Preparing Teachers in the Era of "Independence Learning" in Indonesia

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Abstract: *Development of education in the learning process is affected by the phenomena of Industrial 4.0. Education in Indonesia also adjusts to these developments and carries the concept of "Independence Learning". Therefore, the aim of this study is to elaborate and analyse the teacher readiness in facing the era of rapid technological disruption by still instilling quality skills, character, and work ethic. This study uses qualitative approach as methodology with literature review and content analysis in UIN Sunan Gunung Djati Bandung as a case study. This study found that UIN Sunan Gunung Djati Bandung ready to prepare teachers in the era of independence learning in accordance based on technology needs. This finding can be implemented in educational field, especially in higher education.*
Keywords*: education, independence learning; industrial 4.0, technology disruption*

I. INTRODUCTION

The definition of education in a policy perspective, Indonesia has formal and operational formulations, as stipulated in Law No. 20 of 2003 concerning *Sistem Pendidikan Nasional* (SISDIKNAS)/ National Education System, that education is a conscious and planned effort to create an atmosphere of learning and learning process of agape and students actively develop their potential to have spiritual spiritual power of self-control, personality, intelligence, noble character, and the skills needed by himself, the community , nation and state (Direktorat Pendidikan Menengah Umum, 2003; Indonesia, 2003). Three main ideas contained therein, namely: (1) conscious and planned effort, education as a conscious and planned effort shows that education is a deliberate and thoughtful process (intellectual work process), The desired education is developmental and humanist education, which seeks to develop all the potential of the students, not the formation of behavioristic style; and (2) creating an atmosphere of learning and learning process so that students actively develop their potential; and (3) possesses spiritual spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by himself, society, nation and state. That is, the desired education is not secular education, not individualistic education, and not socialistic education, but education that seeks a balance between these three dimensions.

In the era of Industrial 4.0 and society 5.0, education should be adapted and adopt technology in learning process. This industrial era 4.0 utilizes technology in all fields including in education techno (Jamaluddin et al., 2019; Kemeristekdikti, 2018). Moreover, in Indonesia there is a new discourse related to "Independence Learning" (Nehru, 2020), to establish "independent campus" which is in accordance with technology utilization in education (Tohir, 2020). There are several previous researchs that related with this research, among others: (1) optimalization information technology for English course to reach "Independence Learning" concept, this research found that collaboration between teacher and student can established through information technology tools (Hastuti, 2020); (2) implementation information technology based on "Independence Learning" concept to improve student's higher of thinking (Elihami, 2019); (3) in the art course also implement the "Independence Learning" concept (Christianna, 2020); (4) in the field of language and literature, technology used to reach "Independence Learning" and "independent campus" (Fira, 2020; Halitopo, 2020; Saryono, 2020); and (5) the evaluation of learning process in the "Independence Learning" concept is found that the awareness and skill, either teacher or student, should be improved (Izza et al., 2020; Sa'adah et al., 2018). Therefore, as a difference

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research, this research focus on elaborate how to prepare teacher in facing and carry out the "Independence Learning" and "independent campus" in higher education.

II. METHODOLOGY

This research uses qualitative research with literature review, observation, and content analysis (critical review). Qualitative research has inductive and open-ended approach tha widely used for social science research (Tracy, 2016). Literature is collected from various sources, such as books, news portal, journal, thesis reports, and so on that related. Case study in this research is *Universitas Islam Negeri* (UIN)/ State Islamic University of Sunan Gunung Djati Bandung (in this research called UIN Sunan Gunung Djati Bandung). The research activities begin from content and phenomena analysis of curriculum based on Law No. 20 of 2003 of SISDIKNAS, the effect of industrial 4.0 to education 4.0, "Independence Learning" concept, and the purpose of teacher preparation in facing the "Independence Learning" from UIN Sunan Gunung Djati Bandung.

