

Competence of Islamic Higher Education Graduates from the Perspectives of Stakeholders in the Era of Industrial Revolution 4.0

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Abstract—This study aimed to determine the competence of graduates of Islamic Education Study Program in the perspective of user society. The study used a quantitative approach with survey method. Data collection techniques were conducted by questionnaire, interview, and documentation. Data analysis was utilized with descriptive statistics. The results showed that graduates had to have integrity (ethics and morals) in addition to other competencies. Ethics and morals should be the foundation and priority of higher education in structuring and compiling the existing curriculum. Therefore, learning does not only focus on knowledge, but attitude must be the main goal to print superior human resources who believe and are fear to God Almighty. Attitude needs to be integrated in the ongoing learning process. In addition to these competencies, graduates need to have the ability in the field of technology and communication of foreign languages both Arabic and English. The era of the industrial revolution 4.0 is marked by digitalization in all aspects of human life. Thus, curriculum development in university needs to harmonize between the needs, demands and guidance in the community.

Keywords: *competence, graduate, core, curriculum development*

I. INTRODUCTION

Higher education (university) is the backbone driving the nation's competitiveness. For this reason, university's performance in conducting education has become one of the catalysts of whether high or low quality of human resources (HR), which is often expressed as the level of development of the human development index (HDI) [1]. In quantity, higher education in Indonesia is currently held by more than 4252 higher education institutions, which includes Universities (538), Institutes (128), Colleges (2240), Polytechnics (241), Academies (1105). In total, the higher education accommodates 4,987,740 students, a fantastic number. But in quality, higher education is seen as not having sufficient competitiveness [2]. Universities are often assigned the duty of acting as ideological apparatuses, responsible (among other institutions) for the formation and dissemination of the societal or state ideology [3].

Data released by Toyota Moto Manufacturing Indonesia [4] states that around 50% of higher education graduates have jobs that are not in accordance with their educational path. The same thing with data released by the World Bank[5] states that the education system in Indonesia has not been responsive to the labor market. For this reason, the government, university and the private sector should review the competencies needed for the next 5-10 years, as well as what competencies are not useful for that period. Given that education is not prepared for past work, but future work.

Bandung Islamic University develops its vision, mission and aims to produce Islamic academics and professionals as a form of tafaqquh fiddin according to the needs of the community, with the spirit of mujahid, mujtahid, and mujadid. The products offered by Bandung Islamic University are education in Bachelor (S1), Masters (S2), and Doctor (S3) programs. However, as a means of organizing education by offering products at the level offered, Bandung Islamic University has not been able to fully produce qualified graduates who have qualified competitiveness [6]. Data released by the Central Bureau of Statistics in 2018 shows that open unemployment based on education, especially higher education in 2018, is around 5.92%, an increase from the previous year, which is 5.57% [7].

TABLE I. THE NUMBER OF OPEN UNEMPLOYMENT DUE TO THEIR EDUCATION

Level of Education	Open Unemployment Level due to Education Level			
	2015	2016	2017	2018
No Formal School	1.25	1.46	1.63	1.83
Elementary School	3.94	3.88	3.61	2.79
Junior High School	11.16	9.63	9.48	7.58
Higher Education	6.68	5.15	5.57	5.92

Source : Central Bureau of Statistics, February 2016 (online): August 19th, 2019

The existence of university graduate in the midst of society is a necessity that cannot be bargained anymore, especially in responding to the flow of social change that always develops along with the dynamics of society. It is in this context that each higher education graduate is required to have responsive

abilities to the social phenomena that develop around the graduate. Therefore, it needs a strong competitive power to face the development of the globalization era, and HR is the key.

However, one thing that needs to be contemplated in the development of Higher education graduates is that manager also has a responsibility to the user community. Every community entrusting the education of family member to a higher education sociologically is a "contract" the future of a family. This contract must be paid handsomely by a higher education with the ongoing education process. Contract in community perception is giving response, opinion, evaluating view, or community reaction to graduate's competency. Industry 4.0 propagates the idea of workers that increasingly will focus on creative, innovative and communicative activities. Routine activities which also include monitoring tasks are entirely or partly taken over by machines [8].

Based on the data and findings above, research specifically focusing on the alumni's competency is needed, in the form of competency required and idealized by the user community. In addition, it is needed as input for policy makers at Bandung Islamic University in the context of organizing higher education program linking and matching with users.

II. METHODS

This research used a quantitative approach with a survey method. Survey was used to collect data or information about large population using relatively small samples. The survey method in the context of this study was utilized to explore data and information from the user community about the variety of competencies needed and idealized by the user community - competencies that were perceived, seen and considered by the user. Therefore, the subject of this research was the user community (user), which was not a graduate of the Faculty of Tarbiyah and Teacher Training Program in Islamic Education.

Determination of sampling was done randomly. This technique was carried out with the consideration that the sample chosen really knew the gait and actions of Bandung Islamic University's alumni in the community. This was in line with the statement of Kenneth [9] "the advantage of purposive sampling is that the researcher can use his or her research skills and prior knowledge to choose respondents". Whereas the determination of the sampling number utilized the Slovin formula. Data collection techniques were conducted by using questionnaires, interviews, and documentation. Data analysis used descriptive statistics.

