International Journal of Innovation, Creativity and Change. www.ijicc.net
Volume 5, Issue 5, Special Edition: ICET Malang City, 2019

The Change of Educational Tutoring Paradigm as a Non-Formal Education Unit

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Tutoring is needed because parents' lack confidence in the services provided by the school. Tutoring is considered to make students successful in their schools. Tutoring institutions as non-formal institutions are seen as important for their success in helping learning difficulties. The Industrial Revolution 4.0 apparently had a profound impact on the services provided by non-formal education including tutoring. The purpose of this article is to analyse the paradigm changes in tutoring of the industrial revolution 4.0 era through a literature review and the use of qualitative approaches. The literature review comprises of various research results and existing analysis, which are then mapped so that it can provide information related to why conventional tutoring must change, and what strategies must be done for conventional learning guidance in order to maintain their existence and be able to compete in the future.

Keywords: *Paradigm, Tutoring, Industrial Revolution 4.0 Era*

I. INTRODUCTION

It is undeniable that the existence of non-formal education is very much needed by the community, even for young children, youth, adults, and the elderly (La Belle, 2000; Mfum-Mensah, 2003). In terms of activities, it encompasses activities involving women and communities, literacy, equality, skills education, and also tutoring. In Indonesia there are various tutoring institutions that are managed professionally (Darmayanti, Setiani, & Oetojo, 2007; Febriyanti, 2017). The credibility of each tutoring institution is determined by the results of graduates. If all students pass and get a satisfactory grade, the name of the tutoring institution will also be boosted. This shows that the user really determines whether it will remain in demand or if it will be abandoned by consumers.

With the old pattern, teachers tend to be the only source of learning and are 'omniscient' in the classroom. They often forget if students are the subject of learning and at the same time are learning resources for their peers. Curriculum implementation has experienced degradation and is no longer oriented to the ability of these students in the understanding of science in the context of life and daily practice. Instead it revolves around the target achievement of student competencies that can be seen from academic value (Chan & Elliott, 2004; Collier, Weinburgh, & Rivera, 2004; Jordan, Schwartz, & McGhie-Richmond, 2009; Motyl, Baronio, Uberti, Speranza, & Filippi, 2017). It is important to have a balance between the concepts of knowledge and skills. However, it is not enough for students to be able to understand the rapid changes in the environment (Engeser & Rheinberg, 2008; So & Kim, 2009). Survival of the fittest is likely to be applied in this era of the fourth generation. Only those who are adaptive will survive this onslaught of the Industrial Revolution 4.0.

Thus in learning activities in tutoring, those who take tutoring, learning hours are certain and cannot be changed, so students who have many activities (full day school), will experience difficulty in determining their learning time, as well as the instructor (Angilberti, 2018; Nusantari & Budiyanto, 2012). That is because it has been established and can rarely be replaced, to suit the desires of students. Likewise, those who study in one class may be incompatible with their classmates. As a consequence , students or tutoring participants do not develop their learning outcomes. The number of participants in conventional tutoring is between 10-20 students. This can make the atmosphere of learning unfocused, and students, afraid of being laughed at or blamed, may feel embarrassed or too inadequate to ask the teacher questions,. This is not to mention the issues regarding its location from the student's home. It can bring down their motivation to take conventional tutoring. This diminishes their results, because the conventional classroom tutoring mood is no different from school (Amelia & SUGIONO, 2012; MEIDYNA FAYAKUNIKMAH, 2019).

Industrial revolution 4.0, is the implementation of automation technology and data exchange in the industrial field. It is influenced by technological developments and the internet. This can also be called digitalization in the industrial field. Klaus Schwab (2016) related that the Fourth Industrial Revolution is seen as a study related to the fundamental changes in the way of life of people who are strongly influenced by the discovery of new and interrelated technologies. One thing that is very real is the birth artificial intelligence in a variety of product formations that can work like optimized functions of the human brain. There are many kinds of 'artificial intelligence' that have been generated including super computers, smart robots, vehicles without a driver, etc (Schwab, 2017). In

this Industrial Revolution 4.0, patterns and mechanisms of work were only found when disruptive technology comes so quickly that they gradually dominate the joints of human daily life (An, 2018; Ballantyne, Wong, & Morgan, 2017).

