equalize them to the problems that occur. Tertiary, they can work together and can make a written report in a limited scope and can have the initiative. they are responsible for their work and can be given responsibility for the work of others.

The fifth level is, initially, they can finish the work by determining the appropriate method and showing performance in good quality and quantity. they have theoretical guidelines in certain knowledge areas universally and can plan the solutions to the problems. Tertiary, they can organize teamwork and can make a comprehensive written report. they are responsible for their work and can be given responsibility for the results of group work.

The sixth level is, initially, they can apply their field of expertise, can take advantage of science and technology or arts in solving problems and can deal with all

situations. they have comprehensive theoretical guidelines in certain knowledge areas and specific theoretical guidelines in that knowledge and can make plan solutions to problems. Than they can make appropriate decisions based on information analysis and can provide guidance when determining a wide selection of solutions independently or in groups. they are responsible for their work and can be given responsibility for the work of an organization.

The seventh level is, initially, they can conceptualize and utilize resources in their responsibilities, and can evaluate the work comprehensively by utilizing science and technology or art to provide a strategic development method for the organization. They can solve science and technology or art problems in their fields with a monodisciplinary approach. Tertiary, they can carry out research and can choose decisions in consonance with overall accountability and responsibility for all aspects in their field of expertise.

The eighth level is, initially, they can develop science and technology or art in their field of expertise through research until they can create innovative and tested works. They can solve science and technology or art problems in their field of expertise using interdisciplinary or multidisciplinary methods. Tertiary, they can carry out research and develop knowledge that is useful for society and science and can achieve national and international achievements.

The ninth level is, initially, they can develop science and technology or art in their fields of expertise or their profession through research until they can create creative, original and tested works. They can solve science and technology or art problems in their field of expertise based on interdisciplinary, multidisciplinary and transdisciplinary methods. Based on it, the adjustment for the Islamic Religious Colleges (PTKI) curriculum, especially for the Islamic Religious Education (PAI) study program, needs to be done by paying attention to the development of core competencies of graduates (Nadler & Tushman, 1999). Thus the competencies of graduates encompass the abilities required by the industrial world and educational institutions (Alake-Tuenter et al., 2012).

Table 3. The Formulation of Knowledge Element in the Graduates Learning Outcomes (CPL) in the Islamic Religious Education (PAI) Study Program

Graduates' Profile	Knowledge Element in the Graduates Learning Outcomes (CPL)
Educators / Educational Practitioners	1. Be able to master the theoretical concepts and scientific foundations of education deeply as a starting point in developing the religious potential of the students to achieve the defined competency standards;
	2. Be able to master the substance of the scientific studies of Islamic Religious Education (Qur'an-Hadith, Akidah-Akhlak, Fiqih, and Islamic Cultural History extensively, deeply, and contemporary to guide students to meet the defined competency standards;

	3. Be able to master Islamic Education learning theories and be able to formulate and implement them procedurally in Islamic Religious Education learning in schools;
	4. Be able to master the integration concept of science, religion, and nationalism on Islamic Religious Education learning in schools;
	5. Be able to master the concept of educational leadership in order to mobilize and cultivate the practice of Islamic teachings and to establish noble character of students in schools.
Knowledge Mastery	1. Be able to master the theoretical concepts and scientific foundation of education deeply as a starting point in developing the religious potential of students to achieve the defined competency standards.
	2. Be able to master the substance of the scientific studies of Islamic Religious Education (Qur'an-Hadith, Akidah-Akhlak, Fiqih, and Islamic Cultural History extensively, deeply, and contemporary to guide students to meet the defined competency standards;
	3. Be able to master Islamic Education learning theories and be able to formulate and implement them procedurally in Islamic Religious Education learning in schools;
	4. Be able to master the integration concept of science, religion, and nationalism on Islamic Religious Education learning in schools;
	5. Be able to master the concept of educational leadership in order to mobilize and cultivate the practice of Islamic teachings and to establish noble character of students in schools.
Managerial Abilities	1. Be able to make appropriate and strategic resolutions in Islamic Religious Education learning in schools based on analysis of relevant information, data and research results.
	2. Be able to provide instructions and actions for solving various problems of Islamic

	Education independently and collectively to obtain quality and maximum learning outcomes in the establishment of students' religious behavior. 3. Be able to map discourse and religious phenomena as well as contemporary issues in Islamic Religious Education for a basis in the development of creative and innovative learning.
Responsibilities	1. Be able to be responsible for the implementation of Islamic Religious Education learning which is effective, productive, meaningful, tolerant and based on human values in a multi-religious society either independently or dependently 2. Be able to adapt appropriately in carrying out Islamic Religious Education learning duties based on a solid, stable, mature, wise and authoritative personality, become a good example for students, and have noble character independently and confidently.