III. RESULTS AND DISCUSSION

The user community referred to in this study were categorized in three forms, namely: the first institution which used alumni from the Faculty of Tarbiyah, Sharia, and Da'wah within the Ministry of Religion such as: the High Court of Religion, the Office of the Ministry of Religion, the Ministry of Religion, the Religious Court, the Office of Religious Affairs, Madrasah Ibtidaiyyah, Madrasah Tsanawiyah, Madrasah Aliyah, Boarding School, Diniyyah, and Al-Qur'an Education School. Second, Elementary School, Junior High School and

Senior High School in the Ministry of Primary and Secondary Education. Third, parents of alumni in the period of 2012/2013-2015/2016 who came from the City of Bandung and Cimahi. Fourth, community leaders representing religious institutions in West Java such as the leaders of the Islamic Union in the region, Muhamadiyah leaders, Nahdhatul Ulama leaders (NU), leaders of the Indonesian Islamic Propagation Council and Chair of the Indonesian Islamic Ulema Council. Based on the questionnaires and interviews distributed to the user community, the data obtained can be displayed.

TABLE II. GRADUATE COMPETENCE EXPECTED BY USER COMMUNITY

No	Capability	SA	A	QE	NA
1	Integrity (Ethics and Moral)	93%	7%	0	0
2	Knowledgeable in the field	90%	10%	0	0
3	Communication Skill	76%	24%	0	0
4	Information Technology Use	76%	24%	0	0
5	Loyalty and Commitment	76%	21%	3%	0
6	Initiative	72%	24%	4%	0
7	Independence	72%	28%	0	0
8	Self-Improvement	69%	28%	3%	0
9	Leadership	69%	28%	3%	0
10	Creativity	69%	28%	3%	0
11	Problem Solving Capability	69%	28%	3%	0
12	Visionary	69%	28%	3%	0
13	Teamwork	62%	38%	0	0
14	Work Skill	62%	35%	3%	0
15	Managerial	57%	39%	4%	0
16	Foreign Language Communication Skill	55%	24%	21%	0
17	Critical Thinking	52%	45%	3%	0

Note:
SA: Strongly Agree
A : Agree
QA: Quite Enough
NA: Not Agree

The table above showed that integrity (ethics and moral) competency becomes the most important competency that should be possessed by graduates of the Tarbiyah and Teacher Training Faculty, especially Islamic education program according to the user community. A teacher must have good ethics and moral in accordance with the teachings of Islam. Because teachers are agents of change that must be able to be role models for students both in words and deeds. As the consequence, the goal of Islamic education "to create a good man" [10] can be gained. The use of communication technology such as computers and other technologies supports the learning process in the classroom and activities outside the classroom.

Loyalty and commitment get respondent assessment with the details as following: 76% strongly agree, 24% agree, and 3% are quite agree. It said that the respondents assessment on initiative competency were as following: 72% strongly agree, 24% agree and 4% quite agree. Then independence competency was as following: 72% strongly agree and 28% agree. Self-development competency gained following assessment: 69% strongly agree, 28% agree and 3% are quite agree. Leadership gained this following assessment: 69% strongly agree, 28% agree and 3% quite agree. Creativity achieved similar assessment to leadership competency as the

following: 69% strongly agree, 28% agree and 3% quite agree. Problem solving competency gained the following assessment: 69% strongly agree, 28% agree and 3% quite agree. Visionary achieved these following score: 69% strongly agree, 28% agree and 3% quite agree.

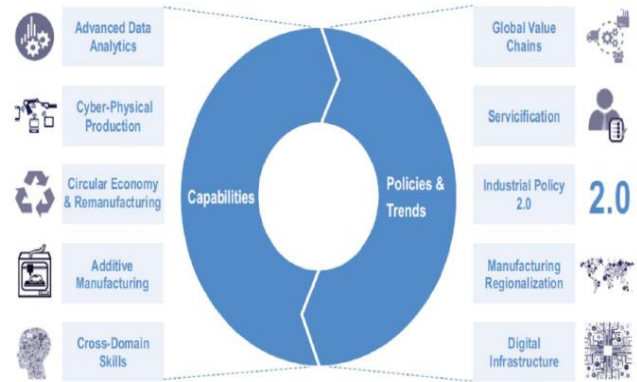
Respondents' assessed teamwork competency as the following: 62% strongly agree, 38% agree. Collaboration in team needs to be familiarized in the learning process, so that students are accustomed to teamwork when they are going to work. Cooperative learning model is developed to achieve at least three learning objectives, namely academic learning outcome, individual acceptance and the development of social skill [11]. The cooperative learning model becomes an important part to be developed by the teacher in the learning process. As the consequence, the desired learning objectives can be achieved. This is when the role of professional teachers is needed. Alhamuddin and Bukhori [12] said: "The teacher plays a central role as a facilitator of instruction. Learners are facilitated to proceed to master teaching materials prepared with a variety of instruction resources". This statement is supported by the results of a study conducted by [13] in 29 countries showing that among the various inputs determining the success of education (student achievement), more than a third are determined by the teacher. According to the study in 16 developing countries (India, Egypt, Bosnia, Thailand, Chile, El Salvador, Colombia, Mexico, Brazil, Argentina, Peru, Uganda, Hungary, Paraguay, Iran, and Bolivia), teachers contribute to learning achievement of 34%, management of 22%, study time of 18%, and physical facilities of 26%. Whereas in 13 industrialized countries (United States, United Kingdom, Scotland, Netherlands, Germany, Sweden, Belgium, which includes 3 ethnic groups, New Zealand, Australia, Italy, and Japan), the contribution of teachers is of 36%, management of 23%, study time of 22% , and physical facilities of 19%.

