ROLE PLAY SIMULATION AS TRANSFORMATIVE METHODOLOGY IN ENVIRONMENT EDUCATION FOR ELEMENTARY STUDENT IN INDONESIA.

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ABSTRACT

Environmental education and sustainability practices in schools have been emerging as an important trend in 21st century education, and a growing body research and practices indicates that green schools can save money, improve health of students and boost academic achievement. Environmental Education has a very crucial thing in creating human role in saving this planet to be sustainable. How do students behave in environment, how do students control the biological nature?  

It is very important to think of every human being can live in harmony with nature. One of strategy can be applied to enhance student’s awareness to be connected with nature by promoting environmental education. This research will introduce a role play simulation as transformative methodology in environmental education for elementary students in SDN 001 South of Balikpapan, East Kalimantan, Indonesia. The study used interview method, focus group, observation and documentary analyze, followed by discussing potential benefit in applying transformative learning in environmental education. The research will focus on changing process instead of role playing the simulation, and observing some approaches which are needed to promote sustainable behavior. For example, within two hours, students will be actively playing in small groups and take role as trees. During this simulation, the students will discuss about their feelings of being a tree. At the end, students have to make a simple report explaining the reason of choosing the tree and feeling thereof. One of the purposes of this learning is to encourage students by making them aware about the problems, to analyze, and how to solve them.  

Field of Research: role playing, methodology, transformation, environmental education  

1. Introduction  

Environment is essential for all life forms on the planet earth. There is dependence of all living beings, including human beings, on the environment, with which they interact continuously. However, human beings are solely responsible for changing the environment by indiscriminate use of the natural resources. Therefore, the onus of protecting the environment for the present and future generations also rests with human beings alone. So we need environmentally literate citizens. For this environment education is required, so that people become aware and take active part in protecting the earth’s environment by making informed decisions and taking environmentally friendly actions (Tbilisi UNESCO-UNEP I977:81).
Environmental education history reveals interlocking relationship between the changing concept of the problems related to the environment. The environmental education is promoted as a way to solve problems concerning the environment. In 1996 there was a cooperation agreement about Environmental Education programs in Indonesia between the Ministry of Education and The Ministry of Environment, which was renewed firstly in 2005 and secondly in 2010. Based on 2005 agreement, in 2006 the Ministry of Environment developed environmental education programs at primary and secondary education levels through Adiwiyata Program. National Education Standards as furnished was mentioned in the National Regulation of Ministry of Education No.19, 2005, which is translated into eight standard education management. Since 2006 the Indonesian Ministries of Environment and Education has been working jointly to promote environmental education, within the framework of a program for Education for Sustainable Development.

The aim of Adiwiyata School Programs is encouraging school to adopt behaviors that respectful towards the environment. (http://www.menlh.go.id). Such as, it supports the development of policies in the field of learning, capacity building, environmental protection, creation of a healthy and clean, school environment and the use of funds for activities related to solving environmental problems. The school as a creator and manager should be responsible for the whole process of planning, implementation and evaluation of the curriculum based on environment. Further activities must be carried out continuously in a comprehensive manner.

Role play simulation in education brings students to another part of the world by implementing their knowledge, skills, and strategies in the implementation of their assigned roles. The implementation of games and simulations for educational purposes is that all participants take a certain role, have capability of critical thinking in addressing the problems or solving problems that are caused by their own decision. We created a situation and a different direction, depending on the actions and reactions from the participants. It has have already set to start their career in any particular company or industry. For instance, it was found that students frequently mention direct and vicarious exposure to work experiences as shaping their expected choices (Lent et al., 2002).

2. LITERATURE
2.1 Role Play
Playing in education is a competitive exercise where the goal is to win the students / learners. Action (action) is governed by the rules of the game (including penalties for acts that are less good) and all support equipment (Gredler, 1992)

2.2 Purpose of Role Play
Purpose in role play simulation:

1. To practice and refine the knowledge gained and skills.
2. To identify gaps or weaknesses in knowledge or skills.
3. To develop new relationships between concepts and principles.

2.3 Characteristics of Role Play
One form of environmental learning method is to play the role an important characteristic of a role-playing simulation is as follows:

1. Availability complex models in real situations and interaction between the students (referred to as fidelity or validity)
2. Defined roles for each participant with the responsibilities and constraints of the role.
3. The data-rich environment that allows students to execute a variety of strategies, from targeted decision-making or "shotgun"

4. Feedback for actions of participants in the form of changes in the problem or situation.

   Two concepts are important in the analysis of games and simulations: surface structure and deep structure. Briefly, surface structure refers to the paraphernalia and observable mechanics of an exercise (van Ments, 1984)

   Explicit teaching of these capabilities prior to engagement in a simulation is important for another reason. Specifically, it is that learners cannot develop advanced cognitive and self-regulatory capabilities unless they develop conscious awareness of their own thinking (Vygotsky, 1998a, 1998b)

   The theory principle directly focuses on researchers criticize that student’s interaction with the environment showed that students in the stage of metacognitive thinking in discussions with their peers, but these skills are not apparent at the end of the test. Lack of student awareness in a particular experience or strategy in taking a chance, researchers are looking for solutions but do not focus on students thinking in the past. Based in this, a role play simulation need linked context and the teachers should be pay more attention in developing this method in order to achieve the final goal. In other words, it is very important for teachers to explore the potential role playing simulations to study the cognitive and metacognitive.