With the presence of the digitalization era, many conveniences were obtained. However, it also became a threat related to the loss of a teacher's warm touch that students could get directly as a feeling that could help in building students' traits and characteristics. Heart-to-heart communication between teacher and student is reduced, personal attention to individual differences is also reduced, so all students are given the same treatment (Kim, 2009; Kobayashi & Hara, 1993; Sannomiya & Kawaguchi, 2000). Even so, the impact of technological developments that have spread in the joints of life must be lived through.

The Industrial Revolution 4 was marked by the emergence of disruptive education, including the fundamental change in the educational model (Featherman, 2015; Flavin, 2012; Kleiman, 2008). One of the changes that occurred was a change from monologue, textbook, and institution-based education to discussion, open resources, and student-based education, as well as the use of various new technologies such as collaboration platforms and cloud computing in the learning process. In fact, in developed countries, virtual reality technology, augmented reality, and artificial intelligence have been used in the learning process (Dutã et al., 2011; Furht, 2011; Lu, Li, Chen, Kim, & Serikawa, 2018; Pan, Cheok, Yang, Zhu, & Shi, 2006; Whitelock, Brna, & Holland, 1996).

The penetration of technologies changes the way of learning in the classroom. Now, students don't only depend on printed books that are officially used by schools (Delgado, Vargas, Ackerman, & Salmerón, 2018; Gilbert & Fister, 2015; Ketamo, 2015). The knowledge possessed by teachers no longer limits students' understanding competencies, and they are not only limited to learning in the classroom. All knowledge can be accessed and shared easily with open resources. In this case, the knowledge taught in the classroom is the basis of self-learning that is carried out outside the classroom.

It is time for the tutoring manager to change the paradigm to something web-based (online). This change was made because people felt they were getting better services, and learning through applications was done in a flexible manner. Learning could be undertaken anywhere, at any time, and with anyone. Even parents can also be actively involved in these tutoring activities. Through online tutoring activities, parents can monitor children's learning activities, because they tend to study at home or with their colleagues. There is calm among parents when the child is in their view (Hampel & Stickler, 2005; MacDonald, 2008).

Conventional tutoring managers do not find it easy to make changes to online tutoring, because of their tendency to feel comfortable with patterns. There are many reasons why conventional tutoring is still excellent, even though there are alternative modes of learning through more practical online classes. One of them is because parents feel unable to supervise their children's activities while in front of the laptop. There are still some parents who do not believe in what their children are doing when they are in front of the computer (Booth & Booth, 1999; Booth, Booth, & McConnell, 2005; Booth et al., 2005; Jones, 2013). Excluding the parent factor, it turns out that from the internship, the

manager of tutoring still survives with the old pattern due to their limited knowledge and skills in information technology with online systems. They are inferior to young people who have high achievement and innovation.

This article specifically analyses how conventional tutoring can continue to exist in the era of disruption as a result of the industrial revolution 4.0, as well as what must be done by conventional tutoring institutions, and the obstacles they encountered in adapting to the era of the industrial revolution 4.0. To answer these questions, a study of the literature has been conducted that encompasses the results of studies or research that has been done. The information collected has been mapped so that it illustrates the complete results.

II. DISCUSSION

It cannot be denied that tutoring institutions are needed by the community. This institution is very helpful for students who will complete their studies at certain levels. This happens because many parents do not believe in the learning style of the school, and feel anxious that their children will not be able to pass the exam. By sending their children to the tutoring institute, parental anxiety will be reduced.

Tutoring in Indonesia began around the 1970s because schools were no longer responsible for the educational activities of third-grade high school students who would take the state higher education entrance examination (PTN). In the end, the students used their vacation time to prepare themselves for the PTN entrance examination. In the early 1980s, these conditions were taken as a business opportunity by a number of parties, which led to the birth of various tutoring institutions in big cities, starting from Java. As it developed, tutoring is no longer merely serving high school graduates who will enter state universities but has evolved with a variety of more varied learning programs.

The phenomenon of students looking for additional knowledge that has been obtained from schools is a form of high motivation for students to learn when viewed in terms of quantity. But this is a problem when viewed in terms of quality. Students who study at tutoring institutions identify that they feel dissatisfied studying in their school. Students generally feel the need to learn extra because they assess the school only as a formal place to study and simply fulfil its obligations as a student.