III. RESULT AND DISCUSSION

1.1. The Concept of Authentic Assessment of Learning Processes and Results According to the 2013 Curriculum SISDIKNAS

Law Number 20 of 2003 concerning the National Education System (SISDIKNAS) states that the curriculum is a set of plans and arrangements regarding the objectives, content, and learning materials as well as the methods used to guide the implementation of learning activities to achieve certain educational goals. Specifically, in Chapter X Article 36 it is stated that: (1) Curriculum development is carried out with reference to national education standards to realize national education goals; (2) Curriculum at all levels and types of education is developed with the principle of diversification in accordance with the education unit, regional potential, and students; and (3) The curriculum is arranged in accordance with the level of education within the framework of the Unitary Republic of Indonesia by taking into: increasing faith and piety, increasing noble character, increasing potential, intelligence and interest of students, the diversity of regional and environmental potentials, regional and national development demands, the world of work demands, the development of science technology and art, religion, the dynamics of global development, and also national nunity and national values.

Authentic assessment is a significant measurement of student learning outcomes for the realm of attitudes, skills, and knowledge (Darling-Hammond & Snyder, 2000; Wiggins, 1990). The term assessment is a synonym of measurement, testing, or evaluation (Darling-Hammond & Snyder, 2000). The term authentic is a synonym of original, real, valid, or reliable. Conceptually authentic assessment is significantly more significant than even a standardized multiple-choice test. When applying authentic assessments to find out student learning outcomes and achievements, the teacher applies criteria related to knowledge construction, observing and trying activities, and grades of achievement outside of school. Authentic assessment has a strong relevance to the scientific approach to learning in accordance with the demands of the 2013 curriculum. The assessment is able to illustrate the improvement in student learning outcomes, both in the context of observing, reasoning, trying, building networks, and others.

Authentic assessment tends to focus on complex or contextual tasks, allowing students to show their competence in more authentic settings (Darling-Hammond et al., 1995; Herrington & Herrington, 1998). Authentic assessment is very relevant to integrated thematic approaches in learning, especially elementary school levels or for appropriate subjects. Authentic assessments are often contradicted by assessments that use standardized, standardized, multiple-choice, true-false, matched, or made short answers. In authentic assessment the teacher applies criteria related to knowledge construction, scientific studies, and experiences gained from outside the school. Authentic assessment tries to combine teacher teaching activities, student learning activities, student motivation and involvement, and learning skills. Because

the assessment is part of the learning process, teachers and students share an understanding of performance criteria. In some cases, students even contribute to defining expectations for the tasks they have to do. Authentic assessment is often described as an assessment of students' development, because it focuses on their developing ability to learn how to learn about the subject.

Authentic assessment must be able to describe the attitudes, skills and knowledge of what students have or have not had, how they apply their knowledge, in what ways they have or have not been able to apply learning gains, and so on. On that basis, the teacher can identify what material is worthy of continuing and for what material also remedial activities must be carried out. Authentic assessment requires authentic learning as well. According to Ormiston, authentic learning reflects the tasks and problem solving needed in reality outside of school (Epstein & Ormiston, 2007). Authentic assessment consists of various assessment techniques. First, direct measurement of student skills related to long-term educational outcomes such as success in the workplace. Second, assessment of tasks that require extensive involvement and complex performance. Third, the analysis of the process used to produce students' responses to the acquisition of attitudes, skills and knowledge available. Authentic assessment will be meaningful for the teacher to determine the best ways for all students to achieve the final results, even with different time units. The construction of attitudes, skills, and knowledge is achieved through the completion of tasks where students have played an active and creative role. The involvement of students in carrying out tasks is very meaningful for their personal development. In authentic learning, students are asked to gather information with a scientific approach, understand various phenomena or symptoms and their relationships with one another in depth, and link what is learned with the real world that exists outside of school. Teachers and students have responsibility for what happens. Learners also know what they want to learn, have flexible time parameters, and are responsible for staying on task. Authentic assessment also encourages students to construct, organize, analyze, synthesize, interpret, explain, and evaluate information and then turn it into new knowledge.

