

Digital Transformation Prospects in Islamic Higher Education:

Opportunities, Challenges and Its Impacts

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Abstract—According to the World Economic Forum, a Fourth Industrial Revolution is now building momentum, characterized by a fusion of technologies that blur the lines between the physical, digital, and biological spheres. Indonesia faces demographic bonus demands and rapid technological developments to produce skilled, qualified and competitive human resources (HR). Islamic Higher Education has a strategic role in playing its role and function in producing excellent graduates. Therefore, Islamic Higher Education is required to adapt to changes in the international context. Islamic Higher Education should be aware that demographic bonuses and the rapid development of technology as an opportunity to change. Toward that direction, digital transformation is a necessity in Islamic Higher Education. Opportunities and challenges of Digital Transformation in Islamic Religious Higher Education will be faced in line with tight competition, rapid changes, and sophisticated technological developments. How should higher education leaders prepare their institutions for future change? Who is leading this change and how will it affect it? The visionary leadership aspect, qualified lecturers, change-responsive curriculum, and adequate infrastructure are a form of reinforcement of digital transformation efforts of Islamic Higher Education in developing competent, skilled, qualified and excellent graduates.

Keywords—*digital transformation; islamic higher education; prospect*

I. INTRODUCTION

Higher Education in Indonesia, both public and private, are expected to compete at national, regional and international levels. This competition can be done if every college is able to respond to rapid changes in the environment and satisfy the desires of customers. Changes that are focused on this sustainable competitive advantage require tough individuals, have potential or capital independently or within an organization, able and willing to carry out work smartly, competitively and cooperatively for organizational importance and progress.

Human resources (HR) of Indonesia to date still have a low competitiveness compared with countries in Southeast Asia or Asia. Based on World Competitiveness Report 2016-2017, the competitiveness of Indonesia's new human resources ranks

41th. Thailand ranks 34th, 28th China, 25th Malaysia, and Singapore 2nd [1].

TABLE I. GLOBAL COMPETITIVENESS INDEX (GCI) 2016–2017 RANKINGS AND 2015–2016 COMPARISONS (IN ASIA).

No.	Country	GCI 2016–2017		GCI 2015–2016	
		Rank (out of 138)	Score (1-7)	Rank (out of 140)	Score (1-7)
1	Singapore	2	5.72	2	5.68
2	Malaysia	25	5.16	18	5.23
3	China	28	4.95	28	4.89
4	Thailand	34	4.64	32	4.64
5	India	39	4.52	55	4.31
6	Indonesia	41	4.52	37	4.52

^a Source: Global Competitiveness Index (GCI) 2016–2017.

Based on the report released by UNDP on Human Development Report 2017, Indonesia was ranked 113 out of 188 countries in the world [2]. Even more disturbing, the rankings actually declined from previous years, where in 1997 HDI Indonesia was ranked 99th, then ranked 102nd in 2002, and then slumped back to rank 111th in 2004, 110th in 2005.

The low competitiveness of national higher education can not be separated from the low quality of services and management or governance in universities. Universities as public institutions carry out the task of performing public services in the field of education. Service is one of the considerations for prospective learners (both coming from home and abroad) to determine the choice of which college will be entered.

According to the World Economic Forum (2016), the first industrial revolution used water and steam power to mechanise production. The second used electric power to create mass production, while the third used electronics and information technology to automate production. A Fourth Industrial Revolution is now building momentum, characterised by a fusion of technologies that blur the lines between the physical, digital, and biological spheres [3].

What role will higher education, especially Islamic Higher Educations in Indonesia play in the next phase of this revolution, and consequently how should Islamic higher

education leaders prepare their institutions for the changes ahead? Traditional higher education, as a tested for innovation, has played its role in this digital revolution. However, higher education also need to provide learners with the skills and knowledge they need for a very different future.

The higher education leaders, edtech entrepreneurs and students interviewed for this study believe transformation in higher education is essential. They are both optimistic and honest about the challenges ahead. Vice chancellors and presidents, anticipating a future with reduced public financial support, understand that it is no longer an option to keep doing things the old way; innovation is now prerequisite for survival.

Indonesia faces demographic bonus demands [4] and rapid technological developments to produce skilled, qualified and competitive human resources (HR). Islamic Higher Education has a strategic role in playing its role and function in producing excellent graduates. Therefore, Islamic Higher Education is required to adapt to changes in the international context. Islamic Higher Education should be aware that demographic bonuses and the rapid development of technology as an opportunity to change. Toward that direction, digital transformation is a necessity in Islamic Higher Education. Opportunities and challenges of Digital Transformation in Islamic Religious Higher Education will be faced in line with tight competition, rapid changes, and sophisticated technological developments. How should higher education leaders prepare their institutions for future change? Who is leading this change and how will it affect it?

