Learning from Nature: *Subak* Legacy of Culture in Entertainment Education

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Abstract

Incorporating Agriculture Practise into Education (5)

Subak as a world cultural heritage is an invaluable treasure for Indonesia, especially the area of Bali. Althogh Subak has entered the cultural heritage, but does not make the Subak becomes famous in the younger generation. Therefore, the introduction of Subak especially on students is very necessary to do. The purpose of this study is to analyze the learning content that can be done in the subak area as well as to introduce and use subak as an innovative learning media by collaborating with modern technology. The method used is literature research method that examines the final study of students of Biology Education Program FKIP Unmas Denpasar. The sample in this research is the result of the end of student study which is cognate with the utilization of subak as learning media from 2013 until 2016. Result of research indicate that subak has been exploited by student of teacher candidate in contextual learning by approaching student to subak cultural heritage with fun way that is by collaborating subak cultural heritages with modern technology in the form of cameras that can be used to produce creative work in the form of video learning, photovoice and learning modules which can then be used to hone the ability of critical thinking, creativity, social competence, interest in learning, and interest in preserving subak. The conclusion of this research is that subak area can be used as contextual learning media, able to bring the subak closer to the younger generation through education.

Keywords
Subak; education; learning media; students

1. Introduction

Subak for farmers and researchers is a familiar term that embraces culture and people (in this case peasants) who form an organization that regulates all activities related to agriculture. Subak is a traditional organization of farmers in Bali that aims to manage water irrigation, and rice cropping patterns in rice fields. Formerly known only Subak rice field but now there is also Subak which includes dry land. Subak has the place of a customary law community that is socio, agro and relegius (Surata, 2013). Subak has also been declared a World Heritage by UNESCO in 2012 as a non-object category world heritage. So famous subak in the world, but apparently in the field of subak education is not as popular. Most students limit the notion of subak only as a group of farmers who manage wetland water, without ever knowing other socio-cultural aspects contained in subak.

But unfortunately subak less popular in education. The lack of students' understanding of subak provides a challenge for lecturers and teachers as the initiators of education to better introduce students to subak by utilizing subak as an innovative

learning medium that is collaborated with modern technology. Modern technology that is able to make today's students want to know and learn from subak is by utilizing the smartphone it has, that is by making videos and taking pictures related to the subject matter. Learning activities from video or photos that have been taken from subak then collaborated with the learning model that aims to hone the three intelligence domains held by students who are summarized in 4 core competencies. The first core competence is that students will be able to admire God's greatness, give thanks and admire the beauty of nature created by God. The second core competency is that which facilitates the affective domain associated with the student's ability to work with others, social relationships and the ability to respect others. The cognitive domain can be honed by doing the test of learning outcomes summarized in the third core Competence, and the psychomotor aspect is fenced in Competence four that is capable of presenting, and making a work in this case related to using subak as a learning material.

Learning activities that utilize subak have been continuous (continued) implemented in biology education study program FKIP Unmas Denpasar by utilizing the final assignment of students as an event to introduce and bringing the subak into the world of education. In this case lecturers, teachers of science and biology subjects and students work together to direct students to learn subak-based, either by introducing students directly to subak, or by using other media in the form of modules, photos or video deliberately taken diarea subak as material learn.

The purpose of this study is to analyze the learning content that can be done in the subak area as well as to introduce and use subak as an innovative learning media by collaborating with modern technology.

2. Method

This research is a qualitative research with type of literature study. Literature research is an activity related to library data collection methods, reading and recording and processing of literature materials without the need of field research (Mestika, 2004). The sample studied is a student's thesis of Biology Education Program FKIP Unmas Denpasar related to subak utilization from 2013 until 2016. Sampling using purposive sampling technique. Sources of information used to enrich the description of this research is the result of observations of researchers from the students of Biology Education FKIP Unmas Denpasar. The data obtained in the learning activities that utilize subak area are then analyzed and used as literature in an effort to bring students closer to the subak that has been recognized as world heritage.

3. Result and Discussion

From the thesis used as a sample can be found variations in the utilization of subak area as a medium of learning and assessment of various aspects of competence of learners. The results of the analysis show that the context of learning that can be done in the subak area is to create innovative learning media and simultaneously hone the interest of learning and interest in subak conservation in the learning process. Photovoice to study the behavior of groups of students, in subak utilization activities as a place of student learning. In the learning process students create and use photovoice as a medium to learn from nature to hone students' social skills that is group behavior.

The results showed that there was a positive correlation between the photovoice that made by the students during the learning process in the subak area on the behavior

of the group of students. This means that the implementation of cooperative learning with photovoice based on subak area influences student group behavior. Increased group behavior, as cooperative learning employs students to put themselves in a social environment such as learning to value the opinions of others, to train students' participation skills in the learning process, to provide opportunities for students to exchange learning experiences, motivate students to compete in a sportive manner, train students to responsible, spur the students to be more creative because of conducting varied group activities, and train students to dare to express his opinion. Students become more familiar with each other, comfortable in expressing opinions with friends, the mastery of the material to be faster because of mutual discussion and able to cooperate in completing the task (Dewi, 2011).