1.2. The Effect of Industrial 4.0 Era for Eduction 4.0

Industrial 4.0 era utilized the technology as a whole in various human activities with Internet of Things technology, cloud compting, and also artificial intelligent (Muhammad Nizam, 2018; Office of Chief Economist Bank Mandiri, 2018; Sadiyoko, 2017; Suwardana, 2017). Moreover, today the development of society is moved into Society 5.0 that all human activities is assisted by intelligent technology (Fukuyama, 2019; *Society 5.0*, n.d.; *Society 5.0*, 2019). Figure 1 illustrates the stages of change start from Industry 1.0 to Industry 4.0.
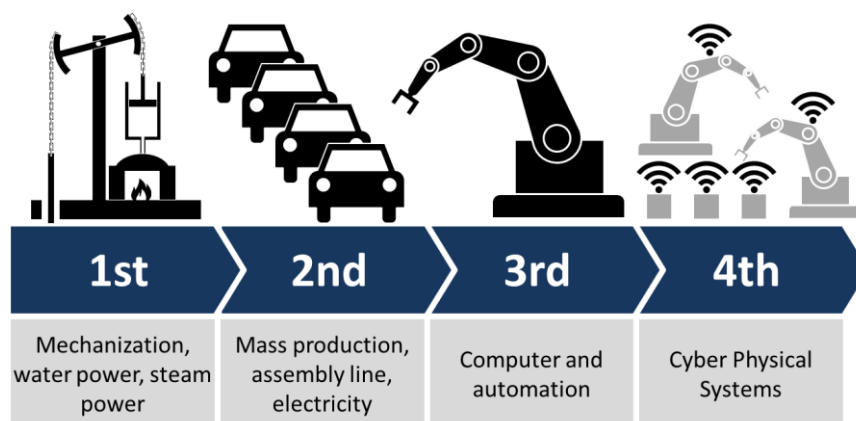

Figure 1 Development of Industrial Technology (Source: https://id.wikipedia.org/wiki/Industri_4.0)

Industry 4.0 is an industrial revolution based on smart technology that can connect physical, digital and biological technology that is connected and can communicate through internet media. Educational challenges prepare graduates to enter the workforce that have not yet been created (Sumber Daya IPTEK & DIKTI, 2018), using technologies that have not yet been discovered and to solve problems that are not yet known. Education is the key to conquering industry 4.0. Education 4.0 Supports the realization of intelligent education through enhancing and equitable distribution of quality education, expanding access and relevance of utilizing technology in realizing world-class education to produce students who have at least five 21st century skills namely Collaboration, Communication, Critical, Creative and Caring. Education in 21st century has several paradigms, among others: information that always available, computation that faster using machine, otomatization that support routine activities, and communication that available every time and everywehere.

While, the new paradigm is established as the effect of industrial 4.0 era that called STEAM (Science, Technology, Engineering, Art, and Mathematics) (Thompson et al., 2018). In accordance with Education 4.0 paradigm, students must have social sensitivity and schools can foster social life, including (Surani, 2019): educational institutions must prepare students to answer the challenges of Industry 4.0 or the 21st century so as to produce output that can be ready for work, educational programs need to adopt technology and also the STEAM paradigm (Science, Technology, Engineering, Art, Mathematics), and Education can make students intellect but also have a good character. "Independence Learning" is a policy of the Minister of Education and Culture of Republic Indonesia as an evaluation of the current Education implementation system to accelerate the achievement of the Education objectives mandated in the 2013 curriculum, curriculum and Education challenges in the 4.0 revolution era. Noting the above matters, the challenge of higher education such as UIN Sunan Gunung Djati Bandung is how to prepare its graduates who are ready to become the driving force of "Independence Learning".