II. METHOD

The research conducted using a qualitative approach. Qualitative research intends to understand the phenomenon of what is experienced by research subjects such as behaviors, perceptions, motivations, actions etc., holistically and by way of descriptions in the form of words and languages, in a special, natural context by utilizing various scientific methods [5]. The type of research (based on place/space) used in this study is a library research.

III. RESULT AND DISCUSSION

A. Findings

1) Digital transformation: Definition

The digital transformation, as defined by Constellation Research [6], is often means adoption of a new business model, existing staffers may find themselves without the skills necessary to contribute to the changing business. And this new business model, says Founder and Principal Analyst Constellation, Ray Wang [6], created a marketplace where winners will get it all. In a webinar available on demand, Wang revealed that more than half of Fortune 500 companies since 2000 had merged, acquired, went bankrupt, or were dropped from the list. And much of this change is due to the creation - or not created - the new digital business model.

Digital transformation is changing every aspect of the business landscape, provided that leaders are ready to embrace it. Harvard Business Review Analytics Services, published the

report, "Competing in 2020: winners and losers in the digital economy" to give an overview of the state of digital disruption and how business leaders are reacting to it [7].

2) Understanding digital transformation

According to the survey, 80% of the respondents believe that their industry will be disrupted by digital trends. 4% of the respondents believe that their industry reached its point of disruption prior to 2010, with 24% believing that it did so between 2010 and 2016. More than half of the respondents (56%) feel that their industry is reaching a point of disruption within the next three years, while 16% of them see digital disruption approaching in their industry beyond 2020. This indicates that every industry has its own perception of the idea of digital disruption and whether they are ready to embrace it. When it comes to recognizing how their businesses integrate digital technologies, only 16% of respondents considered their business to be "digital". 61% of them believe that they are hybrid, with some of their products or operations dependent on digital technologies, and 23% of them feel that they are still non-digital. Thus, there is still a practical gap between understanding the arrival of digital transformation and implementing it among products and services.

3) Participating in digital transformation

Both digital and non-digital companies recognize that digital disruption is coming, but not all of them are still participating in it. Some industries seem to be more receptive than others to the prospect of transformation, with communications/media companies, financial services and technology companies being the first to recognize that they are "very likely" to be affected by digital transformation. On the other side, manufacturing, government and healthcare industries don't seem to recognize digital disruption to the same extent. This could be explained by a lack of understanding on what digital transformation may mean for their industries, or it may simply be due to an inability to apply practical digital trends in their businesses.

Leaders in Asia Pacific's education sector are showing urgency in embracing the 4th Industrial Revolution. 87% of them believe that they need to transform to a digital institution to enable future growth, yet only 23% said that they have a full digital strategy in place today. These are some of the key findings of the Microsoft Asia Digital Transformation Survey, which seeks to understand how education leaders are embracing the digital era to prepare a future ready workforce.

The Microsoft Asia Digital Transformation Study surveyed 1,494 business leaders from Asia Pacific working in organizations with more than 250 employees from 13 Asia Pacific markets. This included 265 respondents from higher education institutions and universities. All respondents were pre-qualified as being involved in shaping their institution's digital strategy.

Even as majority of education leaders are aware of the urgent need to transform digitally to address the changing landscape, the study found that the transformation journey for most educational institutions in Asia is still at its infancy. In fact, only 77% of education leaders indicated that they are either in progress with specific digital transformation initiatives, or have limited or no strategy in place.

Don Carlson, Director, Education, Microsoft Asia Pacific said: “Digital disruption has resulted in a shift in how work is being approached and conducted, and it is important that education institutions transform in order to equip students with future-ready skills, such as honing their creativity and critical thinking capabilities. At Microsoft, we have a specific and nuanced approach to digital transformation in education. We believe this involves transformation in four key pillars – empowering faculty and non-teaching employees, engaging students, optimizing institutions and transforming learning, with data and the cloud being the key enablers.”

4) *Creating a digital strategy*

There is a great variation in respondents’ answers on whether they have a formal business strategy for the forthcoming digital future. 47% say that they have already developed a formal business strategy, which means that the remaining 53% are still not prepared for the disruption that will affect their organizations. This percentage also varies depending on the industry and the state of digital transformation they’re currently in. For example, 72% of digital leaders have a formal business strategy, versus 49% of hybrids and 24% of non-digitals. Technological companies and financial services businesses seem to be more prepared with formal strategies, while government, healthcare and retail are unsurprisingly lagging behind.

5) *Who leads digital transformation?*

When it comes to the person who leads digital transformation in an organisation, CEOs seem to be the first ones to embrace the change. The percentage is even larger in digital organizations, with 43% of them considering their CEO to be the one in charge of digital strategy. The CIO is the second person who is likely to lead digital transformation in an organisation, while CDOs and CTOs follow up. It’s interesting to note that 21% of non-digital organizations answered that they don’t have a particular person responsible for digital strategy. This means that there is likely to be a lack of coherent leadership regarding digital strategy, which is borne out by their difficulty in keeping up with digital trends.

