

Contemporary *Wayang* in the Digital Story Telling: Bring the Enviromental Sensitivity to the Classrooms

インドネシア伝統の人形劇ワヤン。この民族的遺産をデジタル世代の子どもたちに伝え、かつ環境保護に活かす教育現場の取り組みを紹介する。

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Abstract

Wayang – a traditional theater in Indonesia and Southeast Asia, refers to puppet theater performance. Historically, as it was used to spread religious-and-social values to society, it has a potential to be applied in educational field to insert characters values as stated in Indonesian *Kurikulum 2013*, preserving nature as well as local culture. Technology literacy, at the same time, becomes the concern of 21st century education. Digital storytelling, then, could be the bridge of the local and the modern ones, and the media to educate the characters building. The core of digital storytelling is from the idea of combining the art of telling stories with a variety of multimedia. It can be practiced in many different content areas across grade levels, and is able to facilitate students with various learning styles. Regarding to those rationales, it is possible to insert the local values of *Wayang* with some modification and the modern technology of digital story telling in order to educate as well as to increase students' awareness toward social issues. This current study, further, was based on the practice of digital story telling in CLC Jeroco, Sabah - Malaysia. On the basis of students' social background which is the children of migrant workers in the oil palm plantation, the theme of the stories was related to the issue of oil palm plantation and its impact toward environment. The insertion of this theme in the classroom setting was expected to increase students' environmental sensitivity and critical thinking.

Keywords Wayang, digital story telling, environment

Introduction

Globalization leads to the pace of social changes in various aspects of life, among others are information and technology (IT), culture, and environment. In terms of IT, the growth of the Internet globally has eased people to easily access and/or share numerous information without substantial barriers. One can update the latest news in far parts of the world only in seconds and spread it automatically to all over the globe. In other word, everything can be done in merely one or two clickings of fingertip. A number

of social media, *inter alia* Facebook, Twitter, Instagram, YouTube, and so forth, have also essential roles in spreading culture products from one country throughout the world. This phenomenon brings the issue of cultural globalization. The cultural globalization has power to minimize cultural boundaries among nations. It also enables individuals to mingle in broader socialization as well as brings interconnection among different populations and cultures. Thus, the impact of IT advancement immensely affects various life sectors.

Cultural globalization, further, also brings the new issue of cultural homogenization which potentially impact national identity and culture. Global culture has made people more familiar with Hollywood than the culture of their own country. Hollywood blockbusters have been popular throughout the globe and 70% of its revenue comes from international markets (Brook, 2014) which means that most of its viewers are from the countries outside USA: In fact, Indonesia is categorized as a promising market for Hollywood movies. As the world turns to Hollywood, the shaping views of Americans (Americanization) cannot be overlooked. Indonesia as a nation-state with a pluralistic society, which consists of approximately 1,128 racial/ethnic groups (BPS, 2010), is vulnerable to social unrest and intra-group tension in terms of race, ethnicity and religion (Sugiharto, 2009), needs to be alert on the profound impact of this globalization towards the future existence of Indonesian local culture. If the richness and diversity of local culture is not well preserved, the cultural globalization and/or homogenization surely would fade and swap the position of local culture.

One of the issues of global-culture impact which this paper concerns is that the case of degrading of *Wayang* as the Indonesian great noble indigenous culture product. *Wayang* is a traditional theater in Indonesia and Southeast Asia referring to puppet theater performance. The characters consist of inanimate figures made of and moved by human effort before audience (Stein, 2010). The varieties of Indonesian *Wayang* can be categorized into *Wayang Beber*, *Wayang Purwa*, *Wayang Gedog*, *Wayang Golek*, *Wayang Krucil*, *Wayang Madya*, and *Wayang Pancasila* (Moerdowo, 1982). Furthermore, Moerdowo added that as the native culture of Indonesians, *Wayang* reflects exquisite art, philosophy, moral, thought, and education values. It does not function merely for entertainment purposes, yet is used for exorcism, invocation of ancestral spirits as well as spreading religion. Historically, it is developed based on the cultural and social patterns of Indonesia. It, firstly, adopted classical Hindu Javanese

