Original Article

Antecedents of Higher Education Quality in the Era of Industrial Revolution 4.0

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Abstract: The fourth current disturbance in our center is higher education quality. It invites various consequences for our lives, industry, and high-level training. This article endeavors to dissect the provokes it gets to high-level training in Indonesia. By utilizing and breaking down the positioning of Indonesian advanced education foundations (HEIs) and corresponding with several understudies, we presume that there are six essential or even progressive changes that Indonesian HEIs should embrace to endure the difficulties of the Fourth Modern Upset. These are unrests in mentalities, general and scholarly interests, educating and learning, educational programs, proficient turn of events, and advanced education administration. The result from this explanatory research displayed no connection between the quantity of understudy and the actual positioning, so one of the six pointers should be reexamined in Indonesia and more centered around how to oversee schooling in Indonesia.

Keywords: higher education quality; industrial revolution; world university ranking; Indonesia context.

1. Introduction

Higher Education in Indonesia has gone through many phases, not all of which can improve themselves (Abidah, 2020). In summary, the history of Indonesian education is quite sad, primarily because the Netherlands colonized this nation around 350 years ago. After that, Indonesia was also under the influence of the Japanese colony, which subsequently, because its independence was achieved through a revolution, the transfer of power became an obstacle to sparking a normal national education (Cribb, 2008). In the era of independence, even challenges to breakthroughs in the field of national education continue to exist and arguably have not diminished. The impact of this is that there needs to be more if any, science, skills, and education experts in the era of independence. Likewise, management experts, governance, and other expertise need to be in place for the emergence of an educational strategic plan (Cummings & Kasenda, 1989; Welch, 2007; Rosser, 2018). Like it or not, Indonesia's 'modern' education system,

especially higher education, is a legacy of the Dutch colony, so its success is very much dependent on the success of the government and Indonesian tertiary institutions to adapt the state of this foreign colony culture to Indonesian culture or vice versa (Brenner, 2012). Of course, there are many ways to evaluate this success, but engagement or world ranking is legitimate.

The quality of higher education in Indonesia is growing slowly (Kuntoro & Al-Hawamdeh, 2003). In early June 2019, QS World University Ranking published the annual ranking of world universities for the year 2018-2019 period, and the position of Indonesian universities did not improve either. One is Universitas Indonesia (UI), ranked among the 10 best universities in ASEAN and has even declined. In the QS World University Ranking, UI ranked 292 out of 1,233 universities in 151 countries worldwide. Its number has dropped compared to 2017-2018, which was at 277. Other universities need to catch up behind. Reflecting on the QS World University Ranking assessment, at least six crucial indicators in the ranking must be considered: academic reputation, graduate reputation, faculty and student ratios, scientific journal citations, international faculties, and international students. During this time, the ranking of the QS World University Ranking was also used by Kemenristekdikti as one of the benchmarks of universities in Indonesia towards world-class universities. If the government is serious about pushing for Indonesian universities to be included in the world's top 500, a number of these indicators must be considered.

All universities compete to offer superior products at home and abroad. Altbach (2004) stated that the expansion of higher education can be analogous to a store or company that can open branches. It is also natural for universities to open branches in other countries. For example, some European universities have opened branches in Asian countries such as Malaysia and Singapore. Another example is China, where foreign universities competing to enter the Chinese market. It is undeniable that universities are part of the service sector, which, of course, seeks a potential market with the fulfillment of quality requirements. Measuring world-class quality according to international accreditation and QS World University Ranking (QS-WUR) uses 6 indicators: Faculty/ student ratio. In Indonesia itself, the student body is still a big problem in tertiary institutions. Indonesia is four a large country with a population of around 260 million and is multiculturally divided into islands separated by distance, space and time. This large population is in the age range of 15-64 years, which is called age productive.

A high population level and a high productive age make the number of students also high, which results in a ratio of students the body often does not meet the specified quality indicators. The world ranking was also not achieved as well as the fact in 2019, Indonesia's ranking declined, contradicting the ranking results in Indonesia, a Chinese country where populations of people with high productive ages find higher education ranks in the world-class ranking. Another fact is that Singapore's population is low but high ranks.