6) *The opportunity for digital transformation*

In a very positive sign, 86% of respondents view digital transformation as an opportunity for their industry, rather than as a threat. The main reason organizations are moving to digital is to create an exceptional and highly relevant customer experience, with 40% of respondents considering it their main priority. Customer experience has already been improved with digital integration, from online purchases to customization and instant communication. We can expect further innovations in this area in the near future with the integration of AR and VR. Other factors that bring organizations closer to digital disruption are: first, enhanced operations for intelligence and speed; second, transformation of existing products to be more information/services based; and third, transformation of traditional products/business models. The firms surveyed largely agreed on the main benefits of the digital shift: a closer relationship with customers (72%), greater value chain integration (67%), and increased integration or collaboration with adjacent industries (42%). Once again, customer experience seems to be the primary reasons that organizations

are willing to embrace digital change, with technology and collaboration following close behind.

The 4th Industrial Revolution has brought about a digital change to the economy and social system, resulting in a shift in the way we work today. Citing an interesting fact-Thomas Frey, predicts that two billion jobs will be lost by 2030. In addition, research shows that 65% of children currently in school are working in jobs that do not currently exist.

The World Economic Forum has released The Future Jobs report, discussing the implications of the changes facing employment, skills, and recruitment. 34% of respondents see mobile internet technology and cloud computing being the key drivers of technological change, enabling more efficient delivery of services and opportunities to improve labor productivity. While the other 26% see progress in computing power and big data will be the driving factor for change in the world of work, as organizations-and with economic expansion- seek to realize the full potential of technology in helping understand the vast amount of data. This clearly demonstrates the need for educational institutions to equip students with the right skills to meet the demands of the future [3].

7) *Barriers to digital transformation*

According to Digital transformation does not come without challenges, and there are many barriers to its integration in a business. Respondents of the survey were asked to identify the most significant barriers towards adapting to digital transformation within the coming years; 54% of them named their organisation’s structure as the biggest challenge. A very similar percentage (52%) named resistance to change as a key barrier to digital transformation in their business, while other responses included a lack of digital skills, resources and budget. The resistance to change is probably the most interesting challenge identified, as it indicates that some organizations are not receptive to new trends. This may require further collaboration and training to help them understand the benefits of digital disruption to their services. Moreover, the lack of resources, budget and skills cannot be overlooked, with the latter creating the need for everyone to develop the right traits that make a digital leader. According to respondents, the most important skill that digital leaders need to have for 2020 is the ability to work with data and analytics, with focusing on specialized data skills ranked third in the list. The ability to collaborate was the second most popular skill, with respondents clearly recognizing the need for more people in their organization to develop the right skills to embrace digital transformation. Process automation, UX design, mobile and social knowledge were all identified as skills that will be in higher demand within the coming years, highlighting the variety of traits required to get closer to digital transformation.

The Microsoft Asia Digital Transformation Study stated that while there is no doubt that digital transformation will bring significant benefits for both businesses and employees, the path to digital transformation has been slow, given that only 23% have a full digital strategy in place. According to education leaders in the study, the top barriers to digital transformation faced by Asia’s education industry are, in order of priority:

- Cyber threats and security concerns

- Lack of organizational leadership skills to ideate, plan and lead execution
- Lack of digitally skilled workforce
- Data privacy concerns
- Uncertain economic environment

Generation Z are children born from 1998 to 2009 who live in the digital age. Character that stands out in the Z generation, which is like a challenge. "Generations Z everywhere are of the same character, that is, their lives are always involved with technology and lack of activity that involves other people directly. The daily life of Z generations children usually use earphones or mobile phones that stick to his ears either at home, as well as public places. Generational Z Kids no longer physically involved with others, but more through cyberspace. In order to deal with Generation Z, a lecturer must be creative and innovative in following the times and technological trends. Don Tapscott (2009:11-16) in his book "Grown Up Digital" divides population demographics into the following groups [8]:

TABLE II. GENERATION SHARING TABLE ACCORDING TO DON TAPSCOTT'S RESEARCH.

No.	Names	Born	Note
1	Pre-Baby Boom	1945 and before	
2	The Baby Boom	1946 – 1964	Baby Boomer Generation
3	The Baby Bust	1965 – 1976	Generation X
4	The Echo of the Baby Boomer	1977-1997	Generation Y, Net Generation, or Millennials
5	Generatin Net	1998 – 2009	Generation Z
6	Generation Alpha	2010 – 2025	Generation A

B. Impacts

The industrial revolution 4.0 is an integration of the use of the Internet with production lines in the industrial world. Changes occur in the world of industry today which marked the changing business climate and an increasingly competitive industry due to the development of information technology.

