Indigenous Wisdom and Technology-Enabled Learning: Efforts to Prepare LPTK Graduates for the 21st Century

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Abstract: In this paper, I argue that Technology-based education cooperation that constitutes part of 21st century teaching and local wisdom-based education must be performed to maintain the archipelago's culture. Both of these elements must be integrated in potential educators undergoing education at the LPTK. The particular goal of this research was to understand how to apply local wisdom-based teaching and technology in LPTKs. Qualitative methods offer an effective way of uncover problems in this paper. This study was performed at the Universitas Pendidikan Indonesia, Purwakarta, in January-July 2019. Informants in this research have been: lecturers and students of Program Studi Pendidikan Sekolah Dasar (PGSD) and Program Studi Pendidikan Guru Pendidikan Anak Usia Dini (PGPAUD), UPI Purwakarta. Data collection in this study utilizes methods: (1) observation; (2) in-depth interviews; and (3) evaluation of information sources linked to research issues. Technique of data analysis used Miles, M.B., Huberman, A.M., & Saldaña models. UPI Purwakarta's implementation of technology and local wisdom in every teaching enables learners to combine the archipelago culture and keep up with the times. Class leadership with this model is anticipated to assist learners master some unique abilities that can be implemented later when working or teaching at college. In addition, a teacher must be able to apply the learning concept applied on campus by developing a self-created learning model.

Keywords: *indigenous wisdom and technology-enabled learning, LPTK, 21st century*

INTRODUCTION

Education in the 21st century is rapidly improving and improving, previously enhancing and complicating fresh learning models and ideas. This idea changes some of the ancient ideas deemed to be used for use. However, the ancient idea still needs to be approved with ideas that are still applicable and have a beneficial effect on learners.

Learning in Indonesia has inherited a range of ideas from predecessors or philosophers of archipelago education who have their own features. Philosophers of the Archipelago inherit multiple thoughts for advancing Indonesian education. This can be seen in the notion of Article 31 paragraph 3 of the 1945 Constitution (UUD 1945), namely: the state seeks and organizes a national education system that enhances faith and piety and noble personality in order to promote the law-regulated life of the nation. It is evident that the focus of education implementation is on improving faith and piety as well as noble personality. These three things are the main points in Indonesia's application of education.

School students must learn people who, in accordance with their beliefs, have faith and devotion to the One and Only God. Besides this noble character becomes a benchmark when acting and becoming a very strong national character. All who have these components must be able to be intelligent people prepared for nation-building.

The hopes of the philosophers and founders of the nation are contrary to the present reality. Indonesian education is increasing and able to compete at a declining international level. The World Bank (World Bank) says that the quality of education in Indonesia remains small, while access to education for the society has risen considerably (Fauzie, 2018).

Indonesian education is experiencing an emergency at the moment. The Commissioner of the National Commission on Human Rights, Beka Ulung Hapsara, stressed that several things led to the emergence of education in Indonesia, namely: (1) many cases of human rights violations in schools and colleges have continued to increase from year to year; (2) the ranking of education in Indonesia has decreased and lost to ASEAN countries; (3) there is a lot of corruption related to the education budget; and (4) an education system that has not functioned well. (Nadlir, 2018).

Changes in curricula and ministerial changes can be said to be progressive, but also not a problem solving because the application and quality of human resources, particularly educators in Indonesia, are too varied (Sujarwo, 2013). This is an significant note for government and teachers to concentrate on enhancing graduate performance. Graduates ' quality is an significant issue when it has not been optimally absorbed in the workforce. Therefore, stakeholders must strive to enhance graduate performance so that workforce absorption can be optimized.

Technology becomes an essential component of daily life. But it has a important effect on users, particularly kids. Negative effects are a significant factor in the community's issues, such as: (1) pornography consumed by minors (Quinlivan, 2018); (2) violence against women and girls (Sundaram, Maxwell, & Ollis, 2016); (3) decline of social behavior, i.e. human relations in society and family (Younes & Al-Zoubi, 2015); and (4) Reduce the quality and amount of face-to-face communication (Drago, 2015).

Technology issues that have an effect on culture need to be resolved correctly so that consumers can use them in accordance with the purpose of creating the technology. The more adverse effects that occur are not similar with the goal of using technology to enhance the community's welfare and economy. Technological innovations have an effect on social financial trends (Solehudin, 2017).