Table 1. Comparison of World Ranking and Population of Higher Education

No.	Country Origin	Population (Million)	World Rank	Differences from Nanyang UT	Differences from Universiti Malaya
1.	Singapore	5.6	11	-	-
2.	Malaysia	31.5	114	103	-
3.	Indonesia	266.8	277	266	163

Table 1 shows that the age difference between Singapore and Malaysia since their independence was insignificant, but the world ranking of higher education differed to more than one hundred ranking ladders. With Indonesia, Singapore's tertiary ranking difference is 266 on the ranking ladder and in Malaysia, 163 on the ranking ladder. If we consider the population of the three countries, we can see from Table 1 that a trend links the world ranking of education and the country's population. The more the population, the lower the world ranking of higher education. If we use correlation (the Microsoft Excel function "Correl"), we find a correlation or similarity between population and world ranking of higher education is 0.954, a very good correlation number. We can conclude that the world ranking of a country's higher education depends on the country's population. However, we know that the conclusions based on statistical tests must be rechecked, especially in this case where the amount of data is very limited (only three), and we do not consider data concerning other countries that may have the same population as one of the countries we are calculating. We also know that the size of the population is only one thing that must be considered. Still, there are many other things, such as the stability of government, the presence of experts, the type of government that allows new thinking, and the ability to implement new developments in the governance of education, research, and technology, which is the basis of higher education evaluation in the world today.

Referring to the history of the Industrial Revolution, we can see that the discovery of new energy and technology raised each event. Here, we use the original definition of technology, which is the application of science (scientific application). We can also observe from Figure 1 that new power also contributes to the emergence of several new technologies and production systems. Although the World Economic Forum (WEF) established 1784 as IR 1.0, it is a practical steam power engine, which has been realized since 1698, when Newcomen patented it. The Newcomen steam

engine was improved in productivity by James Watt, who patented the engine in 1781 (Wikipedia, 2018). It means that IR 1.0 was made possible by Newcomen's findings about a hundred years earlier. Without Newcomen's findings, IR 1.0 might not have happened, although the use of Newcomen's steam engine was limited to pumping water only because of its engineering, which made it inefficient to be used for other things. In this revolutionary digital era, the increase of tertiary institutions worldwide is rapid. Currently, the number of tertiary institutions in Indonesia reaches 4,498, with 25,548 programs studied (Indonesian Ministry of Research, Technology and Higher Education, 2018). This increase requires universities to expand to continue to be recognized. An increase in the number of tertiary institutions will impact competitiveness among tertiary institutions.

Figure 1. History of Industrial Revolutions

Source: World Economic Forum (2007)

Only after there was an increase in Watt did the use extend to the production industry, transportation especially trains that sparked new professions, as well as mechanical engineering (in engineering locomotives, railroad cars, railroads), civil engineering (bridges, roads), and also architecture (station building, housing) and communication techniques. Herein lies the contribution to IR 1.0. But don't forget that IR 1.0 has only been incarnated about a hundred years after the invention of steam power technology. It is difficult to determine with certainty the beginning of each Industrial Revolution. Likewise, with IR 2.0, 3.0 and 4.0. Look at the acceleration of each revolution in Figure 1. Even the WEF hesitated in determining the exact time IR 4.0 occurred (seen with a question mark). So, IR 4.0 results from gathering knowledge, technology, and various previous practices and experiences, coupled with discoveries made possible by supporting technologies. Figure 1 displays the time gap from one Industrial Revolution to another is decreasing. IR 4.0, according to some observers, began fifteen or twenty years ago. It means it happened only 30 or 40 years after IR 3.0 and is quite different from the previous periods, which were around 100 years. It is an extraordinary acceleration and a sign that everything in IR 4.0 will also move quickly. Figure 2 below shows that the development period for IR and the degree of complexity also increased from before.
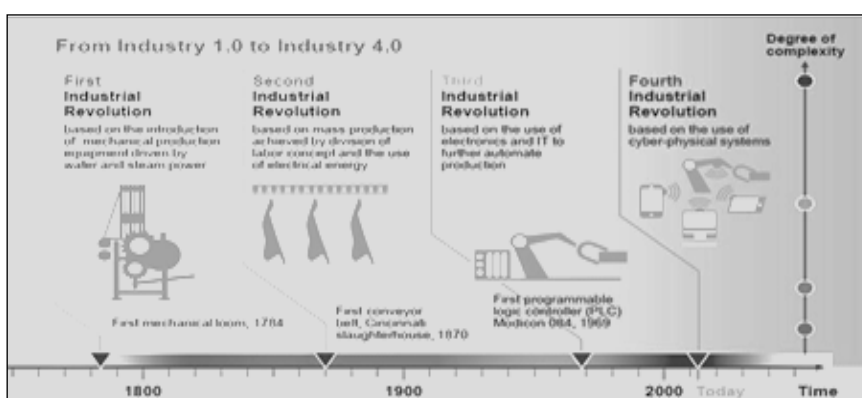