The development of industrial and postindustrial societies in some parts of the world, especially in mainland Europe and America, has been widely influential to global society around the world, thus changing their life order in all spheres of life, which is then called globalization [9].

The industrial revolution caused by Globalization. Globalization is a process of global interconnection between individuals, nations and countries as well as various social organizations. The process occurs because of the tools of communication and transportation are technologically advanced, coupled with political and economic forces and socio-cultural values that affect each other. One particular cultural value, can not be closed from other cultural values although protected in such a way, so there is cultural exchange between the cultures of one community with other communities. Among the factors driving globalization are first, human nature as social homo; both economic needs, and the

third availability of modern means of communication and transportation [10].

These three factors are closely related to each other and encourage the formation of various regional and global cooperation, especially in the economic field, such as ASEAN (Association of South-East Asian Nations), AFTA (Asian Free Trade Area), dan WTO (World Trades Organization).

Globalization causes competition in the economy increasingly hard and tight, but always within the scope of cooperation. The increasingly popular term is "compete with", which implies the existence of cooperation, rather than "compete against" which implies free competition as it did for decades earlier in the 20th century.

Globalization and digital transformation in education, is a long historical process. The era of globalization and digital transformation in the world of education, gives a double impact of positive impact (profitable) and negative (adverse) impact. The beneficial impact, is to provide the widest possible cooperation opportunities in the field of education to the countries of the world. But on the other hand, if Islamic higher education institutions are not able to compete in the field of education with other countries, because of the weak quality of human resources for example, then the consequences will harm the Indonesian nation itself.

There are at least four major complex problems facing colleges in this global era [11].

First, the challenge to increase added value in order to improve national productivity, growth, and equity of the economy as an effort to maintain and promote sustainable development.

Second, the challenge of conducting comprehensive and in-depth study and research on transformation of community structure from traditional to modern, from agrarian to industry and information, and how its implications for human resource development in universities.

Third, the challenge in the increasingly tight global competition, namely how to improve the competitiveness of the nation in producing karyakarya of superior quality as a result of mastery of science and information and information.

Fourth, the emergence of new colonialism in the field of science and technology, information, and economics to replace political colonialism. All of these problems and challenges require Indonesian human resources, especially the intellectual community of higher education, to enhance and broaden knowledge insight, insight of excellence, professional skills, and managerial skills and quality. The next question is what should college do to face these challenges?

In the era of the free market in the 21st century, universities are required to perform several agenda activities as follows [12].

First, anticipate globalized employment competition, which enters with foreign investment as a consequence of the implementation of the ASEANAFTA agreement (beginning in 2002), the WTO-GATT and APEC (beginning in 2010). To anticipate this college should be able to guarantee the results of

students in various fields of professions to obtain a professional certificate as a condition to obtain the right to work in accordance with the competence of expertise learned in college.

Secondly, universities should be able to prepare students with competencies assessed not only on the mastery of knowledge and skills, but also mastery of attitude and morale, communication skills, interpersonal, leadership, teamwork, problem analysis and problem solving synthesis, discipline, technology information, computer utilization, work flexibility, able to manage problem blurriness, can work in various cultures, understanding globalization, trained in work ethics, and mastering foreign languages as the second major language.

Third, universities are expected to organize more humane programs. Humanist meanings in this case provide greater opportunities for members of the community to benefit from the provision of education, quality assurance of education, and the urgency of community needs, answering questions on equal rights, fulfilling international perspectives, equal education costs.

Fourth, the curriculum as a guideline for the implementation of the study program should be able to maintain harmony between programs organized with the aspirations of the community. This can be done by eliminating unboundedness and avoiding the excessive burden of the learning process, but in general it can characterize the specific tasks and missions it carries for each level of education.

Fifth, the implementation of higher education is expected to accommodate the politicization of education, lifelong learning needs, internationalization of higher education in the meaning of reconvergent phase of education [11]. Given the enormous potential negative impacts faced in the field of values education in higher education and university development, globalization is a considerable challenge that is being and will be faced for the future. Furthermore, we can say that globalization is a strategic challenge of higher education today. Strategic because it concerns the survival and continuity of the mission carried by higher education. Therefore, we should especially be involved in higher education anticipate the possibilities that will occur in the future. Let's clean up the line of straightening soft to meet the uncertain future. The past has achieved the new let's reach. Thus, the era of globalization is a big challenge for education.

In this context, challenges of education in the face of globalization and digital transformation are:

First, the challenge to increase the added value, that is how to improve the national work productivity and growth and equity of the economy, as an effort to maintain and improve sustainable development (continuing development).

Second, the challenge of conducting comprehensive research into the era of reform and transformation of the society's structure, from traditional agrarian societies to modern-industrial-communications and information society, and how its implications for the improvement and development of the quality of human life [11].

Third, the challenge in the increasingly tight global competition, which is to improve the nation's competitiveness

in producing quality creative works as a result of thinking, discovery and mastery of science, technology and art.

