PBL BASED-LOCAL CULTURE SCIENCE TO CREATE A MEANINGFUL LEARNING

by Ria yulia Gloria

Submission date: 08-Jun-2020 04:23AM (UTC+0700)
Submission ID: 1339560268
File name: PROCEEDING_UPGRIS.pdf (5.5M)
Word count: 2846
Character count: 16253

ISBN: 978-602-8047-83-8

PROCEEDINGS

International Conference
Enhancing Education Quality
In Facing Asian Community

Management and Governance

Quality Assurance

Teaching and Learning

Post Graduate Program
University of PGRI Semarang

Post Graduate Program, University of PGRI Semarang
Main Hall of Gedung Pusat 7th Floor, 30th May 2015
Semarang, Indonesia

Post Graduate Program
University of PGRI Semarang

Proceedings: International Conference
Enhancing Education Quality
In Facing Asian Community

PBL BASED-LOCAL CULTURE SCIENCE TO CREATE A MEANINGFUL LEARNING

RIA YULIA GLORIA
IAIN Syekh Nurjati Cirebon
riyulgloria@gmail.com

ABSTRACT

TIMSS (Trends in Mathematics and Science Study) has conducted tests to determine and demonstrate students' thinking skills profile, the result is a high level of students' ability to think in Indonesia is still low. Therefore Indonesia should try to improve students' thinking skills. One of the way to apply learning is to improve and stimulate students' thinking skills by appropiate learning models. A learning will be said meaningful (meaningful learning) if it is not boring and involves creating a student activity, so that students experience the learning. Typically meaningful learning is contextual and constructivism. Students are trained to build his own knowledge and brought into the real world of their everyday experience. Learning Problem-based learning (PBL) with the local culture science and science-based learning gives students the chance to learn the contextual and constructivism, and can make learning more meaningful (meaningful learning). This paper will discuss how PBL based local culture science which can make learning becomes meaningful.

Keyword : Problem-based learning, meaningful learning, local-culture science, learning model

Introduction

TIMSS (Trends in Mathematics and Science Study) conducted by the IEA (International Association for the Evaluation of Educational Achievement) has conducted tests to determine and show the students' thinking skills profile. Based on the results of TIMSS, it can be said that the students' ability to think critically Indonesia is still low. This indicates that Indonesia should try to improve students' thinking skills. One way is to apply lessons learned to improve and stimulate students' thinking skills. One way is to implement appropriate learning models.

Student's thinking skills will be increased in case of meaningful learning. To obtain meaningful learning, we need to takes appropriate learning models. Learning by applying appropriate learning model that will make learning more meaningful. One model of learning that can improve students' abilities, especially the ability to think is the model of PBL (problem based learning), this model provides an opportunity for students to solve problems and communicate solutions, and encourages students to process their thinking abilities. According to (VOOS, 2003), Problem-based learning is a well-established didactic approach

in medical education, whereas BL can be considered as a relatively new, nonetheless promising, technology driven trend.

Problem-based learning, known as PBL (problem based learning), since the discovery that since 1960 until now, believed to excellent in improving student learning outcomes. Several studies of PBL on average lead to the conclusion that the model PBL is very effective and significant in improving students' learning abilities. PBL would be optimal if combined with local culture science, this is because the local science will teach students to learn to experience the real world around him, which is about the culture of science around the home then becomes more contextual learning.

PBL-based local culture science will provide a memorable learning experience for students. Students will associate the knowledge gained and the knowledge that he already had. According to (Dahar, 2006), meaningful learning is the process of linking new information with prior knowledge.

Problem Based Learning (PBL)

PBL is an instructional model that presents a study that gives a problematic issue and that must be solved by the students, and that will make students move toward an investigation and inquiry. According to (Arends, 2008), the essence of PBL is to present a variety of problematic situations that authentic, and meaningful to students. Meanwhile, according to (Sudarman, 2007), PBL or problem-based learning is a learning approach that uses real-world problems as a context for students to learn critical thinking and problem solving skills, as well as to acquire the essential knowledge and kosep of the subject matter.