The function of education can assist decrease the community's adverse effect on the use of technology. In addition, teachers are fitted with teaching models based on local wisdom in accordance with the archipelago culture. The values of local wisdom in the archipelago are an significant point in applying the instructional model. In addition, educators must be fitted with pedagogical systems to assist guide learners to use technology wisely. The value of local wisdom implemented in the society must be maintained by teaching learners when they are in college.

In this paper, I argue that Technology-based education cooperation that constitutes part of 21st century teaching and local wisdom-based education must be performed to maintain the archipelago's culture. Both of these elements must be integrated in potential educators undergoing education at the LPTK. The particular goal of this research was to understand how to apply local wisdom-based teaching and technology in LPTKs.

METHODS

Qualitative methods offer an effective way of uncover problems in this paper. This study was performed at the Universitas Pendidikan Indonesia, Purwakarta, in January-July 2019. Informants in this research have been: lecturers and students of *Program Studi Pendidikan*

Sekolah Dasar (PGSD) and *Program Studi Pendidikan Guru Pendidikan Anak Usia Dini* (PGPAUD), UPI Purwakarta.

Data collection in this study utilizes methods: (1) observation; (2) in-depth interviews; and (3) evaluation of information sources linked to research issues. Technique of data analysis used Miles, M.B., Huberman, A.M., & Saldaña models like on figure 1.
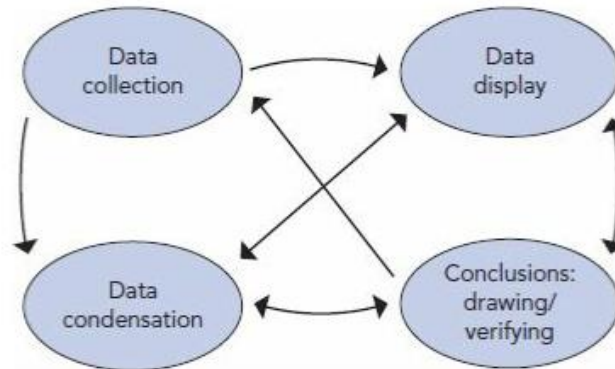

Figure 1. The component of interactive component data analysis (Miles, Huberman, & Saldaña, 2014)

RESULTS AND DISCUSSION

21st Century Learning is expected to enhance the quality of graduates to be readily absorbed in the workplace. The world of work requires the quality of workers who are able to keep up with increasing times, especially since the era of disruption has recently become a hot issue. Worker recruitment patterns are increasingly evolving to satisfy those requirements, therefore 21st century-based learning becomes a competitiveness to reach graduates who are readily accepted in the workplace.

The world of education is also experiencing a paradigm shift in the formation of quality graduates to be able to compete in the world of work. Not only for learners who are ready to work in a business, but learners who are ready to become teachers will also experience a paradigm shift. The teacher must master the skills of the 21st century so that it can be implemented in the classroom's learning process later, because students must also acquire those skills to be able to compete in the global world. The teaching process in higher education must therefore also be geared towards the abilities of the 21st century and based on the KKNI (Indonesian Qualifications Framework).

The training of abilities of the 21st century is basically performed early, namely for elementary school pupils. This is anticipated so that learners can master the basics of abilities to be created at the secondary school level, so that these learners can adapt and improve these abilities at the college level. Student instilling abilities in the 21st century are component of the abilities that must be mastered in order to compete in the worldwide environment. Thus preparing credible educators to be able to transfer skills well to learners is the correct move so that the accomplishment of learning through graduate skills can be well achieved.

Industrial globalization's impact significantly impacts the Indonesian population, particularly potential employees willing to compete. Indonesia itself already has a range of sectors that have evolved for a long time, making advances and competition increasingly stringent. Employee recruitment is very essential and selective in order to attract potential employees who can satisfy the requirements of the sector as a whole. Industries operating in Indonesia include: (1) beginning with the labour-intensive industry food-processing, textiles, and wood products); (2) followed by the whole chemical industry; and (3) concluding with the rest (metal and

mechanical & electrical engineering) (Raillon, 1990). The three sectors continue to develop along with the requirements of the times, as the digital start-up sector is now beginning to mushroom to satisfy their daily requirements. Even trivial items like motorcycle taxis, delivery food, ticket reservations, and other events have started to move to using technology to satisfy the requirements of fast-paced people. The growth of this paradigm must be balanced with a learning pattern that must follow the evolving age so that it is not left behind.