1.3. "Independence Learning" Concept for Education in Indonesia

Following up on the direction of the President and Vice President of the Republic of Indonesia to improve the Quality of Human Resources, the Minister of Education and Culture established four Basic Programs for Free Education Learning Policy. The program includes the National Standard School Examination, National Examination, Learning Implementation Plan, and New Student Admission Regulations. The new policy direction for the implementation of National Standard School Examination, the Minister of Education and Culture, in 2020 will be applied with examinations held only by schools. The test is carried out to assess student competencies which can be done in the form of written tests or other more comprehensive forms of assessment, such as portfolios and assignments (group assignments, papers, etcetera).

Furthermore, regarding the National Examination examination, 2020 is the last implementation of the National Examination. The implementation of the National Examination in 2021 will be changed to the Minimum Competency Assessment and Character Survey, which consists of the ability to reason using language (literacy), the ability to reason using math (numeracy), and strengthening character education. The test will be conducted by students who are in the middle of the school level (for example grades 4, 8, 11), so that it can encourage teachers and schools to improve the quality of learning. The results of this exam are not used as a basis for student selection to the next level.

As for the preparation of the Learning Implementation Plan, the Ministry of Education and Culture will simplify it by cutting down several components. Under the new policy, teachers can freely choose, create, use, and develop the RPP format. The three core components of the lesson plan consist of learning objectives, learning activities and assessment. Writing the lesson plan is done efficiently and effectively so that the teacher has more time to prepare and evaluate the learning process itself. In accepting new students, the Ministry of Education and Culture continues to use the zoning

system with more flexible policies to accommodate inequality of access and quality in various regions. The composition of new student acceptance zoning paths can accept students at least 50 percent, affirmation paths a minimum of 15 percent, and a maximum transfer path of 5 percent. As for the achievement path or the remaining 0-30 percent is adjusted to regional conditions. Regions have the authority to determine the final proportions and determine zoning areas.

1.4. Teacher in the Era of "Independence Learning"

Teachers in the Independence Learning era are teachers who implement the 2013 curriculum, which is authentic learning, so teachers must become "authentic teachers." The teacher's role is not only in the learning process, but also in the assessment. To be able to carry out authentic learning, teachers must meet certain criteria, among others: (1) Know how to assess students' strengths and weaknesses and learning design; (2) Knowing how to guide students to develop their prior knowledge by asking questions and providing adequate resources for students to make knowledge acquisition; (3) Become caregivers of the learning process, see new information, and assimilate students' understanding; and (4) Be creative about how the learning process of students can be expanded by drawing on experiences from the world outside the walls of the school.

Facing the challenges of Industry 4.0 and in implementing "Independence Learning", teachers are needed who have the capacity and competence to realize a comprehensive education organization that includes science, character, creativity and innovation of students. Therefore, teacher in the era of Education 4.0 that has those capacity is needed, because: (1) Era of Independence Learning requires a fundamental change in terms of learning so that educational institutions are required to be able to transform in realizing a broad-based, brand-based eductation, interactive and collaborative education pattern that suits the situation and needs; (2) To support the Transformation of the Educational Institution, this theacher capacity is needed, that is, teachers who are able to realize the revolution of their roles, tasks and responsibilities to prepare the educational children mental (Attitudes and Character as well as Intelectual Competence and Knowledge) in facing the demands of the actual situation and current conditions; and (3) The transformation of the administration of education in the Merdeka Belajar era requires a change agent that has the ability to bring about enormous changes to individuals and organizations.

Therefore, teacher in the era of Independence Learning should abandoning conventional and less productive old ways and being able to understand new things faster, utilizing digital technology to help teachers learn faster and more effectively and turn boring and non-innovative lessons into fun and engaging multi stimulant learning, and revolutionize its role as a source of learning or knowledge provider to be a mentor, facilitator, motivator, and even an inspiration to develop the imagination, creativity, character, and team work that students need in the future. And also teacher must be able to master the risk tasking, effectiveness, autonomy, collegiality, and honor (Darmadi, 2019).