Figure 2. Development of Industrial Revolutions

So, two dimensions must be considered carefully through IR 4.0, namely acceleration and the increasing level of complexity. It has been estimated that with the presence of Artificial Intelligence, there has been a social transformation with a tenfold speed and a scale of 300 times the coverage compared to IR 1.0 (Yang & Gu, 2021). Contrary to competition that spread rapidly where technological advances make it possible for automation in almost all fields, new technologies and approaches combining the physical, digital, and biology will fundamentally change lifestyle and human interaction (Tjandrawinata, 2016). The education sector is growing slowly. Indonesia cannot avoid revolutionizing Industry 4.0 to affect the education world. It is emerging the internationalization of higher education. According to the

Minister of Research and Technology in 2018, there will be 5-10 foreign universities entering Indonesia (January 29, 2018, quoted by Antara). The Minister of Research and Technology exemplifies higher education institutions operating in Indonesia: The University of Cambridge from the United Kingdom, the University of Melbourne, and the University of Queensland from Australia. Due to competition issues, enhancing the quality of higher education in Indonesia is becoming a priority. Both the government and private sector in education have already prevented this from emerging in the Revolution 4.0 era. There is no linkage between those strategies. In higher education, the government and private sector must seriously develop a quality assurance program and implement a complete quality assurance cycle followed by an international accreditation program for programs study and units implementing higher education activities such as majors and departments.

The question is whether the number of students correlates with the quality in higher education that emerges as the number of universities worldwide goes up and down. How should higher education, especially in Indonesia, respond to these results if not correlated? From that point of view, this research aims to test the correlation between the number of students (student body) and the rank in world-class universities in the 400 universities listed by QS World Ranking. This study aims to identify the effect of the 4.0 Industrial Revolution and the number of populations to QS world ranking in Higher Education in Asia and to answer the fundamental problems of the world of Education in Indonesia.

2. Literature Review

2.1. Revolutionary Industry 4.0

The term "Industrial Revolution" was introduced by Friedrich Engels and Louis-Auguste Blanqui in the 19th century. This industrial revolution is ongoing from time to time. It can already be called entering the fourth phase of 4.0 in the last decade. Phase change to phase makes a difference articulate on the useful side. The first phase (1.0) follows the invention of the engine (stressing) on the mechanization of production. The second phase (2.0) has moved to the mass production stage, integrated with quality control and standardization. The third phase (3.0) enters mass uniformity stages based on computerized integration. The fourth phase (4.0) has presented the digitalization and automation of integrating the internet with manufacturing (Leng et al., 2021). Tjandrawinata (2016) stated that the revolution industry is the proliferation of computer and note-taking automation in all fields. Industry 4.0 is the era of technological disruption. Automation and connectivity in a field will make industrial movement, and competition work is not linear. One of the unique characteristics of Industry 4.0 is the application of intelligence artificial or artificial intelligence. Schwab (2016) describes Industry 4.0 as a revolution that changes how you live, work, and relate to each other. Change is very dramatic and happens at a speed exponential. It is indeed a drastic change compared to the previous industrial revolution era. In the Industrial Revolution 1.0, steam and water-based mechanization and energy became a marker. The appearance of machines replaces human power and animals. Steam engine in the 18th century was one the highest achievement.

2.2. Revolution Industry 4.0 and Indonesia Higher Education

Related to industrial revolution things, we need to know the status of Indonesia in implementing technology. One way is to look at where the status of Indonesia is compared to its neighbors. Figure 3 below shows graphically the location of this matter.
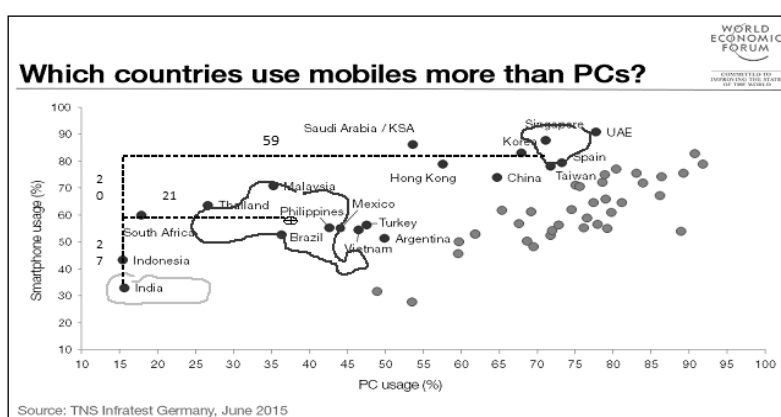