The formulation of knowledge element in the Graduates Learning Outcomes (CPL) above is an elaboration of the knowledge element formulation in the Indonesian National Qualifications Framework (KKNI) level 6. It reads: "Mastering theoretical concepts in certain fields of knowledge in general and theoretical concepts of specific parts in-depth, and be able to formulate procedural problem solving". The provision of the Graduates Learning Outcomes refers to the Directorate General of Islamic Education Decree Number 2500 of 2018 regarding Competency Standards for Graduates and Learning Outcomes of Undergraduate Study Programs at Islamic Religious Colleges and the Islamic Religious Faculties at Higher Education. Islamic Religious Colleges can determine the Graduates Learning Outcomes by referring to that decree. Elements of attitude, knowledge and skills the Graduate's Learning Outcomes are not only achieved through courses but also from other student activities. The next step after determining the Graduates Learning Outcomes is determining the study material.

Table 4. Study Materials of Islamic Religious Education (PAI) Curriculum

Learning Outcomes	Study Materials												
	Philosophy	Language skills	Curriculum	Educational Theory	Insrtructional Theory	Educational Psychology	Research	Instructional Model	Islamic Science	Instructional Evaluation	Instructional Management	Instructional Media
1. Be able to master various theoretical and philosophical concepts of general and Islamic	√											

	Competency				
	education as a foundation and frame of reference in the implementation of Islamic Religious Education in schools.	√ √			
2.	Be able to master research theory in the field of Islamic Religious Education in taking reflective action to improve quality with innovative actions in Islamic religious education learning in schools.		√		√
3.	Be able to perceive the characteristics of students from physical, spiritual, social, cultural, emotional and intellectual aspects for the purposes of Islamic Religious Education learning in schools.		√		
4.	Be able to master instructional theory and instructional principles in the implementation of Islamic Religious Education learning in schools.	√			√
5.	Be able to master the material substance, structure, concept and scientific mindset of Islamic Religious Education which includes al-qur'an, hadits, akidah akhlak, ushul fikih, fikih, and Islamic cultural history.		√ √		
6.	Be able to master curriculum development theory, media and learning resources, as well as assessment and evaluation of Islamic Religious Education learning in schools.	√			√
7.	Be able to master entrepreneurship theory in the context of developing creative and innovative Islamic Religious Education learning.		√ √		√
8.	Be able to master the theory of educational leadership to position and develop Islamic Religious Education in schools		√		

as parent in implementing character education in schools.

9.	Be able to apply the curriculum for Islamic Religious Education in schools in consonance with the procedures and principles in curriculum development.	√
10.	Be able to carry out educational learning on Islamic Religious Education in schools.	√
11.	Be Able to utilize information and communication technology effectively and efficiently for Islamic Religious Education learning in schools.	√
12.	Be able to facilitate the development of the students' religious potential to actualize the palpable religious abilities in schools.	
13.	Be Able to communicate effectively, empathically, and politely in the implementation of Islamic Religious Education duties in schools, in the academic community, or in the society.	
14.	Be able to carry out assessment and evaluation of the process and learning outcomes of Islamic Religious Education appropriately, and be able to use it for learning purposes.	
15.	Be able to carry out reflective actions and the use of information and communication technology to improve the quality of Islamic Religious Education learning in schools.	
16.	Be able to apply professional and scientific development actions in a sustainable, independent and collective manner through self-development and the use of information and	

communication technology to
realize self-performance as
pure educators.

The table above illustrates the relationship between the Graduates Learning Outcomes (CPL) and the scientific structure of the Study Program. It is stated in the form of a branch of science as shown in the following "study material" table.