Besides, the skill that must be had by teacher which is tranfered to students, among otherSkill yang harus diajarkan (Soffel, 2016): (1) Foundational Literacies: Literacy, Numeracy, Scientific literacy, ICT literacy, Financial literacy, Cultural and Civic Literacy; (2) Competencies : Critical thinking / problem solving, Creativity, Communication, Collaboration; and (3) Character Qualities : Curiosity , Initiative, Persistence/grit, Adaptability, Leadership Social and cultural awareness. While, the character that must be had among others: (1) Idealized influence where the teacher is an ideal figure who can be used as an example to be trusted, respected and able to make the best decisions for the sake of improving the quality of learning; (2) Inspirational motivation where the teacher can motivate all students and colleagues to have a commitment to the vision of the organization and support team spirit in achieving the goals of education in school; (3) Intellectual Stimulation where teachers can foster creativity and innovation by developing critical thinking and problem solving to make learning better; and (4) Individual consideration where the teacher can act as a coach and advisor

and provide constructive feedback for students and colleagues. Those characters is formed by religious, honest, tolerance, discipline, hard work, creative, independent, democratic, curiosity, spirit of nationality, love the motherland, appreciate achievement, friendly, communicative, love peace, like to read, environmental care, social care, and responsible.

Learning strategy in the Education 4.0 and Indepenndence Learning era must be focus on fertilizing the superior potential of each student with abalance of various intellectual, emotional, social, spiritual, kinesthetic intelligence, and learning the life skills. The assessment system is portfolio based on student work, real-life based learning, and practice in the field. The teacher acts more as a motivator and facilitator so that students can develop their respective interests and learning is based on the abilities, ways of learning styles, and psychological development of each child. And the work ethic that must be built is "work is worship", "work is responsibility", and "work is a grace".

1.5. The Readiness of UIN Sunan Gunung Dati Prepares Teachers of the Industrial Revolution 4.0 era in the Era of Free Learning

UIN Sunan Gunung Djati Bandung is committed to strengthen and improve the quality of human resources to create graduates who are superior and competitive. The vision of the *Fakultas Tarbiyah dan Keguruan* (FTK)/ Faculty of Tarbiyah and Teacher Training of UIN Sunan Gunung Djati is to become the Faculty of Tarbiyah and Teacher Training of UIN Sunan Gunung Djati which is superior, competitive and populist at the National and International level towards ISO, 9001: 2008 in 2014. Starting in 2012 the direction of the development of the Tarbiyah and Teaching Faculty FTK is systematically set out in the 2012-2016 FTK Strategic Plan. During this period, FTK made efforts to continuously improve quality and academic services (continuous quality improvement), increase the quality of research and community service, organizational development and studentship, organizational and work arrangements (orthaker), modernization of facilities, improvement of technological capacity information, management of management and human resources, as well as improving employee welfare and other supporting aspects.

Meanwhile, active adaptation and response to various external challenges has been carried out by FTK UIN Sunan Gunung Djati Bandung through efforts to meet the demands of graduate quality, fulfillment of international quality standards in the administration of higher education, including responses to the enactment of Law Number 14 of 2005 concerning Teachers and Lecturers and products its derivatives, such as regulations on teacher professional programs, as well as fulfilling community demands for education that are based on equal rights and opportunities to obtain easier access at affordable costs. In line with FTK's vision that reaches far into the future, the demand to become a world class of UIN Sunan Gunung Djati Bandung is still a challenge that must be realized. The effort to realize itself to become a world-class FTK is basically a form of FTK's commitment and devotion in providing the best quality services for the people of Indonesia and the world of education. This commitment, besides being a determination to be able to play a better and more role for the benefit of the people of Indonesia.