Several studies of PBL has resulted in the conclusion. PBL make more effective and meaningful learning, PBL can improve learning outcomes, and better than traditional learning (Maxwell, 2009; Burch, 2007; Goodenough, 2006), research (Eizenberg & Azer, 2007), PBL makes learning more interesting and students become more familiar with the anatomy, the results of research (Katsuragi, 2005), students prefer the PBL tutorial in the lecture, because students become active and feel participate in learning, the results of research (Loureiro, 2009), PBL can develop a common understanding of the community , thus becoming more aware of health, and some issues after learning through discussion. Other research is PBL can build students' knowledge (Marin-Campos, 2004), retention and academic achievement of students who received PBL program better than students who received traditional learning (Burch, 2007), that use of student achievement data assisted PBL on line higher than students

that assisted data base (Ellis, 2008), Blended-PBL managed to increase student motivation (Woltering, 2009). The results of these studies explain the advantages of PBL.

Local Culture Science Based Learning

One example of local science is the local culture science. Culture can be defined as the mind, intellect or customs. in grammar, culture is derived from the word "culture" refers to the meaning of human thought patterns. Then the culture can be defined as all matters relating to the intellect or the mind of man that can be pointed at the mindset, behavior and physical work of a group of people. While the definition of culture according to Koentjaraningrat in Hasanuddin, et.al. (2009),), explained that, "according to anthropology, culture is a whole system of ideas and taste, action, and the work produced by humans in social life gained by learning".

Combining science ang linking it with the local culture or cultures that exist in the community is essential. This is necessary in learning activities. Linking science with the local culture of a region is a contextual learning, which students are encouraged to learn science in accordance with the real life. The local culture is a science of life experience (a natural exsperiment), which for yearshanded down from one generation to the next. This happens through a process ofadaptation to the natural environment and culture in which they are located. Parentsare transforming the original science knowledge through oral tradition to the next generation, and a concrete experience in interacting with its environment (Wayan 2011). Same with opinion of Wayan (Rev. 2009), said the local culture of science is the continuous trial result and is local. Local culture science superiority lies in its supleand resilient in adapting to the changing environment. This led to the utilization of natural resources and environment can be sustained.

Science-based learning local culture is learning that the real object that is associated with the culture. With science-based learning local culture expected students would bemore understanding of the subject matter, because learning to be konstektual.(Wayan, 2011) explained that the application of science-based learning culture can make students more independent and provide opportunities for more students arefree to its own merits, be it initial or knowledge thereafter. Cultural science learning inlocal teachers will present the material in a way blending the culture that developed inthe community with the material being studied. Thus the students not onlyunderstand but can be installed as a form of teaching experience.

The opinions expressed by Subahan (1997), in (Erman, 2013) said that, generally, students are less interested in science subjects. They consider the lessons of science is difficult and hard to understand effectively. In understanding materials science student ideas are often not precise and clear with reality in the environment (contextual).

Steps that can be performed by a teacher in carrying out science-based learning local culture among other things: (1) preparing the material in accordance with theconditions of the culture of the communities that will be observed; (2) creating learning materials that are adapted to the local culture; (3) designing learningscenarios that will be used, in accordance with the guiding learning objectives have been formulated together between teachers, community (School Commitee), local education officials and other component; (4) the selection of teaching methods and media are demanding that students are able to combine local culture with the lesson he had learnied in schools that concept; (6) the learning can start with providing the relevant tasks.

A Meaningful Learning

A meaningful learning is a process of learning in which students become easier to understand the concept provided, because the teacher gave his students to relate to theease of the knowledge and experience that already have. Meaningful learning was first conceived by David P. Ausubel

Ausubel argued that teachers should be able to develop the cognitive potential of students through the learning processmeaningful. Those who are at the level of primary education, it would be better if students were invited to be active and involveddirectly in the activity of learning. Whereas at higher education level, will be more effective if you use annotations, concept maps, demonstrations, diagrams and illustrations.

Four types of learning according to Ausubel :

1. Learning by discovery of meaningful, hooking his knowledge withsubject matter which he had learned or students find his knowledgeof what he learned later he associate new knowledge with existingknowledge.
2. Learning by discovery of the meaningless, the lessons learned were found by students without hooking the knowledge he had, then he has to memorize.
3. Learn to accept (ekspositori) which means, the subject matter has been arranged logically presented to students until the end of the form. Then the new knowledge that is associated with the knowledge he had.

4. Learn to accept (ekspositori) are not meaningful, the subject matter has been arranged logically presented to students until the end of the form, then the new knowledge memorized without associated itwith the knowledge that he had.