Figure 3. Use of smartphones and computers / PCs worldwide

Figure 3 clearly shows that Indonesia lags far behind its neighboring countries, which are about 21 million in PC usage and 27 in smartphone usage with Malaysia, the Philippines, Thailand and Vietnam, while even worse when compared to Singapore. Factors of population size, factors of country spread, economic factors and digital communication facilities play a major role in this picture. However, it should also be noted that the ratio of the use of HP / PC (lk 3) in Indonesia is much higher than the ratios in the neighboring countries (see red circle in Figure 3), which means the lack of possibility of new digital breakthroughs due to the limited use of computers / PCs / Laptop compared to HP usage. And if we pay attention to the most use of mobile phones in Indonesia is for social communication so that the needs of computers / PCs / laptops are also small. In short, Indonesian higher education, although better than in Egypt (where the aim of adding knowledge to Indonesian scientists was) is still far behind compared to neighboring countries. The causes of this lag must be further investigated but not in the research for this article, because here we only identify the status of Indonesian higher education. Lack of research at Indonesian Universities and the lack of lecturers / professors whose duties as researchers are determined by Law 14, 2005, is a major challenge that has become public secret and can be seen from the low level of the University Higher Indonesia ranks universities in the world that prioritizes research.

The teaching / learning method used at Indonesian Higher Education also becomes an obstacle in achieving critical thinking, the realization of empowerment and independence in the graduates. Because the cause can also be used as a separate study because it involves factors outside of higher education, including political factors. The impact of higher education thinking as it is today for such a long period of time, namely since the colonial era until about the end of the 20th century, is the reluctance and even reluctance of lecturers to try other ways of learning / teaching. It is also unfortunate that, in fact, the way of teaching / learning that has been used by Indonesian Universities, namely rote-learning or memorization, has been proven to be ineffective since the 19th century ago (Idrus et al., 2014). Together with learning, culture also plays a role that must be carefully considered.
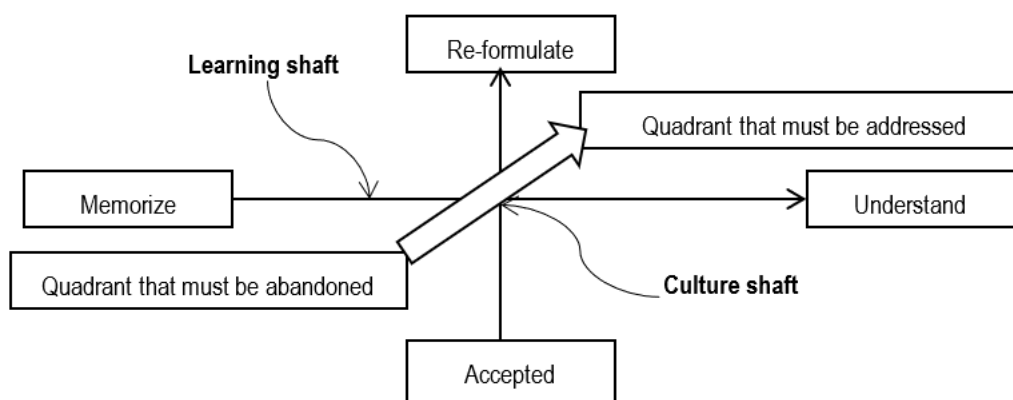

Figure 4. Relationship of Learning and Culture in higher education

Source: Harvey & Askling (2003).

Figure 4 shows the reciprocal relationship between these two important things. Here it is clearly illustrated that today education in general, and tertiary education, is in the southwestern quadrant where learning is done by memorization and a 'accept only' culture (without question, without critical thinking). Whereas what is desired to advance and improve education and higher education is located in the northeastern quadrant where learning is based on understanding (what is learned) and the skills to re-formulate (not originating accept) as well as the ability to conduct trials and further research adding knowledge or solving problems, putting it down on the cultural axis. The challenge in this case is how to depart ourselves from the red quadrant to the green quadrant. The appearance of machines replaces human power and animals.