In addition, the teacher must be able to equip learners with the personality values of nationalism, given that these values have faded away from outside ideology. The cultivation of domestic personality is part of preserving noble values as a force and characteristic of the Indonesian population. Indonesian people can compete in the worldwide globe by having unique personalities to characterize as Republic of Indonesia citizens. It may be able to compete with other employees in terms of capacity, but it is possible to see Indonesian employees characteristically by having unique features that are not owned by employees from other nations.

Nationality personality is a distinct point for the individuals of Indonesia because it has a variety of cultures and distinct philosophies of life in each region. This is what makes Indonesia a country wealthy in culture, so the motto "*Binneka Tunggal Ika*" becomes a pioneer in uniting the nation without separating one another. The cultivation of domestic character in each topic in college is component of a teacher's duty, because understanding the personality of the country is the key to enhancing the spirit of nationalism and the love of the country for learners. Therefore, a teacher must be imprinted on his national values of personality so that he can be practiced through school teaching and be emulated by learners.

Instilled in Local Wisdom Values through Performances

The Primary School Teacher Education Study Program (PGSD) is one of the LPTK's favorite study programs, taking into account the needs of many elementary school teachers. Nearly every LPTK, both public and private, has to open a PGSD Study Program because there are a big number of elementary schools and require the same amount of teachers. PGSD is one of Indonesia's most study programs, so it is easy to fulfill the needs of teachers moving to elementary schools, even though some regions do not yet have teachers. This is because the even distribution of teaching staff for primary schools is not evenly distributed, especially for teacher needs in the 3 T region (left behind, outermost, and remote).

The classes provided to learners are materials to enhance student competency. This enhancement in skills is anticipated to be able to promote graduate accomplishment in order to be prepared to become competent teachers in elementary schools. Pedagogical strengthening for learners must be performed intensively, not only theories taught in the classroom, but straight in the field since the original semester. This is anticipated to enhance students ' general pedagogical skills.

Students have had the job of studying at college since the first semester to look for issues and circumstances that have happened recently. Students are needed to understand modern issues so they can see an up-to-date summary of elementary schools. Students are asked to make observations to the college in the Educational Psychology Course to see how educators do teaching to elementary school students. In addition, students were encouraged to visit heritage sites in the course of education sociology in the 6th semester. Students were invited to Kampung Naga in Tasikmalaya in 2019, which has local wisdom and is maintained by the society.

Higher education learning is also inseparable from applying character education to learners. The method of implementing character education with elementary schools in higher education has distinct models, although the content is not very distinct. The student teaching model relates the approaches to andragogy and higher order thinking skills (HOTS). Both methods are very appropriate for learners who are able to evaluate an issue.

The study programs of PGSD and PGPAUD emphasize learners to be able to conceptualize and execute the event well. This is stated by the presence of multiple occurrences under the auspices of the research program. The activities include: regional festival songs (Pepper Fest) and performances of art. Both of these operations have taken several years to promote the capacity of student organizations.

Figure 2 is one of the actions taken in regional song and clothing-themed performances by elementary school pupils. This activity encourages excitement

Figure 2. The interactive component data analysis component

Technology as a medium for student learning and application

Technology's function is very helpful for multiple areas, one of which is education. Education needs learning media that can promote student learning so that the method of knowledge transfer can operate optimally. The technology submitted is not just a learning media, but needs education in order to be able to handle the technology according to its designation. In addition, the teacher must direct learners to use the gadget as required so as not to be addicted or excessive in its use.

Information technology is a very dangerous component to be misused, resulting in several instances owing to incorrect use of technology. The function of the teacher is very essential to guide learners to use technology wisely. In the Playstore, educational apps have been freely distributed so that users can access them freely.

Students are needed to master ICT as part of teaching while in school when learning at UPI Purwakarta. This is because the kids of today are very acquainted with technology, so that the technology must be mastered as a teacher in order to direct learners to use it wisely. This attempt was made by lecturers at UPI Purwakarta to equip learners to master ICT. This learning model is component of technology-based learning inclusion. Schools are tiny ecosystems and simulations of the community setting, so school technology can promote organizational objectives and societal imperatives (Heyde & Siebrits, 2019).

PGPAUD UPI Students from Purwakarta get a project to create learning media unique requirements for kids. Figure 2 demonstrates that learners can apply special needs learning with AR-based technology to kids. Various media are ready to provide learners with the ability to be active in technology learning. Students need to be able to master ICT in depth because most

kids of generation Z and alpha are very acquainted with the use of technology, particularly gadget-based. Based on this issue, the research program's management strives to introduce the technology.