religious mythology. As the era of Islamic culture in Java, Islamic values were inserted within the narrative as the media to spread its religious values. At the time of 1945, the year of Indonesian independence, contemporary *Wayang* called *Wayang Perjuangan* was created in order to commemorate the revolution. To be emphasized, *Wayang* retains its position as high level and breathtaking art form at all levels of society as well as embraces esthetical, educational, mystical and philosophical elements. In 2010, then, Indonesian *Wayang* got UNESCO recognition as one of the Masterpieces of the Oral and Intangible Heritage of Humanity.

In this current globalization era, however, the position of *Wayang* has been shifted by modern pop-culture which makes it less popular now than some decades ago. It is such a crisis that the organizing committee of *Festival Wayang Indonesia* stated that most Indonesian youths lost interest in *Wayang* and were even blind to *Wayang* (Jakarta Post, 2015). Regarding this case, it is absolutely a big challenge for Indonesian to introduce and maintain the existence of *Wayang*, as the great honour heritage and the mirror of Indonesian characters, to the youth because the future of *Wayang* lies in the hands of them.

Besides the challenge on the local native culture preservation, another issue in the present undeniable globalization era which Indonesia has to face is environmental problems. As the world's largest archipelago country encompassing over 17,000 islands, Indonesia is endowed with rich natural biodiversity and resources. However, these have not been managed in sustainable manner which has led to over-exploitation and depletion. Besides, as the fourth populous country on the earth after China, India, and USA with over 237 million inhabitants, Indonesia also faces a big problem; the total population is expected to grow to 271 million by 2020 (World Population Review, 2015). Moreover, that number of residence is not evenly distributed among thousands of islands situated from Sabang to Merauke. 58% of the total population reside in Java islands which leads to various environmental problems, not merely in Java, but

also over the Indonesian sovereign areas. Besides, Indonesia has also deforestation problems whose rate reaches 1.8% annually due to agricultural clearance, forests fires, illegal logging, and illegal mining (World Bank, 2008). Based on the data obtained from the World Bank, this is significantly higher than other two tropical-forested countries, Brazil (0.6%) and Democratic Republic of Congo (0.3%), and the global mean deforestation rate (0.5%). The scale of forests fire, presently, has increased with the expansion of oil palm and timber plantations, particularly in Sumatera and Borneo islands. This exploitation contributes to flood, landslide, water shortage, soil erosion, land degradation, water pollution, loss of biodiversity, as well as pressures and stresses on the whole ecosystem of the Earth.

Regarding the environmental problems, Indonesian government actually has made some attempts by establishing environmental regulation, yet its implementation and enforcement is weak (Wingqvist & Dahlberg, 2008). In order to achieve the goals, it is obligatory to have grassroots' active participation that can be started by making use of education, as it is considered as one of the most powerful and effective means in raising human awareness, shaping the world, changing the attitude to face the future challenge (UNESCO, 1997; Howe, 2009). Therefore, it is indispensable to include environmental sensitivity within education through environmental education which is integrated in curriculum. Students as the young generations who will be the future leaders need to be adequately equipped as well as prepared for the numerous world challenges, including environmental problems they will inherit. This will help them become well educated and thoughtful leaders of tomorrow (American Forest Foundation, 2010). Jacobson, McDuff, & Monroe (2006) state:

Environmental education is objected to provide students with the opportunity to gain the sensitivity to the environment, to have knowledge and experience of the problems surrounding the environment, to acquire a set of values and

positive attitudes, to obtain the skills required to identify and solve environmental problems.

In addition, environmental education also brings benefits to students, such as opportunities for rich, real, and relevant learning across curriculum which is relevant towards the context of Indonesian national education goals which aim to build critical thinking, problem solving, and foster active, independent, and cooperative learning through the content area integration (Archie, 2003).