3. Methodology

   200 elementary students grade 5 from two elementary school, SDN 001 Balikpapan Selatan and SDN Gisikdrono 02 Semarang in Indonesia was the focus of this simulation based on their prior outdoor learning in Balikpapan Botanical Garden and in garden school. Teacher bring them to environmental learning by exploring Botanical Garden in group. An observation paper with open questionnaire was use in assessing the students’ self reported experience and feedbacks.

   In the last environmental class, teacher ask them to choose what kind of tree species they want to be. Teachers also ask them to express their feelings through writing or some other work such as drawing, writing poems or songs about the tree.

   The analysis data has been collected through interview, focus groups, observation and documentary analysis. Teachers can either take notes during their interviews (transcribing) or observations, or take a recording. All responses should be noted including responses from an unstructured interview. By using the collected data, teachers are able to describe the phenomenon and make conclusion. The results of this paper and video will be analyzed through changes in student’s attitude, before and after simulation.

4. Results and Discussion

   The students experience and role play simulation should continue to develop. The implementation of role play simulations have weaknesses and strengths in planning, process in implementation and monitoring of student’s approach in solving problems in complex form. The concept of role play simulation is mental development in depth and students engage in “discovery scientific learning” to draw connections between certain input variables and result variables.
It provides an introduction to the guidance system intelligently in helping students to find their own answers as a result of their own thinking process, enhance student creativity, and stimulate students in real imagination. Role play learning can be implemented in the school or outside of school, depending on the availability of facilities and infrastructure that support learning environment. Students tend to be more challenged when they learn outside classroom.

Table 1 below highlights the advantage of role play simulation on environmental learning.

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<tr>
<th>Advantages</th>
<th>Description</th>
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<tr>
<td>Competition</td>
<td>Environmental learning needs of the individual approach and role play adapt to level of the individual in competition.</td>
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<tr>
<td>Feedback</td>
<td>Role play simulation give feedback in learning process and role play provide feedback between the students.</td>
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<tr>
<td>Active Learning</td>
<td>Environmental learning should make students more active and role play provide an active discovery in construction of new knowledge.</td>
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<tr>
<td>Motivation</td>
<td>Students are motivated when presented with meaningful activities, and reward in role play engage students in achieve the goal.</td>
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5. Conclusions and Future Recommendation

5.1 Conclusions

Impact of Role Play simulation:

1. Increased capacity in terms of communicating, they were able to appreciate themselves with the results to achieve them.

2. Students develop advanced cognitive and self-regulatory and convince ourselves in order to become a promoter for his friends.

3. Increased motivation to study.

4. Boost academic achievement

5. Increased creativity.

6. Developing self-awareness of their own ideas.

7. Stimulate student’s metacognitive thinking in discussions with partners in the group.

There is a growing body of evidence that students has developed a different set of attitudes and aptitudes as a result of growing up in role play simulation in environmental learning. While this may provide great advantages in areas such as their ability to use technology in work collaboration in small groups. Teachers characteristics need to improve to be more sustainable. Interaction with nature and environment in small group enhance self-confidence and communication skills faster than indoor learning. The students experience and role play simulation should be continued to develop. The implementation of role play simulations have
5.2 Future Recommendation
In line with this study, there are a couple of suggestions submitted:

1. Teachers are advised to be more active in the learning condition, can use innovative learning models that can attract students’ interest in learning so that the material can be well taught.

2. Students are advised enthusiasm in learning, more active in learning, and more active in learning. As well as happy and not ashamed to do the game Talking Stick in learning as an effort to improve student achievement.

3. Students should be able to improve the results of their study is to enterprising, and active in learning, and teachers should motivate students to improve their learning, and applying the model-model innovative learning. The need for further research, because this research is an attempt to further improve learning outcomes.

Overall, the findings of this method in study showed increased resources in role plays as active learning approaches in environmental education. In addition, there would be a value in assessing the association between schools and government organizations or non-government organizations in supporting environmental educations. The authors recommend that teachers need to improve their skills and knowledge to get connected and across all disciplines of study. Teachers need to learn in adjusting environmental issues form the physical, geographical, sains, math, art, history curriculum to develop insights for understanding student behavior and its impact on the environment.

References