Another thing to consider is the lack of use of English in Indonesia, especially in tertiary institutions, while most books and scientific materials, including publishing in international journals, are almost 80% written in English. In this case, Singapore, Malaysia and the Philippines are not constrained because indeed they still use language in general and in universities. It also appears that there are many Indonesian academics with post-graduate degrees abroad who do not apply their experiences from abroad after returning to Indonesia again. Is that experience directly about the results of his research abroad or about the education governance that succeeded their alma mater. Indeed we can understand that they have a specific task by being abroad, but only through observation or through conversation with other post-graduate candidates and lecturers there, they can gather information that will be useful for universities, such as the use of technology education, effective learning / teaching methods, departmental and faculty management and communication between academics, with post-graduate candidates and with students a degree with their degree. Thus it can be concluded that Indonesian lecturers sent abroad to do post-graduate work may not be equipped with messages

to open their eyes to these matters or indeed they have no interest at all to pay attention to matters relating to the profession and place their work. Menristekdikti (2018) explained the five competencies that Indonesian lecturers must have in this IR 4.0 era. Indirectly, the government says that Indonesian lecturers currently lack these five competencies. Of course, we must also accept that the competencies mentioned are only the minimum competencies that Indonesian lecturers must possess. The competencies referred to by the Indonesian Menristekdikti lecturers at least must include the following competencies:

[1] educational competence, - Internet-based competing (IOT) competence as basic skills in this era;

[2] competence in research, - competence in building networks to grow knowledge, research direction, and skilled in getting international grants;

[3] competence for technological commercialization, - the competence of bringing groups and students to the commercialization of the results of innovation and research;

[4] competence in globalization, - world-oriented competence without insulation, not stuttering towards various cultures, hybrid competence, namely global competence and excellence in solving national problems;

[5] competence in future strategies, a world that is easy to change and runs fast, wants the competence to predict exactly what will happen in the future based on shared and current information, as well as the inability to develop strategies to deal with it, by way of joint-lecture, joint - research, joint publications, joint labs, mobility and rotation staff, understanding SDG's direction and industry, and so on. "

The ability to identify and predict the final point of a plan, will certainly be very helpful in achieving the results of the plan. However, each competency identified by the Menristekdikti must be seen from the current situation of Indonesian lecturers, what are the obstacles to the desired competency so that the distance between the current situation and the point of achievement of the plan can be estimated. Obstacles and how to solve them must be sought, discussed further and researched by Universities - Universities which would certainly be directly involved, if they want to survive and save themselves from obsolescence. From the previous discussion, this study indicates that the challenge regarding the competence of lecturers is an enormous and clearly requires a completely new, even revolutionary thinking. This is necessary because a gradual solution and only emulating what others have done before, will not bring Indonesian tertiary education to the regional level let alone to the world level.

2.3. Interest Revolution

Examples of interests intended here are: interest in engaging in research, interest in empowering students, interest in looking for contemporary learning methods (according to the times), interest in deepening the ability to read, write scientific papers, articulation of words in English, use of devices current electronics and others that might not be known at this time. With the success of the attitude change program as discussed in section 4.1, implementation of the development of interests is expected to take place with only a few challenges. Associated with the interest-building program of interest, is the search for procedures, training components and the continuity of practice. Similar to the change in attitude, the formation and generation of interests also involves psychology and therefore experts in this matter must be included in order to find the best and effective way. This article does not intend to examine and discuss the formation and development of interests in a manner.

2.4. Learning Method Revolution

In this regard and referring to section 3.0, Indonesia is far behind other countries, so efforts to change learning methods become the top priority after changing attitudes and building new interests. With new attitudes and interests, efforts to change learning methods are expected to be much easier to handle. Along with changes in learning methods, changes in curriculum, changes in learning concepts and educational philosophy must also be reexamined and if necessary, also be changed in line with other changes that improve education and higher education. For example, Charles Sturt University (Buchan, 2013). changed his total technical education by eliminating lectures, eliminating examinations, requiring only 3 semesters to deal directly with the campus after which related to 4 times 1-year placement in the industry as cadet / cadet engineers where they participated in solving real technical problems. In the first three semesters they study online so that by the end of the period they are already at home and are used to finding information needed to solve a problem in practice and quickly. cooperation between universities and industry is certainly established in an agreement that can form cadets - cadets become knowledgeable and experienced engineers so that they can meet the interests of the industry on the first day of work, in full of complete confidence. Indeed, there are many and various other things that must be done in the planning and implementation so that they can achieve changes as has happened at Charles Sturt University. But the basis is the changes in attitude and interest that must occur before.