As the aforementioned globalization-era complex problems has pivotal concern, one of the educational alternatives to bridge the three challenging dimensions which are the advancement of IT demands, the Indonesian *Wayang* existence degradation, and the environmental problems in Indonesia, is by utilizing digital story telling using *Wayang* characters with the specific topic of narrative about environment. Digital story telling, based on a number of resources, (Vinogradova, Linville, & Bickel, 2011), refers to a distinct nonlinear narrative genre that uses new media of technology to produce narratives using multimodal means (sound effects, voice, music, and images) to convey meaning. In other word, students use a variety of multimedia tools to narrate the story in an innovative, creative and engaging project. Furthermore, it also provides interactive activities for building communities, fostering students' collaboration and multiliteracies, and creating opportunities for global audience. Digital story telling, then, could be a potential medium to bridge the local and modern ones, and also as a medium to teach the skill of character-building.

In specific, this current writing would elaborate the use of modified modern Indonesian *Wayang* (henceforth contemporary *Wayang*) which is used in the setting of education and performed using the medium of digital story telling to deliver environment related materials. It is considered as the pivotal to insert *Wayang* in the educational field to build characters values. The term of contemporary *Wayang*, in this present piece of writing refers to the oral

art performance using Indonesian *Wayang* characters with some modification, such as, the naming of the figure which uses modern name closely to students' daily life instead of the classical name of each figure, the use of modern-themed stories telling about environmental issues, the application of various modern music instruments or sound effects instead of *Gamelan Jawa*, and the use of *Bahasa Indonesia* as the medium of communication instead of using traditional-high-level of Javanese (*Krama Inggil* or *Kawi*). Those were applied as part of the up-to-date efforts to make *Wayang* more appealing to young generations. Regardless the modification laying here and there, each character of *Wayang* is visualized and formed as closely as to its original form as the efforts to keep the sense of classical and traditional values of *Wayang*.

The practice of digital story telling as the delivering medium of contemporary *Wayang*, further, is expected to have triple functions: (1) to introduce and preserve the Indonesian local culture of *Wayang*, (2) to instill the environmental sensitivity values, (3) and to prepare the Indonesian youths to cope with the demands of 21st century and global communities where everything is digitalized and require everyone a certain technology literacy. Eventually, it is expected that the use of contemporary *Wayang* shapes national characters in the global world and keep the existence of Indonesian native culture while the environmental narrative as the topic within the *Wayang* performance can reinforce the future generations to be proactively aware of the sustainability of the Earth in which they live.

Method

This current article is developed under the umbrella of qualitative research design in which the researchers seek a deeper truth of a phenomenon in natural setting, understand as well as interpret it from multiple perspectives on the basis of activities conducted at Community Learning Center (CLC) SMPT Jeroco, Sabah-Malaysia. To be more specific, the research-

ers employed a retrospective study design since it is objected to investigate past activities on utilizing contemporary *Wayang* through the medium of digital story telling within the teaching and learning process (Hess, 2004; Starman, 2013). Theoretically, there are three general types of retrospective study: case report, case series, and case-control study. A case report is a report of one unusual and instructive case, a case series is a report of multiple similar unusual or instructive cases, and a case-control study is similar to a case series and includes control group as the comparison. Regarding the previous explanation, it can be concluded that this article belongs to case report.

The subject of this present retrospective study is the 58 Junior High School students levels on grade of VII, VIII, IX and Package A at CLC SMPT Jeroco. CLC Jeroco is one of the schools out of 48 CLC SMPT in Sabah – Malaysia which was established in 2013 under the supervision of *Sekolah Indonesia Kota Kinabalu (SIKK)*. Its establishment is one of the efforts of Indonesian government to broaden the access of education for Indonesians regardless the area they inhabit (UU No 20 year 2003 about National Education System), including Indonesian children who reside in Malaysia. It is absolutely urgent for giving the education access for *TKI-Tenaga Kerja Indonesia* (Indonesian migrant workers) children in Malaysia regarding the fact that Malaysia has the highest number of Indonesian migrant workers compared to Taiwan, Arab Saudi, Hongkong, and Singapore (BNP2TKI, 2015). There are approximately two million Indonesian workers in Malaysia. 80% of them work in the oil palm plantation, particularly in the Eastern part of Malaysia, Sabah. Based on the data from Uni Social Democate, the number of legal and ilegal migrant workers in Sabah reaches 538,180 and 329,388 respectively (Handadhari, 2015). In addition, Nusron Wahid (the head of BNP2TKI) stated that recently there are around 15,000 school-aged Indonesian children in Sabah—Malaysia who are learning at the CLC with free educational services.