Fourth, the challenge to the emergence of new invasion and colonialism in the field of science and technology, which replaces the invasion and colonialism in the political and economic fields. All these challenges require the existence of qualified and competitive human resources in those fields in a comprehensive and comparative manner with superior vision, professional skills, visionary, confidence and high self-esteem and have adequate skills as needed and market bargaining power. These capabilities must be realized in a quality educational process, so as to produce a broad-minded, superior and professional graduate, which can ultimately be an idealized example for the benefit of society, nation and state. The next question, what should the education world do? To answer that, it seems that we need to look at the educational framework in a national context. So we can prepare the right strategy to face a challenge as well as opportunity. In quantity, the development of the number of Indonesian formal education students from the Kindergarten level to the level of university has made significant progress.

The impact of digital transformation is of course also relevant to universities. The recently released McKinsey report noted that the title became a "marker" for recruitment, even in the digital age; however, there seems to be no direct relationship between the college level and professional success. Another interesting point of view about the current skill gap is the lack of specific skills.

According to the Manpower Group study conducted in 2016, the inability to find the right individual for a job is a sixth serious problem, out of nine of the biggest global economic problems today. Similarly, 40% of the world's companies report a lack of specific skills, which ultimately affects applicants' availability, technical skills, and experience; which is the reason why many positions in an unfilled company,

This asserts that the most valuable resource in this digital age is data. With the increasing need for data, the demand for new competencies-analysis, machine learning, aid intelligence, cyber security, and others-will also come. Then the highlight is whether the educational institutions are now prepared to meet the needs of the future?

1) *Changes to management:* Managing Islamic colleges can no longer be of origin and carelessness. Why is that? Universities are required to contribute more significantly to the economic development and advancement of society through innovations that have a real impact and are located downstream of the research flow. Higher Education should be able to educate students to empathize with the condition of the nation and country, in addition to having high academic competence, the science must also be useful for others, in the framework of building the nation and country. Future challenges are increasingly complex and growing so rapidly in society, we encourage Universities to develop strategies that must be more progressive in studying and applying science

and technology, if Higher Education wants to continue to contribute in development at national and global level.

2) *Changes in learning orientation from teachers to students:* The challenge of the millennial generation that is currently a student, must be a serious study material. The leaders of Islamic universities should see this phenomenon as a challenge that must be answered through strategic, effective, efficient and productive methods. Islamic values that must always be the color of learning in Islamic religious colleges, coupled with the changes and developments of a very fast time should be anticipated also wisely and intelligently. Lecturers always have an important role in Higher Education, lecturers must be able to see the potential of students, guiding the students to find their true identity in order to achieve future success. If the lecturers can continue to improve their scientific knowledge, as well as become a motivator for the students, it is not possible we can create qualified graduates and can be a good leader because this country needs the figure. Once again, each of us has a responsibility for change to realize a better generation in the future.

3) *Changing the values, norms, and culture:* Like the two sides of the blades, the rapid advances experienced by technology are not only bring a positive impact, but also bring a negative impact on society. Whether we realize it or not, it has changed some of the values, norms and practices prevailing in society. In Indonesia, which is a country with a thick Eastern adat, the average society is very upholding values, norms and customs as an asset to preserve the region and its culture for generations. The values and norms in question are manners, respect for the elderly, mutual respect for each other, the culture of mutual cooperation, deliberation, and others that characterize the Indonesian people. The habit of succumbing, respecting the merits of others, respecting the property of the people is a picture of how the Indonesian people are a nation that highly upholds its culture. For Indonesians culture is a bridge to success, culture is a place to find solutions if there is a problem, culture is a treasure that is priceless.

4) *Graduates must be digital literate:* In order for the graduates to be competitive, the curricula needs a new orientation, because of the Industrial Revolution Era 4.0, not only the Old Literacy (reading, writing, & math) as the basic capital to take part in society. Graduates who are competitive, must have the ability:

- Literacy Data: Ability to read, analyze, and use information (Big Data) in the digital world.
- Literacy Technology: Understand how machines work, technology applications (Coding, Artificial Intelligence, & Engineering Principles).
- Human Literacy: Humanities, Communication, & Design.

C. Analysis

What is the condition of Islamic Higher Education in Indonesia? Here is the recap obtained on the number and distribution of PTKI in Indonesia.

TABLE III. NUMBER PTKI BY INSTITUTION'S TYPE.

No.	Type of Institution	Total
1	Academy	1.090
2	PolyTechic	259
3	College	2.482
4	Institute	194
5	University	576
6	Community Academy	17
	Total	4.618

^b Source: <https://forlap.ristekdikti.go.id/perguruan tinggi/homegraphpt>

TABLE IV. THE NUMBER OF ISLAMIC HIGHER EDUCATION BY TYPE.