Innovative learning media that is photovoice able to arouse curiosity and able to motivate students to produce the best work. Because photovoice is a practical, simple, and effective technology-based learning to enhance understanding and develop student social interaction (Perry, 2009). This medium is interesting because it is new to the students and learning by using the image becomes more interesting and more quickly understood. The learning atmosphere in the subak area makes students happy, because students can learn outside the classroom. Direct learning in the subak area is one of the innovations to teach students about science materials as well as to know their culture. The same is also stated by Sudiana, et al (2009), that through learning biology science that is integrated with the traditional knowledge of subak, students feel the learning activities become more fun and meaningful, because students can construct their own knowledge based on previously possessed knowledge and experience in life actual.

Positive correlations also occur between group behavior and student presentation results. There is a positive correlation between group behavior and student presentation results as outlined in concept maps. Students utilize the module in the learning activities conducted in subak area. This means that learning IPA by utilizing the etnoscience module can hone student group behavior, as well as improve student presentation results. This is because students are able to learn together, mutual skills in learning (Prasetya, 2012). This increase can occur because the ethnosciences module collaborated with photovoice as a learning medium and integrated with the subak cultural landscape provide a similar experience of the subak environment to the students, and can train students to interact and communicate with the group in choosing the topic, to train the students responsible for the preparation of the photo shoot , learn to work together during workshops and provide opportunities for students to develop their own ideas by narrating the photos they take (Date Dating, 2011). It also supports the statement of Arsyad (2013) in his book that the statement of instructional media has several benefits that can clarify the presentation of messages or information, can direct the attention of students, can overcome the limitations of senses, space and time, and can provide the same experience to students about events in their environment, and allow direct interaction with their teachers, communities, and the environment.

Photovoice is one of the learning media that utilizes tehknologi so that students learn to think critically and train students to express opinions and ideas through photos that have been taken, and not emphasize on the quality of the resulting image. According to Partini (2012), the positive value of the application of photovoice based on subak culture landscape is in addition to more interesting and innovative learning, students can also utilize their technology such as handphone, or camera with appropriate, and utilization of subak as workshop location provides opportunity for students to be closer

to nature that will nurture students' awareness of the environment. Opinion is in line with the results of research from Wijaya (2013) which states that the use of subak and photovoice in learning to make students more active and the atmosphere of learning becomes more fun.

Students are trained to create a learning media in the form of photovoice located in subak area. In addition to sharpening group behavior in working on the task of composing photovoice, learning in the subak area can also be used to develop students' science stance. Differences in the attitude of science look very real between the before and after the manufacture of photovoice media. This is because students learn in a fun atmosphere, directly interact with nature so that interest in science becomes greater. This affects the resulting photovoice results. This is in line with the opinion of Ikshan, et al (2006) who stated that students who have a positive attitude to science that they feel happy to learn science either learn in the classroom or anything related to science in their daily life. And from the data obtained shows students have a very positive attitude towards science (Partini, 2012). This is in line with the results of the Nordin (2010) study which shows students have a perception of the importance of positive science and regard science as closely related to their lives.

A positive attitude toward science has an effect on students' interest in learning. From the result of the analysis of learning activities conducted in the subak area visible difference in the interest of science learning is very real. This is due to the innovation in inquiry model through story mapping based on subak. This activity provides an opportunity for students to learn actively in building what they already know or think of something based on their experience, and given the freedom to express creative ideas that are linked in problem solving to story mapping (Kencanawati, 2013). This opinion is supported by research conducted by Budiada (2010) which suggests that in the implementation of guided inquiry learning model, students are given the widest opportunity to experiment, discuss, propose ideas to build or construct knowledge in their minds. This knowledge will be longer remembered because students do their own learning experience.

In addition, the application of story-based mapping subak is one of the alternative environment-based learning. Students draw and narrate a problem in the subak area associated with Biology. Thus students can hone their ability in the art of drawing or in sharpening intellectual students in solving a problem. It also makes a reason to participate in preserving the existence of subak in Bali. This opinion is supported by research conducted by Surata (2005) which proposed through art approach in environmental education by using subak as a model, it is expected that students can develop an intuitive appreciation to the environment, referring to local culture value, support political action and expand intellectual understanding they. In addition, by learning through story-based subak mapping that emphasizes on environment-based learning to make students eager and motivated to follow the learning. This is in accordance with the proposed by Wasti (2013) to improve student learning outcomes, one of which is to cultivate the spirit of interest in learning itself, because with the interest of learning will participate in the process of how to start, plan and perform the practice.

Another way to increase the interest of subak preservation is by using the learning model combined with the video media. Students are invited to participate in video making, students will be invited and taught to make video as well as play the role of biological material related to subak, so through the learning process of interest and

pleasure of students to subak can be created (Anggara, 2013). Basically feeling happy is one indicator of the formation of interest in someone. Interests are basically a sense of fun and interest in something. So with the pleasure and interest of students to subak, students' interest to preserve subakpun can be grown. This research is supported by the opinion of Djamarah (2011), which states to arouse students' interest in a new object is to use the interests of students who have been there. Based on this opinion, in this study is assumed to increase the interest of Subak ecosystem conservation is by exploiting the interests of the previous students that interest in learning.