Focus on FTK for the next five years, among others: (1) improving the quality of performance and academic services, research, and community service; (2) strengthening the professional education of teachers and other professional workers; (3) improving the quality of management and resources; (4) institutional arrangement; (5) image enhancement, partnership, and internationalization; and (6) improving the quality of student development and services. Another effort in preparing superior and competitive human resources, UIN Sunan Gunung Djati Bandung launched the *Ma'had al Jami'ah* Program as a vehicle for student coaching in the development of religious and linguistic knowledge. The goal is to instill and preserve the tradition of religious spirituality which is an academic subsystem and student coaching in the context of implementing the vision and mission of Islamic higher education. Ma'had al Jami'ah seeks to reflect the values of pesantrenan, transform scientific knowledge and experience of Islamic traditions, and become a model of Indonesian

education as they emerge and develop from the sociological experiences of the people in their environment. The Chancellor emphasized the existence of *Ma'had Al-Jami'ah* mahasantri in the campus environment and in the midst of the community is expected to be a pioneer and role model to compete in goodness.

The distinction of *Ma'had al Jami'ah* who helped create students who was qurrota a'yun, pleasing to the eye and cooled the soul, not reluctant to be seen. Efforts to create qurrota a'yun students are important as an effort to realize a progressive campus towards world class. The way to do it is by making changes and maintaining professionalism, commitment, consistently working together and working together in the interests of UIN Sunan Gunung Djati Bandung. Therefore, this endeavor needs to be done together, with a high commitment, togetherness, working earnestly and let's compete to show the goodness and achievements that can boast a beloved campus, not by swearing, mocking other people.

Ma'had was established as a forum to improve student coaching, provide deeper religious learning, and overcome the problematics of the religious knowledge base of Islam. The establishment of *Ma'had Al Jamiah* aims to have a balance between Science, Technology, Faith, and Piety. Therefore, the existence of State Islamic of Higher Education without *Ma'had* is impossible. One way to improve the quality of education and the quality of learning in higher education is not only seen in terms of science with a high GPA, but it must be accompanied by commendable morals, both, as shown by *Ma'had* students. Although *Ma'had*'s capacity is still very limited, it is not like official universities such as IPDN or other tertiary institutions where all students are housed, but the output of Mahad al jamiah can be a pioneer of UIN graduates who are ready to become the influencers graduates, graduates who are ready to become teachers of the industrial era educators 4.0 in the era of independent learning.

IV. CONCLUSION

The Independence Learning policy is a major evaluation carried out by the Indonesian government in an effort to carry out the mandate of the 2003 National Education system and the implementation of the 2013 curriculum, among others in the implementation of Authentic Assessment, which is a significant measurement of student learning outcomes for the realm of attitudes, skills, and knowledge. The term Assessment is a synonym of assessment, measurement, testing, or evaluation. The term authentic is a synonym of original, real, valid, or reliable. Conceptually authentic assessment is significantly more significant than even a standardized multiple-choice test. When applying authentic assessments to find out student learning outcomes and achievements, the teacher applies criteria related to knowledge construction, observing and trying activities, and grades of achievement outside of school.

All authentic assessments must be in line in preparing students to welcome the industrial era 4.0 in education that supports the realization of intelligent education through enhancing and equitable quality of education, expanding access and relevance of utilizing technology in realizing world-class education to produce students who have at least 21st century skills namely Collaboration, Communication, Critical, Creative and Caring. UIN Sunan Gunung Djati Bandung is an institution providing human resources educators/ teachers who are ready to provide human resources implementing industry 4.0, in the 21st century must be one step ahead compared to other institutions/ universities that only produce human resources implementing industry 4.0 itself. The *pesantren/ ma'had/* boarding model, namely *ma'had al jamiah*, is a breakthrough in the readiness of UIN Sunan Gunung Djati Bandung to welcome the industrial era4.0 which is expected to be able to answer the challenges of the times when several Educational Institutions are organizing boarding schools. The student evaluation system in mahad al jamiah can be the current model of authentic boarding school educational institution implementation. Hopefully this algamiah capacity and *ma'had* will continue to increase.

V.   REFERENCES

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