



Scientific Attitudes, Activities and Learning Outcomes of Student in Material of Fungi Using Model Predict Observe Explain (Poe) Based on Bioedutainment

Dewi Widiyaningrum^{1✉}, Siti Harnina Bintari¹, Margareta Rahayuningsih²

Biology Department, FMIPA, Universitas Negeri Semarang, Indonesia

Info articles

History Articles:

Received : August 2018

Accepted : September 2018

Published : December 2018

Keywords:

*predict observe explain (POE);
bioedutainment; student
activity; scientific attitude;
fungi*

Abstract

This study aims to determine the effectiveness of the POE model based on the bioedutainment implementation in the material of fungi towards activity, scientific attitude and learning outcome of VII grade students. This study uses a one-shot case study research design. The population of this study is students of class VII SMPN 1 Secang, while the sample is students of class VII B. The hypothesis used is that POE method based on bioedutainment is effective towards the learning outcome of the students. The sample was taken by purposive sampling method. POE based on bioedutainment was applied to the sample class by using game elements in each POE syntax. The results of this study indicate the percentage of student activity is 83% and the percentage of their scientific attitude is 70% in the category of good and very good. The result of student learning completeness is 70% with an average value of 80.33. The teacher's response stated that students became active and enthusiastic about learning. The conclusion of the study is that the POE model based on bioedutainment is effective towards the activity, scientific attitude, and learning outcome of the students.

© 2018 Universitas Negeri Semarang

✉ Correspondence:
Gedung D6 Lt.1 Jl Raya Sekaran Gunungpati Semarang
E-mail: dewiwidiyaningrum.191@gmail.com

p-ISSN 2252-6579
e-ISSN 2540-833X

INTRODUCTION

Science learning should involve more students in learning process such as conducting observation in proper way, finding fact, or concept from the observation that have been conducted, and having an open-minded and objective attitude, reality-oriented, responsible, etc. or it can be said that they have a good scientific attitude (Trianto, 2010). Teachers as facilitators who understand well the student learning process are supposed to provide guidance and provide an appropriate and harmonious learning environment for students (Hamalik, 2010).

The learning process in SMPN 1 Secang, it is known that when class learning tends to be crowded and many students do not pay attention to the teacher. The interaction between teacher and students at the time of learning is still relatively low. The low enthusiasm for student learning can be seen from the low response of the students during the learning process because only a few students are active to ask a question and answer the question from the teacher. According to the results of UAS, there are 16% of students whose learning outcomes fulfill the KKM.

Predict Observe Explain (POE) can support the process of learning activities. According to Kearney (2014), POE learning model can be an effective teaching strategy to facilitate students' understanding of a concept. POE model helps students to achieve a better conceptual understanding and motivate students to carry out investigation activities (Costu, 2011).

Characteristic of VII grade students who are still happy to play underlies the use of bioedutainment to support each stage in POE so that the learning can be centered on the students and it can be more enjoyable. Bioedutainment is a biology learning strategy that is entertaining and fun. Bioedutainment contains the element of science learning, scientific process, work skill, cooperation, educational game, competition, challenge, and sportsmanship. All of them are packed in the form of entertaining and fun learning (Marianti 2006), so that the use of POE models combined with bioedutainment, which is conducted in this study, is expected to have a positive effect on learning. This study aims to find out the effectiveness of the POE model based on bioedutainment implementation in the material of fungi towards activity, scientific attitude and learning outcome of VII grade students.

RESEARCH METHOD

This study uses a pre-experiment method with one shot case study design. The variables of this study are the POE model based on bioedutainment as the independent variables and activity, scientific attitude and learning outcome as dependent variables. The population of this study is all students of class VII SMPN 1 Secang year 2015/2016. Meanwhile, the sample of this study is students of class VII B. The sample was taken by purposive sampling technique.

The procedure of the research consists of the preparation stage, implementation, and data analysis. The research was carried out in four meetings with total 8 study hours. The method of data collection is in the form of tests (post-test) and non-tests (activity assessment, scientific attitude, student response questionnaire).

The effectiveness of POE learning model based on bioedutainment was analyzed by descriptive qualitative, calculating the classical completeness of students, calculating the average activity and scientific attitude.