From the discussion it can be seen that the students of Biology Education FKIP Unmas Denpasar have utilized subak area in the learning activities, which results indicate the existence of innovation in learning activities that use subak area. Context of learning that is done is the utilization of photovoice, story mapping and video participatory. And these activities have a positive impact on the attitude of science and interest in the preservation of subak.

4. Conclusion

It can be concluded that the learning activities undertaken by the students of Biology Education Study Program have utilized subak area with learning innovation in the form of photovoice, story mapping and participative video that have positive impact to the attitude of science and interest of subak preservation.

Reference

Anggara, B.K. (2012) Pengaruh Model Pembelajaran Kooperatif Tipe Group Investigation Dengan Penerapan Video Partisipatif Terhadap Minat Pelestarian Subak Siswa. (Skripsi tidak dipublikasikan). Universitas Mahasaraswati, Denpasar

Budiada, I. W. (2010). Pengaruh penerapan model pembelajaran inkuiri terbimbing berbasis asesmen portofolio terhadap hasil belajar kimia siswa kelas x ditinjau dari *adversity quotient*. Dipublikasikan pada *Jurnal Penelitian Pascasarjana Undiksha*. Tersedia pada http://pasca.undiksha.ac.id/e-journal/index.php/jurnal_ep/article/view/36. Diakses tanggal 13 Februari 2018

Dewi, S.A.I.U. (2013). *Pengaruh model pembelajaran kooperatif tipe group investigation (gi) dengan media photovoice berbasis lanskap budaya subak terhadap perilaku berkelompok siswa smp amarawati tampaksiring*. (Skripsi tidak dipublikasikan). Universitas Mahasaraswati, Denpasar.

Djamarah (2011) Djamarah, S. B. (2011). *Psikologi Belajar.* Jakarta: PT Rineka Cipta.

Kencanawati, dkk. (2012). Pengaruh Model Pembelajaran Inquiri Terbimbing (*Guided Inquiry*) Melalui *Story Mapping* Berbasis Subak Terhadap Minat Belajar Ipa Biologi Siswa Kelas Vii Smp Wisata Sanur. (Skripsi tidak dipublikasikan). Universitas Mahasaraswati, Denpasar.

Mestika, Z. (2004). *Metode Penelitian Kepustakaan*. Yayasan Bogor Indonesia; Jakarta

Partini, N.L.K., Surata, S.P.K., Puspawati, D.A. (2012), Pengaruh *Photovoice* Berbasis Lanskap Budaya Subak Terhadap Perilaku Berkelompok Dan Sikap Sains Anggota Kir Sma Kristen Harapan Denpasar. (Skripsi tidak dipublikasikan). Universitas Mahasaraswati, Denpasar.

Perry, B. (2009). *Creating a culture of community in online courses.* Diunduh dari http://auspace.athabascau.ca/handle/2149/2159. Pada tanggal 20 Januari 2013.

Prasetya, T., Puspawati, D.A., Surata, S.P.K. (2013) Korelasi Antara Perilaku Berkelompok Dan Hasil Presentasi Peta Konsep Siswa Dalam Pembelajaran

Kooperatif Berbasis Modul Etnosains Subak. Jurnal santiaji Pendidikan Vol.3, Nomor 2. Diunduh dari: http://fkip.unmas.ac.id/jurnal-santiaji-pendidikan-jsp-vol-3-no-2-2013/ pada tanggal 6 Mei 2018

Sudiana, I. M, & Surata, I. K. (2009). Pendidikan dan latihan merancang pembelajaran ipa biologi melalui pendekatan keterampilan proses berbasis pengetahuan tardisional dan lingkungan subak bagi guru SMP. *Jurnal Bakti Saraswati 1* (2). Diperoleh dari http://www.unmas.ac.id/PDF/JURNA-JBS-VOL-01-NO-02-SEPTEMBER-2011.pdf. Pada tanggal 22 Mei 2013.

Surata, S.P.K. (2013). Lanskap Budaya Subak. Denpasar; Universitas Mahasaraswati Press.

Surata, S. P. K, & Seniwati, N. P. (2005). Kegiatan menggambar berbasis subak sebagai model pendidikan lingkungan bagi siswa SD di Bali. *Jurnal Pendidikan dan Pembelajaran 13*(2), 166-174.

Wasti, S. (2013). Hubungan minat belajar dengan hasil belajar mata pelajaran tata busana di madrasah aliyah negeri 2 padang. Dipublikasikan pada *Jurnal Universitas Negeri Malang*. Tersedia pada http://ejournal.unp.ac.id/index.php/jhet/article/download/1032/869. Diakses tanggal 2 Juni 2013.

Wijaya, I.M.T.S. (2013). *Korelasi Antara minat belajar dan minat pelestarian ekosistem subak dalam model pembelajaran kooperatif tipe investigasi kelompok berbasis photovoice di SMP Ambarawati Tampak siring*. (Skripsi tidak dipublikasikan). Universitas Mahasaraswati, Denpasar.