Particularly in CLC SMPT Jeroco, the students'

age ranges from 12 to 19. Based on the observation of the teacher, the students in the Jeroco oil palm plantation prefer working to studying at the formal school. Some others are working in the morning and going to school in the afternoon. So, it could be said that the ones who go to school are categorized as the motivated learners. As the highlight, the social environment of oil palm plantation does not give adequate support for school aged children to pursue the education.

Having school at CLC in Malaysia, for sure, is different from what Indonesians have, especially in terms of academic and socio-cultural atmosphere. For instance, the school starts in the afternoon (1 p.m – 5 p.m.), some students in CLC SMPT Jeroco have not passed primary school so that they do Package A program at the school, students are more fluent using Malay language with special local dialect rather than Bahasa Indonesia which impact on the students understanding towards the subject materials which were delivered in *Bahasa Indonesia*. Despite those differences, CLC still needs to apply the Indonesian curriculum and attain the goals plotted in four domains, spiritual, cognitive, social, and skills (Kemdikbud, 2013). In addition, the social challenge that most of CLCs in Malaysia faces is that most of their students are not only living in but also born in Sabah, and they do not see Indonesia as their origin country. Regarding this socio-cultural condition, there is urgent need for inserting nationality towards Indonesian students.

Concerning on the challenges and demands of globalization, the goals of national education, the need of environmental-problems sensitivity of the young generation, the Indonesian students special socio-cultural background in Sabah-Malaysia, the result of comprehensive review on the potential of contemporary *Wayang* using digital story telling, and the critical analysis on the urgency of inserting Indonesian characters, the two researchers collaborated to apply contemporary *Wayang* within the package of digital story telling in the process of instruction at the CLC SMPT Jeroco Sabah—Malaysia. As the

two researchers have different domicile (Indonesia and Malaysia), for the practicality and feasibility reason, the one who conducted the process of field execution was the one who live in Sabah—Malaysia.

In order to obtain the data on the implementation of the digital story telling, some instruments employed were field notes, documentation, students' script, and edited video product of contemporary *Wayang*. All the instruments utilized in the data collection, then, were analyzed narratively to have big picture about the events and to reveal underlying values on the implementation of contemporary *Wayang* using digital story telling in the educational field and its wider effects. It is also expected that the findings are viable to inspire broader number of educators, practitioners, scholars, and/or researchers for developing similar media in different educational settings to spread the environmental values and sensitivity to young generation, not merely in the scope of Indonesia but also all over the world.

Findings and Discussions

Implementing Contemporary Wayang in the Digital Story Telling

The current Indonesian national curriculum (K13) requires the interrelation between one subject to other subjects vertically as well as horizontally on the basis of accumulative, reinforced, and enriched principles (Kemdikbud, 2013) to create a productive, creative, and inovative future generation (UU No 20 year of 2003). To be more specific, it aims at building students environmental sensitivity, increasing nationality, preserving local culture, and developing IT literacy. Regarding those goals, it is a challenge for the teachers to build nationality and/or bring Indonesia inside the classroom as the setting of the school is oil palm plantation in Sabah - Malaysia. Further, raising students' awareness about a number of cases related to the environmental problems in Indonesia (generally) or land clearance or forest fire for new oil palm plantation (particularly) where they live is obligatory to apply. The real example of

environmental disturbance which the students had was the haze disaster in 2015 caused from forest fire in Sumatera and Kalimantan, Indonesia. Of course, as the ones who live in the oil palm plantation surrounding, students should not be apathy, but need to be well known of this case. It is also expected that students become the agent of change who will be responsible for the future of the earth.