RESULTS AND DISCUSSION

The result of the study is knowing the effectiveness of the POE model based on bioedutainment implementation in the material of fungi towards activity, scientific attitude and learning

outcome of VII grade students. The effectiveness of the use of POE model based on bioedutainment implementation in the material of fungi can be seen from the criteria of learning outcome that is $\geq 70\%$, with KKM 75.

Learning outcome using the POE model based on bioedutainment

Students learning outcome obtained from posttest at the end of the learning. The percentage of the students completeness reaches 70%. The average of the learning outcome is presented in Table 3.

Table 3 Recapitulation of learning outcomes

Student learning outcomes	VII B
The average post-test score	80
Students complete the KKM	21
Students do not complete the KKM	9
Percentage of completeness(%)	70

The POE model based on bioedutainment has an influence on the learning outcome. It is proven by the student learning outcome that shows an average value of 80 with the completeness of 70%. It may happen because during learning the students feel happy with the learning method which is conducted by playing a game so that most of them get good post-test results. From the results obtained, there are 9 students who do not complete the KKM with the highest score of 96 and the lowest score of 51. Students who do not complete the KKM are suspected due to their lack of understanding of the material and their lack of preparation for the test. Further, they do not actively play a role in each group activity which is done during the learning, so that the learning evaluation is not satisfying, it does not reach the KKM value of 75. Another possible factor is that during the learning process some students are still confused with the game used so that they cannot follow the learning properly. The POE method based on bioedutainment is effective in the student learning outcome. It is supported by the result of Ni'mah (2012) and Amanah (2013) researches which state that the implementation of POE method in natural science learning effectively increases the student activity and learning outcome. According to Choirunisa (2014) that the implementation AJEL based on bioedutainment has a positive effect on activity and learning outcome.

The result of student activity shows 83% of students are included in the good and very good category and 17% of students are belonging to sufficient category. It means that the activity in the learning process works well. With the average value of each activity indicator reaches more than 70%, it proves that the method has a good effect on student activity. By observing using a picture card game, it gives something new to the students so that they feel happy and enthusiastic to follow the learning and the activity shown by the students is also good. With POE method combined the bioedutainment is effective to be implemented in the material of fungi with very good and good criteria are more than 70%. It is in accordance with Suryorini's (2012) study that said that the use of bioedutainment method has been successfully implemented with 90% of students being very active.

In this study, which uses a method based on bioedutainment, scientific attitude data shows that 70% of the students are in the good and very good category, it means that most of the students have a good scientific attitude during the learning. In this study, the students are invited to make an observation through the picture card and video so that the students are directed to find their own concept. According to Annisa et al (2013), it can be known that through POE, it can foster students' scientific attitude because they will become more critical and become curious about what actually happened so that they can prove by themselves the actual situation and the result of their research. It shows that POE with demonstration has a significant effect on scientific attitudes and learning the outcome of the students.

Student Responses

Student response questionnaire is used to determine students' responses to the implementation of the method, this questionnaire was given after the learning process and post-test. Student responses show that 90% of students agree to the method. Recapitulation of the student responses is presented in Table 4.

Table 4 Recapitulation of student responses

No. Questionnaire	Statements	VII B %
1	The learning using the POE model based on the Bioedutainment is an interesting learning innovation.	96
2	The learning atmosphere becomes fun, not boring and becomes more excited by learning using the POE model based on the Bioedutainment.	100
3	The learning using the POE model based on Bioedutainment increases scientific attitudes.	86
4	The learning using the POE model based on the Bioedutainment can make me more active in the learning.	96
5	The learning using the POE model based on the Bioedutainment can make easier for me to understand the material.	93
6	The learning using the POE model based on the Bioedutainment makes me brave expressing my answer or opinion.	86
7	My learning motivation increased during and after this learning.	93
8	I agree if the learning using the POE model based on the Bioedutainment is applied to other natural science materials.	93
9	The learning activities become more effective and efficient by learning using the POE model based on the Bioedutainment.	83
10	I like the way the teacher teaches material using the POE model based on the Bioedutainment.	83

The result of the student response questionnaire analysis on learning is concluded that students like the learning using the POE model based on the Bioedutainment. Questionnaires are given to 32 students after the learning process using the POE model based on the Bioedutainment. There are 10 statements in the questionnaire with each statement having a presentation of more than 80%. In the average, the students give a positive response (agree) to each indicator contained in the questionnaire. For example, the indicators number 2 and 4, most of the students or more than 90% of students say they agree that the learning in the classroom is more fun and active. The response given by the student states that the learning using the POE model based on the Bioedutainment is an interesting learning innovation, making the learning more effective. The students also like the way the teacher teaches. The fact that the students feel happy and like the learning using the POE model based on the Bioedutainment has a good effect on their activity, scientific attitude, and learning outcome.