Table 5. Study Materials of Attitude and Value Elements

Learning Outcomes		Study Materials								
		Nationality	Citizenship	Language	Al-Qur'an	Hadits	Akhlak	Fiqih	Tarikh	Akidah
1.	Be devoted to God Almighty and be able to show a religious attitude	√	√	√	√	√	√	√	√	√
2.	Be able to vindicate human values in carrying out duties based on religion, morals and ethics;	√	√							√
3.	Be able to contribute in improving the quality of life in society, nation, state, and the advancement of civilization based on Pancasila;	√	√	√					√	
4.	Be able to have a role as citizens who are proud and love the country, have nationalism and have a sense of responsibility to the state and nation;	√	√	√		√	√		√	

Based on the explanation above, the development of core competencies in the Islamic Religious Colleges (PTKI) emphasizes professional competence. It means the Islamic Religious Colleges graduates have good and true Islamic insights. Also, knowledge competence and skills as leaders and preachers are a priority. They should prepare qualified graduates who have a strong faith and spiritual depth, noble character, breadth of knowledge and professional maturity. This is useful for them in carrying out their duties as teachers, employees and other professions in society. This is a core competency that should be developed in Islamic universities. It is in line with the objectives of Islamic education (Alhamuddin et al., 2018) that "the aim of education in Islam is to create a good man. It aims at the balanced growth of the total personality of man through the training of man's spirit, intellect, the rational self, feelings and bodily senses ".

> The meaning of education is a totality in the context of Islam is internet in the connotations of the terms tarbiyah, Ta'lim and ta'dib have taken together. What each of these terms conveys concerning man and his society and environment concerning God is related to others and together they represent the scope of education in Islam, both formal and non-formal…….education should aim at the balanced growth of the total personality through the training of man spirit,

intellect, rational self feelings and bodily senses. The training imparted to a Muslim must be such that infused into the whole of this personality and creates in him an emotional attachment to Islam and enables him to follow the Qur'an and Sunnah and be governed by the Islamic system of values willingly and joyfully so that he may proceed to the realization of this status as khalifatullah to whom Allah has promised the authority of the universe.

The educational world is developing dynamically according to the times. Now, Indonesia is in the era of the Industrial Revolution 4.0. Previously, education in Indonesia had undergone several phases of change. This requires all elements of education to adjust and balance. Even they need to be one step ahead to solve the problems.

The dynamics of the industrial revolution were having changes. In industrial revolution 1.0, steam power had been used in the mechanization of production. In the industrial revolution 2.0, electric power had been used to organize mass production. Afterwards, in the industrial revolution 3.0, electronic technology and information technology have been used to automate production (Aziz Hussin, 2018). Now, in the era of the industrial revolution 4.0, new technology was invented which resulted in extraordinary changes in all fields, including education. Sketchily, the challenges and opportunities in the industrial revolution 4.0 (Syarbini, 2020) are as follows:

Table 6. The Challenges and Opportunities of the Era 4.0

No	The Challenges of the Era 4.0	The Opportunities of the Era 4.0
1	Industrial Readiness	Ecosystem innovation
2	Trusted workforce	Competitive industrial base
3	Simplicity of socio-cultural regulations	Technological investment
4	Diversification and job creation	Integration of small and medium enterprises and entrepreneurship

The era of the Industrial Revolution 4.0 was leading to demands for change in all aspects of education. In the beginning, the teacher's duty had been limited to transferring knowledge to students or just teaching in the class. Then this duty was replaced by technology in this era. These demands were encouraging a teacher to continue to transform, especially regarding the development of technology. Today, the world of education requires teachers who understand the dynamics of the class and can use technology. Renewable technology will make it easy and more flexible for teachers so that they can deliver creative, innovative, meaningful and fun learning.

The professional demands of a teacher in the Industrial Revolution 4.0 were in agreement with the development of information and technology. This requires teachers to be able to adapt and update their abilities in technology and information.