A prerequisite in order for learning to be meaningfully according to Ausubel:

1. A meaningful Learning will only occur if the students have a meaningful learning strategies.
2. Learning tasks given to pupils must be in accordance with the knowledge that has been owned by students.
3. Learning tasks given must correspond to the stages of intellectual development of students. (Hidayat, 2011).

Another factor that must be considered to obtain meaningful learning is performance feedback. The common factor that affects the development of meaningful learning. Feedback will restrict meaningful learning to divert attention from the information obtained, thereby disrupting the motivation to think about the underlying structure of the task (Einhorn, 1980; Goodman, 1998; Salmoni et al., 1984; Winstein and Schmidt, 1990; Kluger and DeNisi, 1996) in (Weber, 2008) Accordingly, it should be to get a meaningful learning students are free to seek information in answer to the problem. In this case the PBL will make the students are free to think and find the solution of all problems encountered.

PBL- Based Local Cultural Science to Create a Meaningful

PBL-based science learning local culture will give students a learning experience that can stimulate their thinking skills. Learning this will create a more meaningful learning. By integrating science problem-based learning with the local culture, the students will be taught how to solve complex problems at once familiar with their culture. In addition to the local culture of science in PBL, students will be exposed to real-world problems that exist in the environment they are. By learning as it is expected that students will be more motivated to learn, so that learning becomes meaningful.

The example below is a material science Biology environmental pollution concept that uses PBL -based local culture science such as batik culture in Cirebon, West Java, Indonesia:

> "The concept of environmental pollution Biological materials students are given questions that stimulate them to think of a solution to solve the problem. The teacher's problem is a problem of the polluted environment, which is related to the presence of waste due to the production of batik (batik is typical of Indonesian culture). Batik waste dumped into the river has caused the problem, there is the

possibility of a government cover batik industry which is the local culture, what should be done by the students to get out of the problem. "

Examples of materials science is the concept of Biodiversity Biology that uses PBL-based local culture science in the form of culture "munggah suwunan" in Indramayu, West Java, Indonesia:

> "The concept of biodiversity Biological material students were given the problem of how culture "munggah suwunan" associated with biodiversity, what problems could be caused if the culture is being conducted, whether biodiversity, particularly the diversity of plants will be disrupted"

With the given problems associated with the prevailing culture in the community, the student will be allowed to argue for a solution to solve. This debate will continue, students will continue to think of a solution and its relationship with culture. arguing when there is a possibility they will also associate with the economic and other disciplines, it becomes a multi disciplinary learning. So that science-based PBL local culture will teach students to solve the problem involved in real-life situations. So this kind of learning will be a meaningful learning.

Conclusion

Students need of learning that stimulates thinking, which gives the experience according to what's in the surrounding environment. The learning is contextual and constructivism. Learning that make students try to solve problems with a variety of viewpoints and linking various disciplines. According to (Jensen & Nickelsen, 2011), there are many steps thinking to achieve deeper learning, the learning will require multiple operating rules we follow to complete tasks and problems.

PBL-based local budya science can make learning becomes more profound and meaningful. A teacher organization in the United States suggests that science teachers should be able to identify a nd use resources from outside the school, through the introduction of family and cultural environment of learners (Poedjiadi, 2005). In addition to the local culture, the science students will also learn according to what they find in the everyday environment, according to (Johnson, 2007), linking learning with one's life makes learning come alive and memorable. When students can associate the content of academic subjects such as math, science, or history with their own experience, they will find meaning and a reason to learn. So for meaningful learning needs learning model as PBLa -based local culture science , making a learning so much fun as according to (Vos, 2000), create a pleasant climate in the study.

References

Arends, R. I. (2008). *Learning To Teach (Belajar untuk Mengajar)*. Yogyakarta: Pustaka Pelajar.

Azer, N. E. ((2007)). Do we need dissection in an integrated problem-based learning. *Surg Radiol Anat*, 173-180.

Burch, V. a. (2007). Performance of Academically at-Risk Medical. *Advances in Health Sciences Education 12*, 345-358.

Dahar, R. W. (2006). *Teori-teori Belajar dan Pembelajaran* . Jakarta: Erlangga.

Eizenberg, N., & Azer, A. S. (2007). Do we need dissection in an integrated problem-based learning. *Surg Radiol Anat*, 173-180.

Ellis, R. A. (2008). Student experiences of problem-based learning in pharmacy: conceptions of learning, approaches to. *Adv in Health Sci Educ 13*, 675-692.