Teachers are the most important resource in today's schools. Improving the effectiveness, efficiency and equity of schooling depends, in large measure, on ensuring that competent people want to work as teachers, that their teaching is of high quality and that high-quality teaching benefits all students [14].

According to respondents, work skill gained the assessment as the following: 62% strongly agree, 35% agree and 3% quite agree. Managerial competency gained as the following: 57% strongly agree, 39% agree and 4% quite agree. Foreign language communication gained: 55% strongly agree, 24% agree and 21% quite agree. The foreign languages expected to be mastered by the user community were Arabic and English. These two languages are modern communication tools and are the key to opening up other sciences. For this reason, language emphasis is not limited to knowledge, but in the learning process students need to be trained to communicate globally. Critical power achieved 52% strongly agree, 45% agree and 3% quite agree from respondents.

Industry 4.0 is a term that first coined in Germany in 2011, marked by a digital revolution. This industry is a digitally connected industrial process including various types of technology, ranging from 3D printing to robotics, which is believed to be able to increase productivity. The fourth

Industrial Revolution Era is colored by artificial intelligence, super computers, genetic engineering, nanotechnology, automatic cars, and innovation. These changes occur in exponential speed which impact on the economy, industry, government, and politics. In this era, the places in the world have become global villages [15]. This revolution involves advances in underlying technologies, e.g. production and ICT [16].



Source: Global Agenda Council 2014

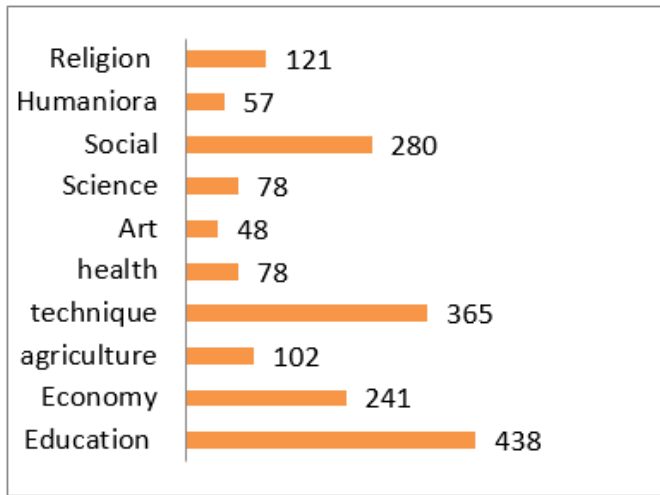
Fig. 1. Ten key drivers for the future of manufacturing.

Further, the pre-service teachers gave priority to the enhancement of their competencies due to the exemplification of their professors who modelled professionalism and commitment to the service [17].

The necessity to adjust existing curricula arises from new challenges companies face in a changing industrial environment. Against this background also learning factories as places for education and training should rethink their content of learning modules. Especially, the demand for different and new competencies emerges in the frame of an Industrie 4.0 approach. This approach can be aligned with the goals of lean production and can be integrated in existing curricula of learning factories. In doing so, a competency-oriented design is suitable in particular. It supports an analysis of the organizational environment as well as a specification of the target groups [18].

Based on research findings related to graduate competencies in the user perspective above, university as human resource printing institution needs to pay particular attention to the changes that occur and the uncertain possibilities after students graduate from college, especially in the era of the industrial revolution 4.0 like nowadays. Education policies and curricula provide the context and specific expectations that drive student learning and achievement towards a sustainable future [19].

The presence of religious study program which is increasingly growing is also a problem that needs to be anticipated by university. Data in West Java shows the number of religious study is 121 study programs originating from state and private universities.



Source : National Higher Education Database on Ministry of Research, Technology and Higher Education, Augustus 20th, 2019

Fig. 2. Study program data in West Java.

IV. CONCLUSIONS

Based on the description above, this research is considered important to be carried out as input for policy makers in Bandung University in order to organize higher education that links and matches in accordance with the needs of the user community. In addition, as a response to these demands, then basic guidelines are made for the preparation of a curriculum based on the national qualification framework of Indonesia. Focus more on student learning and outcomes for Indonesia to reach its education goals, it needs to shift from relying primarily on additional resources to focus more directly and explicitly on improving student learning and outcomes at all levels of the system [20].

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