Wayang, with some modification, then, is believed to be effective means to achieve the goals and cope with the aforementioned challenges – environmental, national identity, and technology. The use of contemporary *Wayang* in the classroom came out as the result of discussion and analysis between the researchers. After critically reviewing related and relevant theories, then, the researchers came to the hypothesis that contemporary *Wayang* using digital story telling might be the answer for the present challenges and to reach the goals set in the national education system of Indonesia. The combination among contemporary *Wayang*, digital story telling, and environmental sensitivity character, in conclusion, meets the equilibrium point of a number of 21st century education goals which are local culture preservation, technology literacy, and future environment awareness.

In the process of executing the project of using the media, some stages were conducted, *inter alia* preparing, applying, reflecting, revising and reapplying, and reporting. The flow of the stages is shown in the Figure 1.

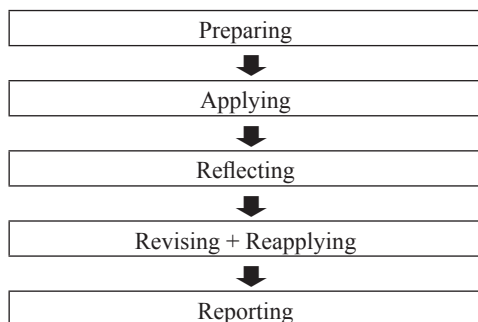


Figure 1. The Flow of Project Stages

In the preparing stage, the researchers set the goals of the project to focus on; in this term is promoting students' critical thinking and problem solving related to the present socio-cultural and environmental problems. The researchers also prepared the topic of environmental problems, particularly forest fire in Indonesia (Sumatera and Borneo islands) which in fact has created haze disaster over the country and spread to Malaysia and Singapore (BBC, 2015). This topic of haze disaster was meaningfully chosen as it is urgently needed to open the students' eyes about the issue of oil palm plantation. The topic chosen was also authentic as authentic materials are a useful means to bridge the gap between classroom and the real world (Kelly, Kelly, Offner & Vorland, 2002). This is also part of brainstorming activity since having students thinking about different ideas would help to get the process started as well as to lead the students to focus in certain areas (Alba, 2014). As part of brainstorming, the teacher-researcher prepared a hand drawing entitled "Putri Jerebu" or "The Haze Princess" to explain about the haze disaster as shown in the Figure 2. The drawing was aimed to visually attract students' attention during the process of explanation on the materials.

The other preparation prior to the project application, the researchers prepared materials that provide students with the general knowledge of Indonesian *Wayang* characters and how to play with *Wayang* in



Figure 2. The Drawing entitled "Putri Jerebu" Used to Introduce Haze Disaster

the conventional way. In this stage, students were able to create the characters as well as do the performance in front of the class as shown in the Figure 3.

In the stage of applying the project, the researchers started to hook students' understanding about environmental problems happened on the earth by implementing questioning technique. After that, students were challenged to create a story and perform it in the form of *Wayang* performance, not in the conventional way as they had previously, but in the form of digital story. First, students created the narrative in group consisting of six students. Then, based on the narrative, students discussed the characters and background to be used in the filming process. Lastly, they performed a story of environment using their *Wayang* characters and record it digitally using handphone camera. In the first cycle, all the *Wayang* characters which students made were modern ones (most of the characters visualization were students in their age). The story that students created were very attractive and amusing ranging from the disposal classification, haze disaster, flood, and water pollution. In the first stage, it was very interesting due the students used the real natural background and effect as shown in the Figure 4. The story and language used by the students were very novel and close to their daily life. Yet, the technique of characters movement and clip filming had not been good. The process of filming did not have the editing stage,



Figure 3. The Introduction to *Wayang* Play

so that students directly show their film in front of the class after recording process.