2.5. Curriculum Revolution

Although changes in learning methods can occur without curriculum changes, and vice versa, the impact of one change without the other changes will not be optimal in achieving revolutionary results. This article certainly can only discuss the curriculum in general and not specifically its contents or its history or its background philosophy. The important thing to identify is that the curriculums are usually engineered to be studied step by step, starting from basic to the most recent or most difficult. Undeniably, this method is based on the idea that knowledge must be obtained little by little from easy ranking to more difficult ranking. It happens because the curriculum engineering theories (Smith, 1996; ABC, 2018) knowledge is supposed to be tackled that way. Suppose it is said that the theories above are very appropriate for conditions where the growth of knowledge itself is indeed slow. In that case, education is guided by adding knowledge sequentially and gradually making sense. But now we are facing rapid and unpredictable growth. So, it is natural that curriculum changes differ from the methods theorized before this. Is it true that humans can only increase their knowledge gradually? Is it true that humans can only reach a high level of knowledge after understanding and mastering more basic knowledge? All of these questions must be answered, and their truth proven.

With the theories above, the curriculum generally has a sequential (sequential) or serial structure arranged one by one in sequence. For example, Mathematics III subjects are not given before graduating Mathematics II. So, to say this structure is a series or sequence structure. The real problems in the world usually require solutions that will use a variety of knowledge and skills that cannot be grouped into compartments just like that. Problems in the world also usually require knowledge from several levels at once. So, it is easy to see here that this sequence structure is unrealistic because it might not be used unless the graduate has fulfilled all the graduation requirements to the final level. The question is, will the graduate remember what he learned at the first level in tertiary institutions? Does the graduate survive four or five years as a student as a reasonable human being and be skilled in gathering his knowledge? Especially if without continuous practice. Finally, we can be sure that the structure of this sequence curriculum has not been suitable for a long time. With the rapid and diverse technological growth, we experience now, this sequence-based curriculum has become outdated. Parallel-based curricula provide much better expectations than sequential-based curricula.

In line with what? Equivalent or equivalent to the problem-solving needs being faced. It means that if we need any knowledge in solving a problem, this knowledge can be sought and understood by the problem solvers regardless of whether he has passed the examination of more basic knowledge. Thus, we can save a lot of time and energy that we do not need to spend to learn more basic knowledge if it is not needed. With this timely or just-in-time knowledge, where knowledge is sought for arising out of necessity, our understanding and memory of that knowledge will be far more perfectly attached than learning it without context or connection to something we are working on. As a method of learning, this method is certainly practical. What can be a question, especially for educational researchers, is whether this method can develop one's knowledge. Here, we return to the theories of education knowledge discussed above. Some will likely conclude that such an educational method is superficial and purely utilitarian. Here, knowledge of growth in all fields since the 3rd or 2nd Industrial Revolution is needed to prove the knowledge is outdated, while the successor now comes with high speed. In other cases, for example, sophisticated diagnostic machines such as MRI (Magnetic Resonance Imaging) have also spread everywhere, so the medical education curriculum must be changed massively to compensate.

2.6. Professional Development Revolution

Finally, we come to the leadership of universities because decisions at this level will determine the survival of universities in the era of RI 4.0. Higher Education - Higher Education in Indonesia requires a leadership revolution bearing in mind the current situation and situation of Indonesian Higher Education as reflected in the ranking of Indonesian Higher Education rather than the world described in section 3.0 above. There are many theories about the leadership and leadership of tertiary institutions in the literature. Still, although these theories can help in terms of tertiary education, they must be adapted to the disadvantages of the current Indonesian tertiary institutions. Collins (2014) expresses the general leadership situation of tertiary institutions, which can be used as a description of Indonesian tertiary institutions. He also suggested some proposals that were quite appropriate for Indonesian Universities. Among them, Collins said that College leaders for the 21st century must be interdisciplinary, broad-minded, must be able to communicate effectively, must be able to work in groups, must be able to carry out group research, be in contact with parties outside the faculty and outside of Higher Education and certainly have a view global but can implement according to what is needed locally. Colins (2014) also criticizes some existing myths regarding research and leadership.