No.	Type	State	Private	Sum
1	College	42	992	1.034
2	Institute	39	69	108
3	University	18	0	18
4	Academy	0	6	6
	Sum	98	1.048	1.146

^c Source: <https://forlap.ristekdikti.go.id/perguruan tinggi/homegraphpt>

TABLE V. THE NUMBERS OF ACTIVE STUDENTS IN ISLAMIC HIGHER EDUCATION.

No.	Status PTKI	Man	Woman
1	State	143.036	236.531
2	Private	76.908	92.356
	Sum	219.944	328.887

^d Source: <https://forlap.ristekdikti.go.id/mahasiswa/homegraphjk>

If seen in the table above, how many students who enrolled in PTKI Negeri and PTKI Swasta very much and potential to be empowered in order to have maximum results.

But it must be admitted that quality still lags far behind other countries, both developed countries, and even ASEAN member countries [12]. Educational institutions are required to ensure the quality of graduates in accordance with the standards of global competence at least able to prepare students compete to compete with foreign workers, so that the can anticipate educated unemployed. Here it must be admitted, educational institutions are not ready to face the era of free markets.

There is still much to be done; whether the system or the people involved in the system. The Government, as the policy holder of Education should make a big contribution in the success of the education program.

Because among the weaknesses of the education system in Indonesia is due to the weak political will the government in dealing with this educational issue. There are at least nine weak points in the application of education system in Indonesia:

- educational emphasis on cognitive aspects;
- evaluation patterns that leave behind creative, imaginative, and innovative thinking patterns;

- educational system that is shifted (reduced) to teaching;
- lack of learning interest in students;
- title or culture pursuing paper (diploma);
- practice and theory are less balanced;
- does not involve all stakeholders, communities, educational institutions, and governments;
- profession of lecturer just a scientific profession, not humanity;
- multidimensional national problems and weak political will of the government.

To anticipate the various weaknesses of education, the necessary cooperation of various parties. Not only educational institutions but the government must also be serious in addressing these issues in order for Indonesian human resources to obtain an adequate quality education rating. For that should be done things as follows.

First, the orientation of education should be more emphasized on the affective and psycho-motor aspects. That is, education is more focused on the formation of learner characters and skills or skill training, so after graduation they have no difficulty in finding a job rather than just relying on cognitive aspects (knowledge).

Second, in the process of teaching and learning teachers must develop a student oriented pattern so that the character of independence, responsibility, creative and innovative in the students themselves.

Third, the teacher must really understand the meaning of education in the true sense. Not reduction limited teaching. That is, the learning process of learners aim to form a personality and mature students not just transfer of knowledge but learning must include the transfer of value and skill, as well as the formation of character (character building).

Fourth, the need for coaching and training on improving learning motivation to learners so that children will have a high learning interest.

Fifth, should be instilled a pattern of process-oriented education (process oriented), in which the process is more important than the results. Education must go on a substantive rail of science. Therefore, culture in the education-oriented world of education (formalities), such as the pursuit of title or title among educational practitioners and educators should be abandoned. What should be put forward in our study now is the mastery of knowledge, intellectuality, and competence of science and expertise it has.

Sixth, the learning system at a vocational school may be applicable to public schools. That is by balancing the theory with practice in its implementation. So that learners do not experience the point of saturation of thought, and ready when required to apply his knowledge in society and the world of work.

Seventh, the need for comprehensive support and participation in educational practices, involving all interested

parties in education, especially the community around the school, thus facilitating access to education more widely among the community.

Eighth, the profession of teachers / lecturers should be scientific and truly "professional", not based on humanity. That is, the teacher is an unsung hero but teachers / lecturers should also be rewarded worthy of the struggle, therefore the salary and welfare must be considered by the government.

Ninth, the government should have a policy formula and consistency to accommodate all educational needs. One of them is to pay attention to education facilities by raising the budget for education at least 20-25% of the total APBN.

When we think about digital transformation for the education sector, we must start by knowing how people learn. This is more than implementing technology, but also addressing the paradigm shift brought about by the 4th Industrial Revolution.

1) Leadership

The success of any transformation (include digital transformation) depends on its leadership. In the digital transformation of higher education, vice chancellors and presidents play a more critical role due to the magnitude of change, the degree of disruption and the power of inertia.

Digital transformation requires new ways of working, not just new technology. The scarcest resource in any organisation is not necessarily technological know-how, but leadership. Today's leaders need to be able to sift through an avalanche of digital initiatives, manage accelerating innovation cycles, and reshape the organisation around new approaches.

Leadership and management are two terms that can not be separated within an organization [13]. Any organization of any kind must have and requires a leader and top management (top management) or top manager who must undertake leadership or management activities for the whole organization as a whole [14]. Likewise in an effort to improve management accountability, leadership plays a very strategic role.

2) Learning, Curriculum and ICT

Digital transformation needs to be started by enabling educators to create new learning environments-which allow failure as part of the learning process. In essence, the slogan for the new class should "fail faster, fail quickly, and often fail".