Erman, H. (2013). karakter Budaya Sains ASli dan Karakter Budaya Sains Modern pada Pelajar Sekolah Menengah Atas di Sumatera Barat, Indonesia. *Sosiohumanika*.

Goodenough, D. &. (2006). Applying problem-based learning to the teaching of anatomy: the example. *Surg Radiol Anat*, 189-194.

Hasanudin, W. (2009). *http://cianjurkab.go.id*. Retrieved September 13, 2013, from Ensiklopedia Sastra Indonesia.

Hidayat, R. (2011, 11). *Anak Ciremai*. Retrieved 12 18, 2014, from http://www.anakciremai.com/.

Jensen, E., & Nickelsen, L. (2011). *Deeper Learning*. Jakarta: Indeks.

Johnson, E. B. (2007). *Contextual Teaching & Learning*. Jakarta : MLC.

Katsuragi, H. (2005). Adding problem-based learning tutorials to a traditional lecture-based. *Odontology* , 80-85.

Loureiro, I. &. (2009). Developing public health competencies through building. *J Public Health*, 417-424.

Marin-Campos, Y. a.-M. (2004). Students' Assessment of Problems in a. *Advances in Health Sciences Education 9*, 299-307.

Maxwell, R. L. (2009). The effects of problem-based learning integration in a course. *Eur J Clin Pharmacol .vol. 65*, 231-237.

Poedjiadi, A. (2005). *Saiins Teknologi Masyarakat*. Bandung : Rosdakarya.

Rofiah, E. N. (2013). Penyusunan InstrumenTes Kemampuan Berpikir Tingkat Tinggi Fisika pada Siswa SMP. *Jurnal Pendidikan Fisika (2013) Vol.1 No.2 halaman 17*, vol.1 No.2 halaman 17.

Sudarman. (2007). Problem based learning : Suatu Model Pembelajaran untuk Mengembangkan dan Meningkatkan Kemampuan Memecahkan Masalah. *Jurnal Pendidikan Inovatif*, 68-73.

Voos, R. (2003). Blended learning—what is it and where might it take us? . *Sloan-C View, 2(1)*, 2-5.

Vos, G. D. (2000). *The Learning Revolution*. Bandung : Kaifa.

Wahyu. (2009). *Kearifan Lokal Petani dayak Bakumpai dalam Pengelolaan Padi di lahan Rawa Pasang Surut Kabupaten Barito Kuala*. Banjarmasin: Universitas Lambung Mangkurat.

Wayan. (2011). Efektivitas Model Pembelajaran Berbasis Sains Budaya Lokal untuk Mengembangkan Potensi Dasar Sains dan Nilai Kearifan Lokal di SMP. *Lembaga penelitian Undiksya*.

Weber, R. A. (2008, February 20). Meaningful learning and transfer of learning in games. *wharton University of Pennsylvania*.

Woltering, V. Æ. (2009). Blended learning positively affects students' satisfaction. *Adv in Health Sci Educ 14*, 725-738.

PBL BASED-LOCAL CULTURE SCIENCE TO CREATE A MEANINGFUL LEARNING

ORIGINALITY REPORT

13%	12%	5%	9%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Universitas PGRI Semarang Student Paper	4%
2	Submitted to Universitas Terbuka Student Paper	2%
3	digilib.unimed.ac.id Internet Source	2%
4	matematika.fmipa.unp.ac.id Internet Source	1%
5	link.springer.com Internet Source	1%
6	www.childresearch.net Internet Source	1%
7	opim.wharton.upenn.edu Internet Source	1%
8	Submitted to Higher Education Commission Pakistan Student Paper	<1%

9	Imega Syahlita Dewi, Rina Puji Utami. "The implementation of PODE worksheet to improve students' scientific attitude, analysis ability and self-regulation", AIP Publishing, 2019 Publication	<1%
10	de.teikav.edu.gr Internet Source	<1%
11	sitsefmipa.unimed.ac.id Internet Source	<1%
12	aip.scitation.org Internet Source	<1%
13	S Supriyadi, I D Palittin, A Reski, A M Fadlih, Mitra Rahayu, N Abdullah. "Heat exchanger in process of making sagu sep as papua's contextual science learning media", IOP Conference Series: Earth and Environmental Science, 2020 Publication	<1%
14	eprints.upgris.ac.id Internet Source	<1%

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		