However, technological sophistication does not make the teacher's role replaced by robots. There is an important role of the teachers' spirit as a figure assigned to instil positive character in students. No matter how sophisticated the technology, the teacher's role cannot be replaced, even with a robot or a super sophisticated machine. It is because the teacher's job is not only to transfer knowledge, but also to shape the noble character of the students with courtesy, tolerance, empathy, creativity, and nationality.

The important role of teachers is part of the Indonesia development agenda in 2020-2024. It is the third agenda which contains about improving quality and competitiveness of human resources which focuses on the fulfilment of basic services. For example, mapping quality education services and improving access to health services. The development of quality human resources also relies on the quality of education. In this case, teachers are expected to become agents of strengthening the nation's human resources in building national character.

This Industrial Revolution 4.0 also requires teacher figures to be able to prepare students with 21st-century skills. (Syarbini, 2020) stated that there are at least 10 important skills in the Industrial Revolution Era 4.0. They are complex problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgment and decision making, service orientation, negotiation, and cognitive flexibility. This is a challenge and an opportunity for teachers to be able to meet the needs of education dynamics. As stated in (Greenstein, 2012) that education in the industrial era 4.0 needs to be seen as a development of competence. It consists of three major components. They are competent to think, act, and live in the world. The components of competence to think to include critical thinking, creative thinking,

and problem-solving. The components of competence to act include communication, collaboration, digital literacy, and technological literacy. The components of competence to live include initiative, self-direction, global understanding, and social responsibility.

However, advancing the world of education in Indonesia is not easy. There are many problems with education in Indonesia today, including the quality and competitiveness of Indonesian education which is very low and uneven. When compared to other countries in ASEAN, Indonesia is at the bottom. It also can be seen from the parameters of the Program for International Student Assessment (PISA) test results. The level of Indonesian children in reading, math, and science is below the level of children in Singaporeans, Malaysians, Vietnamese and Thai children.

Of course, there are reasons for this problem. One of them is the low competence of teachers. The teacher certification program has indeed been running for a long time, yet in fact, there are still many teachers whose low pedagogic and professional competencies. Their score is just below the standard of the Teacher Competency Assessment (UKG). Besides, the low competence of teachers in Indonesia is caused by several factors. They are, their educational background is not appropriate with the discipline being taught; there are still many of them not yet undergraduate; the Continuous Professional Improvement (PKB) program for teachers is still low; teacher recruitment is not corresponding either mechanism or work analysis.

Education in the industrial era 4.0 needs to be viewed as a competency development consisting of three major components, they are the competence to think, act, and live in the world (Greenstein, 2012). The thinking component includes critical thinking, creative thinking, and

problem-solving. Acting components include communication, collaboration, digital literacy, and technology literacy. The components of life in the world include initiative, self-direction (self-direction), global understanding, and social responsibility.

The Educational Paradigm in the Industrial Revolution Era 4.0 brings changes to the components of education, including those related to the learning process in the classroom. The principles of learning include being student-centred, children as active learners, the use of information and communication technology (Virtual Learning) infrastructure, the house becomes a learning environment and the classroom as a practice room (flipped classroom), self-learning and development of soft-skills (critical, creative, and problem-solving).

These changes make the classroom not the only place to study. The virtual world becomes a classroom. An impact is several professions will be replaced by artificial intelligence. Also, the role of teachers not only more than just teaching, but also managing student learning in a flexible, creative, interesting, and more fun way. In addition to these five competencies, the Ministry of Education and Culture said there were five competencies that teachers ought to prepare for the Industrial Revolution 4.0 (Puncreobutr, 2016). They are, first, educational competencies and internet-based learning competencies; second, technological commercialization competencies. It means that a teacher must have competencies that will bring students to have an entrepreneurial attitude with technology. Third, competence in globalization, that is to say, teachers are not confused about culture and can solve educational problems. Fourth, competence in future strategies is the competence to predict the future and to provide the strategy. Fifth, counsellor competence is the teachers' competence to understand student

psychological problems because of current development (Barth et al., 2007).

Conclusion

Based on the data presented above, it is concluded that the development of core competencies for the Islamic study program graduates are required to adjust the competence of graduates against the demands and challenges of the industrial era 4.0. In expectation, the Islamic study program graduates can survive in their competition with graduates from various other universities locally, nationally, and internationally.

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