For Islamic Higher Education, Leaders must have a commitment to empower each student to achieve more. How should this happen?

The first is to empower every educational institution by providing the appropriate syllabus and training for students and teachers, so that they can create a world of the future. We see it holistically on four different pillars: engaging students, empowering educators, optimizing operations, and transforming learning-all supported by our fundamental commitment to delivering a trustworthy program that the organization can run.

When the tuition fees are more expensive, the number of lecturers is limited and the number of students increases then it

is necessary to utilize ICT to increase productivity (effectiveness & efficiency) while maintaining quality.

Therefore, Islamic Higher Education in Indonesia is obliged to conduct Reorientation of Curriculum by prioritizing new Literacy ability (data, technology, humanities) to be further developed and taught. In addition, it is necessary to strengthen the activities of extra-curricular activities for leadership development and work in teams to continue to be developed. Another thing that should be emphasized is about Entrepreneurship and internship spirit to be required in Islamic Higher Education. In supporting it all, Islamic Higher Education is advised to have a unit that specifically provides life-long learning services.

The next question we will ask is, how does technology come into play in offering educational institutions that are beginning to adopt digital technology?

- Improve efficiency and performance
- Improve student learning outcomes and success
- Advancing research and innovation

By focusing on these three areas, Islamic Higher Education will be able to take advantage of cost-efficiency, save time while broadening access to affordable learning, encouraging more effective learning through better student and teacher engagement. The main goal is to enable stronger collaborative research across all faculties and institutions.

The digital era has come and will continue, the impact will be widespread. We encourage educational leaders to think and strategize about the goals and objectives of their current digital transformation. Not only to empower educators better, but to engage students in order to be "prepared for the future", and well equipped to participate in a technology-transformed world.

Mastery and adaptive to the latest technological developments into competing capital in the management of Islamic Higher Education. Internally, the mastery of technology to support the operational activities of Islamic Higher Education to be more effective and efficient, because it can simplify, simplify, and control the process with limited human resources. With technology, an Islamic Higher Education is able to streamline the process of applying for credit, so that the credit and facilities that have been promised can also be enjoyed by customers. In addition, the quality of services provided to consumers (students, lecturers, and other stakeholders) can be better, from moving data from application form to system (data entry), analysis of customer data (credit analysis), to card delivery. Decrease in operational costs can be done significantly. The technology in the information management system will also make it easier for Islamic Higher Education to store, record and analyze the data of the Students / Lecturers, thus assisting the university in maintaining customer relationships, addressing consumer complaints better, and developing products / services more suitable for consumers. Therefore, nowadays there are various types of credit with different features and facilities that represent the interest and lifestyle of its market segment.

When we think about digital transformation for the education sector, we must start by knowing how people learn. This is more than implementing technology, but also addressing the paradigm shift brought about by the 4th Industrial Revolution.

Digital transformation needs to be started by enabling educators to create new learning environments-which allow failure as part of the learning process. In essence, the slogan for the new class should "fail faster, fail quickly, and often fail".

3) Competence in Information, Comunication and Technology (ICT)

The education system is very dependent on the quality, as well as the goods are said to be of high quality and have a high selling value because it has a good quality. It is ironic if we look at the fate of educational institutions in Indonesia based on the quality of education that lies in the last order among 12 Asian countries studied by The Political and Economic Risk Consultancy (PERC) in 2001, far below Vietnamese (6).

The PERC survey results refer to the level of quality of our graduates of education, with arguments, to get a quality workforce of course the education system must also be qualified. A non-qualified education system affects the low human resources generated, which in turn are incapable of bringing this nation "sitting equally low and standing equally high" with other nations. Weak human resources education as an excess system of education that is not qualified, raises the phenomenon of the workers (worker society) like mushrooms in the rainy season. This is certainly different from the good Education system, which produces employee society. Briefly displayed some university rankings in the world.

Furthermore, Toffler (1972) says, employee and worker is different. (1) the employee has the character of continuously improving technical skills including his skills, while the worker uses fixed skills and knowledge; (2) the employee can control the instrument (machine), while the worker is relatively controlled by the machine; (3) the machine of honor to the employee, while the worker is to the machine; (4) the employee is basically unnecessary to be supervised but only the division of responsibilities, while the worker must be supervised through organizational lines; and (5) the employee has the means of production that is information, whereas the worker does not have it. Therefore, the orientation of the employee society should be put forward in order to prepare the expert workforce in the field of technology mastery. Because in this third millennium we are faced with major changes in economics, science and technology and social culture. We should learn from Japan and South Korea. Although both countries are poor in natural resources (SDA), but because of strong human resource support, the two East Asian countries become the pioneers of the world economy, especially in Asia [15].