In fact, during the transition to the new 21st century, Indonesian higher education began to be introduced with quite revolutionary changes in thought (Idrus, 1998). The mechanism proposed at that time was the improvement of higher education quality assurance (Idrus et al., 2000). An exploration of Indonesian people in 2100 shows the importance of planning for advancing culture and education, especially in an era of inevitable competition, which will continue to challenge (Idrus, 2003). Kusumastuti (2012) found 15 characteristics of effective Higher Education

leadership. Meeting these leadership requirements is the first step in a leadership revolution that is preceded by a revolution of attitudes. Looking at Indonesia's current state of academia, it is difficult to find elected leaders. This means that effective business will take a relatively long time. Secondly, a university must also spend a large enough amount of money to attract the necessary leaders. In line with this effort, effective selection criteria are needed. It also means that guidance on selection criteria must be taken professionally by involving scientists and management practitioners, entrepreneurs, education, technology and specific disciplines according to the type of University. Here lies the need for an organization, company, or in this case Higher Education, to have two independent leadership levels that work closely together. The top level is usually called governance and the second level is management with different roles and tasks.

In Indonesia, governance is the task of a foundation, while management is the task of a university's management leader or executive. In its work, the Foundation does not interfere with the daily affairs of the University and management also does not interfere in the Foundation's task of carrying out the leadership outline of the organization's direction. In short, the Foundation's tasks are limited to creating policies and visions while the management's task is to carry out the Foundation's policies as well as possible and as much as possible. For each of them to carry out their duties to the best of their abilities, all members must consist of people who are truly experts in their fields, able to link their expertise to tertiary education, to the needs of industry and society and to the future expectations of students. As for the foundation, a broad-minded person is needed, high articulation ability in thinking and idea generation, and high integrity in implementing and maintaining policies according to the will and ethical and moral standards that apply in society. Indeed, in Indonesia the Foundation and Management are formed side by side, but observations in general show that the reach of a Foundation is limited because most of its members are university shareholders who are likely to be more concerned with profits rather than thinking about the future of higher education. Whereas in developed countries the membership of the Foundation (or sometimes called the Council or Board of Directors) is engineered to include as much part of the community as possible. For example, in New Zealand, the Council of Higher Education - Higher Education has representation from industry, government (central and regional), the Maori community, and student associations. Whereas management is filled with professional people.

2.7. Role of Lecturers in Industrial Revolution 4.0

In the era of the industrial revolution 4.0, the lecturer profession is increasingly competitive. In this era Lecturers have more demands, both in their competence and ability to collaborate research with various parties at the world level. There are at least five lecturers' qualifications and competencies needed in the industrial revolution era 4.0.

1. Educational competence, Internet-based competence of thing as basic skills.
2. Second, competence in research, competence in building networks to foster knowledge, research direction, and skilled in getting international grants
3. Third, competence for technological commercialization.
4. "Lecturers must have the competence to bring groups and students to commercialize technology with the results of innovation and research,"
5. Fourth, competence in globalization, a world without insulation. Namely lecturers are required not to stutter about various cultures, hybrid competencies, namely global competence and excellence in solving national problems.
6. fifth. competence in future strategies. Where the world changes easily and runs fast. "So that they have the competence to predict exactly what will happen in the future and its strategy," he said.

2.8. Student Body

Student body is the capacity of the program study for accommodate the number of students in the education process based on the availability of human resources, learning infrastructure and laboratory in higher education (Schuetze & Slowey, 2013).

2.9. World Ranking

QS World University Rankings is an annual university ranking publication conducted by Quacquarelli Symonds (QS). QS World University Rankings, formerly known as THE-QS World University Rankings, worked with Times Higher Education (THE) magazine to publish international league tables from 2004-2009 before the two began announcing their own versions. QS then chose to keep using the existing methodology while THE adopted a new one. The QS system now consists of a whole and also consists of global ranking subjects, along with five independent regions (Asia, Latin America, Europe and Central Asia, the Arab Region, and BRICS) (Samarasekera & Amrhein, 2010). This is the only international ranking that has received approval from the International Ranking Expert Group (IREG, 2016) and of the type seen as one of the most widely read, along with the Academic Ranking of World Universities and Times Higher

Education World University Rankings (Altbach, 2010). However, undue allocation of burden for subjective indicators and highly fluctuating results is the main criticism of this ranking.