The data of the Indonesian Directorate of Course and Training shows that the number of tutoring institutions in 2012 was 13,446. 11,207 institutions or around 83.35% of them had operating licenses, with a total of 1,348,565 elementary school tutors with details of elementary school students 17.84%, junior high school 22.97%, and senior high school ranks first at 45.51%. The rest are at higher education levels (Amsalis, 2015). That number from year to year shows an increase. There are indeed many who require these tutoring services. This number shows an increasing trend. As of April 2017, the number of registered LKPs, both registered and still in the registration process, was 29,283. In other words, it grew by around 10.2 percent from 2011 to 2017. When compared to formal schools, the number of LKP was only around 1/10 (one-tenth) of the number of formal schools (AL AMIN, 2017; Amelia & SUGIONO, 2012).

The improving condition of this tutoring institution shows that tutoring has a significant effect on mathematics learning achievement at 55% (Sarasweni, 2012). Thus, tutoring has a significant effect on learning motivation. Students choose tutoring because tutoring institutions are a place to improve the sense of achievement they feel, as well as the low value of their subjects. Parents also feel that their child's grades are not good, so they need help to improve the value of their subjects (Millatina, 2010; Sovic, 2012). In addition, they also want to pass the national examination and enter famous universities. After attending tutoring students can get a top 10 class ranking and school. Tutoring institutions may say they help improve student achievement, but ultimately the role of the school and the will of students themselves affect student achievement (Millatina, 2010).

A study conducted by the Paramadina Public Policy Institute (PPPI) regarding the level of education service users and their problems, explains the reasons why tutoring is so lively. One of them is that children are taking additional tutoring. Data obtained from the results of the study show that around 51. 4% of elementary school students and 51% of middle school students attend extra lessons outside of school. It turned out that the main reason for taking additional tutoring was due to lack of understanding of the material in the classroom, according to 68.8% of elementary and junior high school students. 44% of elementary school students and 34.7% of middle school students did not take additional tutoring. The reason for students not taking tutoring based on surveys from the study is not because they have understood the subject matter, but because they are tired of learning them.

Their interest in attending tutoring is not only because it can improve their learning outcomes but involves many factors including a pleasant service seen from space, and the friends, tutor who make them feel comfortable in learning. In addition to service quality, there are other factors that are thought to affect customer satisfaction, namely price. As a business that is engaged in education, tutoring institutions must have advantages such as setting competitive prices. Tuition fees are not cheap, so not everyone can afford to pay for their children to go to tutoring. There is still anxiety among parents that after paying an expensive tuition fees, there is a risk of unsatisfactory results. Indeed, joining tutoring is a solution to increase the achievement of values.

Therefore, tutoring institution are needed to improve its quality. The government is expected to make policies towards many tutoring institutions that have sprung up now so that they can meet the educational quality assurance standards. Tutoring institutions must clearly have a vision and mission to educate their students, not only in the quantity they achieve but the quality that is prioritized because it is related to the learning system.

Incorporating elements of technology in the world of education is a must for Indonesia at this time, especially when considering that Indonesia is a vast country consisting of thousands of islands. It is very unlikely that the distribution and improvement of quality of education will be carried out conventionally and without the help of technology, including educational tutoring.

Tutoring is an activity in the learning process carried out by someone who already has the abilities to give to others new knowledge that can be applied in their life (Chi, Siler, Jeong, Yamauchi, & Hausmann, 2001; MacDonald, 2008). A web-based tutoring information system is a tutoring system for students via internet. A website-based tutoring information system can help improve the quality

of education and make it easy to manage data at tutoring institutions (Chen & Duh, 2008; Cheung, Hui, Zhang, & Yiu, 2003).

It is time for the learning paradigm in the classroom to be transformed into a process that provides a lot of experience for students to collaborate with their teachers, as well as their friends, to build and organize knowledge, involve themselves in research, learn to write and analyse, and be able to communicate what they experience according to their age. In the digital age people can learn to use a variety of methods and various sources. This is a challenge for teachers to find which approaches will be used in helping students to learn effectively.

Online tutoring is a choice now, because: (1) Tutoring is done online or by utilizing cyberspace with almost no location restrictions. Students can study anywhere without any obstacles. As long as the location where the learning is connected to internet connection everything will go smoothly. (2) Tutoring is held with the aim of helping students to learn as best they can, so that better achievements will be obtained when in school. Due to the limitations possessed by students, they often cannot repeat the material that has been given and must learn from teaching materials that are provided. But through online tutoring, it is one of the learning alternatives after school that is quite promising. (3) Conventional learning must be paid for and is not cheap, especially if the institution already has a brand. In online tutoring, the costs are much more efficient, because there is no need to pay for transportation to the place of study because it can be accessed from anywhere such as home or school. (4) At this time gadgets are not a luxury for anyone, Everyone and even children are used to it. This will facilitate learning to use gadgets. Learning is much more relaxed and easier and students also do not need to be continually stressed out with limited study time. (5) Gadgets are identical to social media. Those who use gadgets to learn at the same time can add friends in learning through learning groups built around the material being discussed.