Thus, education plays an important and strategic role in producing human resources that will build this nation. This attitude does not necessarily undermine the role of other sectors in nation building. The existence of future attitude will always be important and strategic is based on the empirical consideration that during this and also for the future, the existence of qualified human resources in the widest sense will

increasingly needed for nation-building. Quality of human resources accompanied by strong morality and integrity of nationality: not corrupt, honest, creative, anticipatory and having a vision for the future is assumed to accelerate this nation out of a protracted crisis. In comparison, with the support of strong human resources, our neighboring countries like Malaysia, Thailand and the Philippines are progressing rapidly in an effort to get out of the crisis like our nation. Even for the case of Malaysia, the country is able to recover (recovery) economic conditions without the need to rely on IMF assistance. Furthermore, in the economic sector, the rapid development of national, regional and international economies such as capital markets, stock exchanges, AFTA, NAFTA, APEC and other international economic agreements, now and in the future will be the need of our nation.

The order of life in society, nation and state, will also experience a shift. Individualistic behavior will grow more fertile than a sense of togetherness. Meanwhile, democratic life will be more accepted by society than authoritarian behavior. Egalitarian behavior vertically and horizontally will be more prominent than the feudal and paternalistic. Openness (transparency) will be accepted by the community. On the other hand, the spirit of nationalism and universality should be able to bring the nation forward.

Students who are studying must be prepared to face the big challenges that occur in the era of Industrial Revolution 4.0 that occurs today. This new pattern change has the effect of creating new job positions and skills and the loss of some old positions.

IV. CONCLUSION

The industrial revolution 4.0 is an integration of the use of the Internet with production lines in the industrial world. Changes also occur in today's industrial world marked by the increasingly competitive business and industry climate due to the development of information technology. The digital transformation in the process of the Fourth Industrial Revolution is built upon the Third Industrial Revolution, also known as the Digital Revolution, which is characterized by the proliferation of computers and automation recording in all fields. Automation in all areas and connectivity is a tangible sign of the Fourth Industrial Revolution. One of the unique and special markers of the fourth RI is the artificial intelligence (AI) application. The transformation of the Fourth Industrial Revolution is different from its predecessors in several aspects. First, innovation can be developed and disseminated faster than

ever. Secondly, there is a significant decrease in marginal cost of production and the emergence of a platform that combines several concentration activities across multiple sectors and increases yield aggregate. Third, this revolution takes place on a global level and affects, and is shaped by, almost all countries. As a result, this fourth industrial revolution will have a very systemic impact in many places. One of the areas most affected by the Fourth Industrial Revolution is the field of Higher Education. Digital transformation is fundamentally changing people's lives and the ways companies do business, include in Islamic Higher Education.

REFERENCES

- [1] K. Schwab, *The Global Competitiveness Report 2016–2017*. Geneva: World Economic Forum, 2017.
- [2] UNDP, *Human Development Report 2016, 2017*.
- [3] World Economic Forum, "The Future of Jobs Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution," *Growth Strategies*, pp. 2–3, 2016.
- [4] A. Hayes and D. Setyonaluri, *Policy Memo Taking Advantage of The Demographic Dividend in Indonesia: A Brief Introduction to Theory and Practice*. UNFPA, 2015.
- [5] L. Moleong, *Metode Penelitian Kualitatif*. Bandung: Remaja Rosdakarya, 2012.
- [6] C. Kanaracus, C. Sato, and R. Wang, *Report: Survey Constellation Research 2017 Digital Transformation Study New Data Shows AI and IoT Are Driving Digital Transformation Efforts*, 2017.
- [7] T. Litsa, *The rising opportunity of digital transformation: What businesses need to know*, 2017. <https://www.clickz.com/the-rising-opportunity-of-digital-transformation-what-businesses-need-to-know/110987/>
- [8] D. Tapscott, *Grown up Digital: How the Net Generation is Changing Your World*. USA: McGraw Hill, 2009.
- [9] U. Beck, *What is Globalization?* Cambridge: Polity Press, 2000.
- [10] P. Scott, (Ed.). *The Globalization of Higher Education*. Buckingham: Open University Press, 1988.
- [11] K.E. Renner, *The New Agenda for Higher Education*. Calgary: Detselig Enterprises, Ltd., 1995.
- [12] M.D. Ibe, *Science Education: Moving on to 21th Century*. Paper presented at The Regional Workshop on Strategic Planning in Science and Mathematics Education. RESCAM, Penang-Malaysia, 1995.
- [13] S. Abbas, *Manajemen Perguruan Tinggi*. Jakarta: Kencana, 2009.
- [14] A.A. Wahab, *Anatomi Organisasi dan Kepemimpinan Pendidikan (Telaah terhadap organisasi dan Pengelolaan Organisasi Pendidikan)*. Bandung : Alfabeta, 2007.
- [15] A. Toffler, *Future Shock*. London: Pan Book Ltd., 1980.