After the filming process, students come to the stage of presentation in which their digital stories were shown to the class and received feedback from other students. During the session of presentation as shown in the Figure 5, students gave written as well as spoken comments on each film presented. During the presentation, there were a large number of laughs. All the students were very attentive to watch their friends' work.

After that, the researchers came to the reflection stage, and found out the values of local culture had still not been maximal as the characters of *Wayang* students made were too modern. As the researchers concerned on preserving, introducing, and emphasizing Indonesian local culture toward students of Indonesia in Sabah-Malaysia, the researchers decided to go to the second cycle with some revision. In the second cycle, the researchers revised some aspects and reapplied the project of digital story telling using



Figure 4. Characters of Contemporary *Wayang* in the Step 1



Figure 5. Digital Story Telling Presentation

contemporary *Wayang*. The researchers reintroduced Indonesian *Wayang* characters to the students through PowerPoint presentation as it was the simplest and practical visual medium to use before the classroom. The introduction of *Wayang* characters (Punakawan, Pandawa, Rama Shinta, and so on) was considered very crucial to be conducted to refresh students' knowledge on *Wayang*. Even though students had been introduced to *Wayang* prior to the project, the repetition on the *Wayang* materials was important as the students never knew the original Indonesian *Wayang* characters previously for most of them were born and grow up in Sabah - Malaysia. Thus, this introduction was objected to be part of bringing Indonesia to the Indonesian children.

After being given sufficient introduction, students were asked to create the characters of Indonesian *Wayang* as shown in the PowerPoint presentation they were interested in. The creation of Indonesian *Wayang* characters in the project of digital story telling was included as part of a weekly project program called "Program Tugas Mingguan" which has been conducted for over two semesters on the basis of Project Based Learning (PBL). This project has been proven to effectively promote students' positive characters, *inter alia* creative, innovative, disciplined, motivated, responsible, independent, open-minded, socio cultural and environmental sensitive (Kurniawan, 2015). In creating the *Wayang* characters, students did it individually so that each of them can be more imaginative, explorative, freely expressive, and creative. As the classic form of Indonesian *Wayang* characters is very difficult to create exactly as its original forms, then, students were given a freedom to do some modifications. Some characters that students created were Gatotkaca, Punakawan (Semar, Gareng, Petruk, Bagong), Srikandi, Arjuna, Bima. The results of *Wayang* characters are shown in the Figure 6.

After finishing creating the characters, the students submitted their art product to be assessed. The assessment included internal and external parties. The internal examiners were students and the

teacher- researcher. It resulted that there were four best characters. Those big four, then, was polled by external assessors using the social media, Facebook. There were nineteen external respondents who voted for the students' works. This phenomenon is the real evidence that social media can be used to support the process of teaching and learning. The teacher-researcher also believed that uploading the work of students, is also part to show to public (particularly Indonesian) that migrant worker children exist and they are also part of NKRI (*Negara Kesatuan Republik Indonesia*). So far, the students' works have got positive responses which are expected to motivate students as they know that their works are seen and appreciated by broader people from other areas outside oil palm plantation. Furthermore, uploading the students' works are also proven to be able to inspire the other educators to apply the similar activities in their own contexts and settings.

After that, the students were given a project to work in a group consisting of six students to create a narrative under the main topic of environment issues, particularly in Indonesia, utilizing the characters of contemporary *Wayang* they have made. After the idea of narrative has been selected, students cre-



Figure 6. Characters of *Wayang*

ated the draft of the narrative to help them organize the characters, the setting, and the sequence of the movie (Alba, 2014). After creating the narrative, students came to the stage of creating the background picture of the story manually on a piece of drawing paper. The pictures would help the students to give better background of the story they recorded. Then, in the process of filming and dubbing in creating digital story telling, students recorded their *Wayang* performance using handphone camera. Fortunately, all the students were equipped with a sophisticated handphone so that the technology was not barrier in the process of recording the performance as shown in the Figure 7.