By attending online lessons, participants are not bothered by rain or traffic, which is often the case for participants who take conventional lessons. By attending online tutoring, the reluctance to go to study can be reduced. In addition, it turns out that the cost of participating in tutoring that is more expensive to online tutoring. The convenience provided by online tutoring is thus an attraction for the public to take part in online tutoring.

One of the drivers of digitalization in the education sector is education applications, digital content distribution, e-teacher training strategies, national values and identity as well as digital teacher forums. Digital learning models can overcome the problem of dropping out of school and the low performance of education staff in the regions, and this will minimize the education gap in the regions and cities.

More education start-ups in the form of online tutoring present teachers virtually in the form of videos. The definition of start-up is a company that has just been built or in a pioneering period. They are generally called a start-up because this company refers to a company that has not been in operation for a long time. This company is mostly a newly established company and is in the development and research phase to find the right market. Start-up also does not apply to all lines of

business. The term start-up is more categorized for companies in the field of technology and information that are developing in the internet world.

The start-up model of education in Indonesia is growing very rapidly, start-ups are currently: 1) Quipper Video is an edutech (from Japan) which concentrates on the quality of content by adjusting the system to the curriculum implemented in Indonesia (this is called as The Second School). 2) Ruang Guru, as a start-up (edutech), is considered the most complete by combining various features (almost all edutech is in the Ruang Guru's package). 3) Zenius is Edutech which allows students to ask questions when facing a college entrance test, national exams, school exams. It also provides learning tools that can be accessed anytime and anywhere online and can also be accessed offline as there are modules and video tutorials inside. 4) Kelase is edutech, which is similar to social media. It is a new space for community interaction in schools in digital society. 5) Quintal is a start-up that focuses on managing teaching and learning activities in schools using special software. 6) HarukaEdu is edutech which concentrates on participants in higher education by successfully collaborating with several higher education institutions (Gideon, 2018; HIDAYAT & SRI, 2019; Mulyono, 2016; Rahmadani & Setiawati, 2019; Syamsurijal, 2019).

Looking at various phenomena and the results of agreements made by researchers and education observers, it can be explained that it is time to abandon conventional tutoring and switch to digital marching tutoring models that can use e learning or blended learning models. Conventional bimbel managers must change their perspective on the current institution. Some time ago they had the complete infrastructure to be able to serve hundreds of participants, but this time it was not necessary. They can serve thousands of people even with limited space, limited instructors, but need people who have competence in designing services and virtual learning.

III. CONCLUSION

Educational tutoring in general has a target to make participants pass their exams with good grades, as well as the selection process of state universities. It can make students have more achievements by getting good daily test scores and elevate them the next grade with satisfactory grades.

Tutoring is non-formal education that is mostly done outside of school and outside school hours. Nevertheless, this tutoring aim is to help students improve their academic achievement at school, passing students who continue their school to the next level as they wish.

Conventional tutoring institutions are focused on the system and direct management. Teaching often uses the drill system. They organize tutoring by doing try outs to get into state universities. Participants were not provided with many choices, so they felt compelled to follow what the institution presented. Several deficiencies are encountered. Forced education makes participants feel uncomfortable, and often gives less than optimal results

Although it is rather heavy, some tutoring institutions have begun to provide types of online-based learning activities, although in a very limited capacity and frequency. This is to protect the market potential of tutoring institutions in the millennial era that are so dependent on online and cloud technology. Both regular lessons and online learning applications have advantages and

disadvantages. Some students continue to choose additional learning in tutoring for reasons that are more interactive so that, if there are questions or they do not understand the lesson described, they can directly ask the teacher.

The development of the digital world has an effect on student learning by optimizing the use of digital libraries in meeting the needs of their curiosity. The digital age has an influence on the patterns of community needs, including in the field of education. The development of start-ups in Indonesia is indeed quite rapid, but the increasing development of the number of start-ups is also proportional to the failure rate start-ups. One of the benefits of the development of edutech is that it ensures students throughout Indonesia get the same knowledge without the division between Javanese students and students outside of Java, which was felt differently before the digital era.

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