Figure 5. Research Framework

Then, the researcher proposed the statistical hypothesis is the number of students in Higher Education is correlated with the World University Ranking.

3. Methodology

This research is explanatory research used a basic bivariate correlation Pearson on the grounds that there is a correlation between two factors where in this exploration the autonomous variable is student body and the needy variable is the world class ranking intention. The populace in this exploration are higher education in the world that listed by QS World Ranking. The sample of this exploration was 400 universities listed by QS World Ranking published in the year of 2018-2019. The data testing run by SPSS software version 24.0.

Table 2. World University Ranking Correlated with Student Body

Ranking		Scale	Student body	Scale
1-80	Excellent	5	6823 -16 687	1
81-161	Very Good	4	16688 -26551	2
162-242	Good	3	26552 - 36416	3
243-323	Good Enough	2	36417-46 281	4
324- 424	Enough	1	46 282 -56144	5

Source: World Class University Ranking Published (2018-2019)

4. Results and Discussion

Table 3. Result of the Correlation Testing

		World Class Ranking
Student Number	Pearson Correlation	0.004
	Sig. (2-tailed)	0.942
	N	400

Table 3 shows bivariate Pearson correlation show that student number from 400 samples of universities in the world listed by QS World Class University Rank doesn't correlate with world class ranking. This mean sig 2 tailed > 0.05 = Ho accepted and H_1 is not accepted. Many students choose universities-based university rankings (Pilař et al., 2015). Some method in world university rank face a criticism related to objectivity and result, according to Honsová & Trojan (2016) rankings, while popular with many, carry an array of arguable issues, this issue supported by this research, the indicator from the world ranking shown not correlate in enhance the world ranking, there's another factor that need Universities develop, in the term of good quality, internal resources such a good management it's urgently require to develop, moreover for   a develop country like Indonesia that still face many disruption in quality of education.

5. Conclusion

Mapping challenges and opportunities industry 4.0 to prevent variety impact on people's lives, one of them is the problem unemployment. Work and Employment Social Outlook Trend 2017 predicts the number of people unemployed globally in 2018 is expected to be reached 204 million with an additional increase of 2.7 million. Due to result finding that the number of student doesn't correlate with world universities ranking nowadays government and private sector in education world in Indonesia can focused to other indicator that can gain and enhance more quality, it cannot be denied that this ranking system turns out to still have weaknesses, this is not the only determinant of the quality in education. What things should more be focused by the education sector is how to manage a good quality and more relevant to applicable in education than only focused counting the ranking. Broader research about how to manage the quality in higher education is needed, focus on standardization in Indonesian education management. The 4th Industrial

Revolution (IR 4.0) has arrived, also in Indonesia. The impact is very broad which covers productivity, economy, business, even culture, ways of thinking and of course education. In education, the influence of IR 4.0 is also very broad, from the supply of technological facilities, their use, how to use them for learning, to research and to print people who are all aware of advanced technology that can help improve the dignity of the nation in the world. Using the world ranking to determine the status of Higher Education - Indonesian Higher Education, it is proven that Higher Education - Indonesian Higher Education is far behind the Higher Education - Higher Education of neighboring countries though. Although the causes need to be known, what is important is mapping the way forward towards global recognition from Indonesian Higher Education Institutions. This article provides several suggestions to help improve the achievements of Indonesian tertiary institutions. Basically, the actions needed also involve the revolution in the following matters:

- An attitude revolution
- The revolution of interest
- The revolution of learning methods
- Curriculum revolution
- Professional development revolution
- The leadership revolution of PT
- Needs the role of lecturers in the industrial revolution 4.0 each of which is discussed in this article.

A realistic first step has also been proposed as a scaffold towards global recognition for Indonesian Higher Education in the long run. This is a long-term plan because the 'revolutions' above are not easy to implement but inevitably all of this must be carried out if Indonesia wants to be counted as a country that has an educational status not only recognized by the world but more importantly, which can bring the nation to standard of living, culture and honor in accordance with the needs of world citizen membership. It is important to realize that time is the essence of this. The Industrial Revolution 4.0 has arrived and is no longer on the threshold.

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