In addition, the setting of Indonesia was objected to enclose the students to be more aware of their country. Students developed and produced their stories under the topic of environmental issues that are of genuine interest to them so that the range of the stories will be varied. Topics chosen by the students during the project were disposal problems, forest fire, water pollution, wildlife protection, and global warming. After that, the students came to the process of editing video in which they can insert a title page, write captions, add musical instrument, provide neat transitions between clips, and have credits at the end. Unfortunately, as the limitation of computer facilities, there was no computer for students, the teacher-researcher was the one who did the editing process using Windows Movie Maker (WMM). WMM was selected as it was the simplest program. The result



Figure 7. Students Do Recording Using *Wayang* Characters

of edited videos is presented in the Figure 8. The decision to involve teacher as the video editor was due not all students come with knowledge of digital video editing technology regardless the modern smart phone they had, yet there are still lack of ability to operate the computer application related to the video editing.

The last step in the project of contemporary *Wayang* using digital story telling project was the session when students presented their digital stories before the class and received feedback from other students. Particularly, the presentation of the digital storytelling product would foster students' presentation and discussion skills as students need to present their work to the public (classmates) and give constructive feedback in the form of both oral and written comments to others' work as well as receive feedback for the future betterment. These activities would build students' character, such as communicative, confident, open minded, honest, polite, respect, and appreciative. One of the video products was also uploaded by the teacher-researcher in the social media of Facebook to invite external viewers to give constructive feedback and/or appreciation. It will, further, increase students' motivation when they know that their product will be published on the Internet (Karchmer, 2001). It was also a means of promoting and introducing students towards the global world.

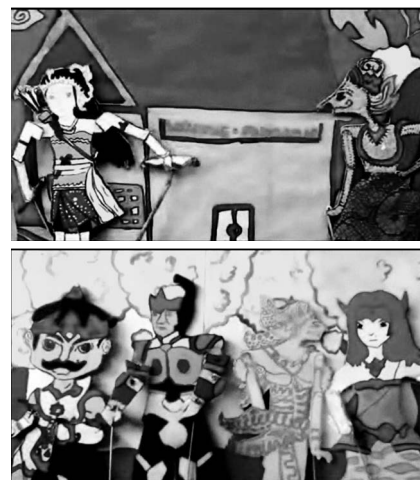


Figure 8. The Samples of Digital Story Telling Videos

There were 26 viewers for the uploaded video. However, the respond toward the uploading video product was not as good as the uploaded photos. The less responds were due the viewers need to spend more internet credit for watching the video so that they were reluctant to click it. In addition, among three video of the contemporary *Wayang*, only one could be uploaded due to the technical problems on the internet connection. The video product, then, could be downloaded publicly using this following link: <https://www.facebook.com/franky.asshodiq/videos/vb.100000491948354/1283996584960061/?type=2&theater>.

During the implementation of the project of contemporary *Wayang* using digital story telling, the researchers did evaluation by observing the process, making notes, and documenting all of the process of activities to have further investigation to generate theories and/or evaluation. The teacher-researcher also asked the students to give a comment on the activities of creating the digital story telling. It was found out that students were motivated to do the project, for instance to create a character, to draw background, and to do filming and dubbing). Thus, it could be concluded that contemporary *Wayang* can be a means to insert and spread environmental values and sensitivity to the young generation. This activities also promote students' critical thinking to find the environmental problems, its causes and effects, how to prevent it from happening, minimize and/or solve the negative impact. In conclusion, it is essential to make young generations realize that they are part of the problems, and therefore they have to be part of the solution.

Accomodating 21st Century Educational Goals and Increasing Environmental and Socio-Cultural Sensitivity through Contemporary Wayang Using Digital Story Telling

A number of goals the students in the 21st century have to achieve are having social, cultural, global, and environmental awareness. It is supported by the 'Belgrade Charter—A Global Framework for Envi-

ronmental Education' whose objectives are as follow:

to foster clear awareness of and concern about economic, social, political, and ecological inter-dependence in urban and rural areas; to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment; to create new patterns of behavior of individuals, groups and society as a whole towards the environment.