Applying technology in the classroom is very helpful for students to get to know the development of learning media that is currently developing. Students are introduced to various booming media such as: virtual reality, enhanced reality, motion graphics, clay animation, video editing, etc. The media update implemented in the classroom enables learners to comprehend and be able to apply some of these techniques so that they can adapt to increasingly fast technological modifications in the future. With the growth of technology-based education in classrooms, educators are needed to master and apply several teaching models, such as virtual education as an option and a balance between traditional approach-based teaching (Dodd, Kirby, Seifert, & Sharpe, 2009).
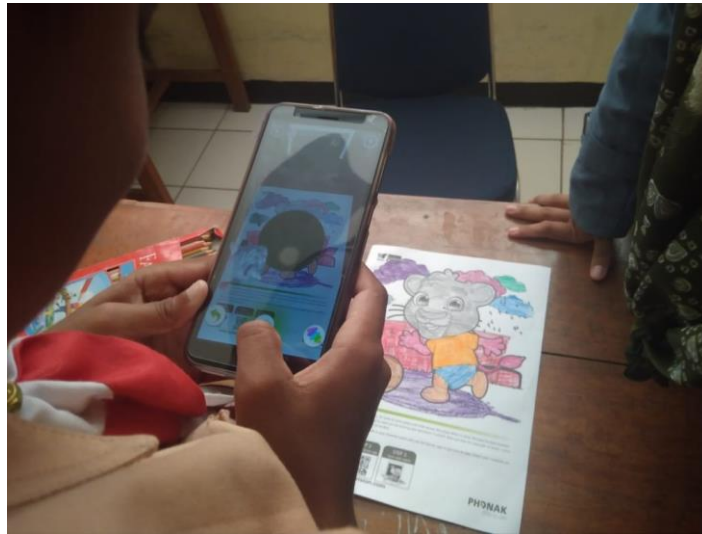

Figure 3. Applying augmented reality for children special needs

The implementation of technology in the classroom can effectively enhance the results of teaching operations and students. This is because kids tend to be more active and attempt fresh stuff with media characteristics. Research results related to the application of technology also showed an increase in activity and student learning outcomes at Class IX high school in Jambi (Aminoto & Pathoni, 2014). E-learning extends the pedagogical resources, assists students in their learning, develops the abilities, motivation and understanding of learners, prepares them to be productive in today's society's workplaces (Kuimova, Kiyanitsyna, & Truntyagin, 2016).

Figure 4 showed that this original structure demonstrates the main design aspects of a sustainable e-learning system for sustainable e-learning in the higher education industry in Malaysia (Sofadin, 2014). In this framework, it demonstrates that technology is the key to sustainable development. The basic keys in this context are the principles of e-learning and e-learning, technology, application and sustainable growth. Each component promotes sustainable development so that the government's scheduled achievement goals can be well directed. Thus, the application of technology to teaching is one component that must be introduced and supplied by the government in order to achieve sustainable development education in Indonesia.
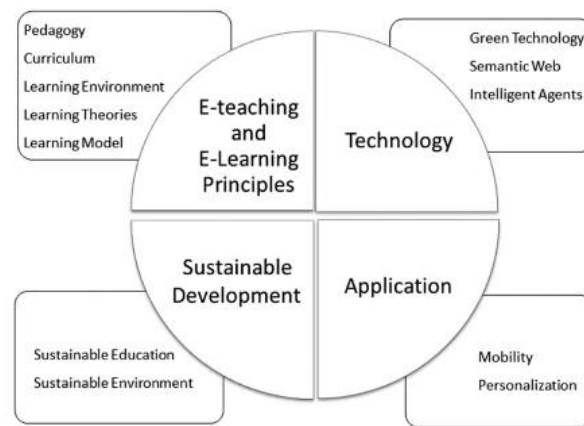
Figure 4. An initial Sustainable e-Learning Framework (SeLF) for higher-education institutions in Malaysia (Sofadin, 2014)

CONCLUSION

UPI Purwakarta's implementation of technology and local wisdom in every teaching enables learners to combine the archipelago culture and keep up with the times. Class leadership with this model is anticipated to assist learners master some unique abilities that can be implemented later when working or teaching at college. In addition, a teacher must be able to apply the learning concept applied on campus by developing a self-created learning model.

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