(UNESCO, 1975)

On the basis of Belgrade Charter above, it is critically concluded that environmental education is not merely about science-based, but it can be in the form of inter-disciplinary approach across disciplines. A report of Environmental Education published by the Scottish Education Department in 1974 recommends that young people should be introduced to environmental concepts and values, be trained to assess critically the many views on current environmental issues, to permeate environmental education to the whole curriculum.

In the process of creating the narrative in the project of digital story telling, students need to think critically on what have happened in and around their environment by observing and questioning why they happened. Then, in order to find the answer of their curiosity, students need to collect the data from various resources, then analyzing and synthesizing the data they obtained to get the way to solve the problems raised. After those processes, they created a storyboard of flow of the narrative to communicate their ideas to the world. In the process of finishing the digital story telling project, the students creatively created *Wayang* characters, did the video recording and dubbing to perform the story created, and finally finished and presented the project in front of the audiences. In conclusion, the projects follow the principles of scientific approach which are observing, questioning, associating, experimenting, and networking (Kemdikbud, 2013) and the 4C's

skills of 21st educational skills - critical thinking and problem solving, communication, collaboration, creativity and innovation (NEA, nd) along with technology literacy.

Based on the analysis, the process of developing digital story also supports student learning and Higher Order Thinking Skills (Nelson, 2006) and has been found to be an important tool for the improvement of student writing, language, and literacy skills. In addition, during the process of digital story telling using the characters of contemporary *Wayang*, learners worked collaboratively to finish the product. Digital storytelling also acts as a motivator to sustain student engagement throughout the project (Burn & Reed, 1999). Digital story telling which utilizes multi media means not only address different learning styles (Alameen, 2011). In its process, students can develop multiliteracies; writing - by drafting the narrative, visual - by creating and modifying the character of Indonesian *Wayang*, communicative - by delivering, presenting, and discussing the stories, and electronic literacies - by creating and sharing the stories in the form of digital instead of conventional way. Therefore, it is both theoretically and empirically proven that contemporary *Wayang* using digital story telling could accomodate students' different learning styles, audio, visual, as well as kinesthetic.

However, there were some barriers during the implementation of digital story telling using contemporary *Wayang*. First, as the knowledge of *Wayang* characters that the teacher-researcher had was limited, the students were not explained in detailed, for instance the biography of each characters, the ornament used in the characters, and so forth. The teacher researcher also did not give explanation on the story of classical *Wayang*. In addition, the materials of *Wayang* were only given at glance. Second, the students' competence on using computer and specific software related to audio and video editing was still very limited so that the one who was in charge of combining and editing video was the teacher- researcher. It was a note from the teacher-researcher that ideally the students, themselves, had

to conduct the editing clip, yet there were neither computers for students nor the human resource who would help students doing the editing. To be highlighted, there were more than 50 students (the number is increasing over time) in CLC SMPT Jeroco. Ironically, there was only one teacher who had to deal with that number of students and was in charge of teaching all subjects. To teach the students the editing software, of course, would be hard and time-and-power consuming.

Conclusions and Suggestions

To sum up, we need moral education to instill environmental sensitivity as well as social cultural awareness to future generation. Further, in this current 21st Century, students have to acquire knowledge and skills in technology. In mediating those challenges of environment, culture, and technology literacy, digital story telling, then, is a potential answer as it can bridge among them well. The result of this implementation of digital story telling in the CLC Jeroco is the empirical proof toward its effectiveness within the instruction. However, it is required to be highlighted that undoubtedly there are challenges associated with the application of contemporary *Wayang* in the digital storytelling production, particularly in CLC Jeroco which location is oil palm plantation. Regardless the limitation, it is pivotal for both students and instructors to be able to learn to make use of available and limited resources to achieve the great result from the digital story telling.

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