Teacher response

The teacher response data is used to find out how the teacher responds to the POE strategy and the Bioedutainment which are used in learning. There are 5 aspects find in the result of the teacher response. The result of the interview is; the learning is interesting and good to be applied to the next learning for other materials, the students are active and enthusiastic about participating in natural science learning, the advantage of the POE model based on the Bioedutainment is that the students do not get bored because the learning is interesting and easy to understand, the difficulty and disadvantage for quiet and less active students make them lazy to follow the learning, there is an improvement compared to previous learning.

The teacher argues the learning using the POE model based on the Bioedutainment improves the quality of learning that is the students become more active and enthusiastic in participating the learning. The games given at each stage of the POE model make students more interested in participating in the learning. It also raises students' enthusiasm, the card game in the learning is something new for them so that the students are more enthusiastic about the learning. Students' direct involvement in the learning makes the students more active, it can be seen when students are brave to ask questions and try the questions directly. The teacher also believes that the students do not feel bored, the learning becomes more interesting and the material is easy to understand. The learning method given gives a sense of happiness, it makes the students more interested so that the understanding of the material is easier to be accepted by the students.

CONCLUSION

Based on the result and discussion, it is concluded that POE model based on Bioedutainment is effective to be applied in the material of fungi of class VII towards activity, scientific attitude and learning outcome of the students.

REFERENCES

- Anisa, D.N., Masykuri, M., Yamtinah, S. 2013. Pengaruh Model Pembelajaran Poe (Predict, Observe, And Explanation) Dan Sikap Ilmiah Terhadap Prestasi Belajar Siswa Pada Materi Asam, Basa Dan Garam Kelas Vii Semester 1 Smp N 1 Jaten Tahun Pelajaran 2012/2013. *Jurnal Pendidikan Kimia (JPK)*. Vol 2 No. 2 halaman 70-89
- Amanah D.2013. Pengaruh Strategi Predict-Observe-Explain (POE) Terhadap Minat dan Hasil Belajar Siswa Kelas XI MAN Gandekan Bantul.*skripsi*. Yogyakarta: UIN Sunan Kalijaga
- Choirunnisa Iffa F.2014.Penerapan Active, Joyful And Effective Learning (Ajel)Berbasis Bioedutainment Materi Perubahan Lingkungan.*Skripsi*. Semarang: Universitas Negeri Semarang
- Costu B. 2011. Investigating the Effectiveness of a POE-based Teaching Activity on Students' Understanding of Condensation. Dokus Eylul University. *Journal of Educational* Volume 7 Nomor 40 halaman:47-67
- Hamalik, Oemar. 2010. Proses belajar mengajar / Oemar Hamalik. Jakarta: Bumi Aksara.*
- Kearney M. 2004. Classroom Use of Multimedia-Supported Predict–Observe– Explain Tasks in a Social Constructivist Learning Environment. *Journal Research in Science Education* .Volume 34 Nomor 3 Halaman: 427–453
- Marianti A. 2006. Bioedutainment strategi dalam pembelajaran biologi. Makalah. Dipresentasikan pada pelatihan eduwisata biologi guru SMP se kota Semarang, di Jurusan Biologi FMIPA UNNES di Semarang tanggal 25-26 November 2006
- Ni'mah S. 2012. Penggunaan Metode Permainan dalam Pembelajaran IPA untuk Meningkatkan Aktivitas dan Hasil Belajar Siswa Kelas IV Sekolah Dasar Negeri 11 Sungai Melayu Rayak. *Skripsi*. Pontianak: Universitas Tanjung Pura
- Suryorini, A.P., A. Marianti, & A. Irsadi. 2013. Penerapan strategi Bioedutainment pada pembelajaran materi tumbuhan di SMA Negeri 1 Weleri. *Unnes.J.Biol.Educ*.Vol 2 Nomor 1 Halaman 19-25
- Trianto. 2010. *Model Pembelajaran Terpadu*. Jakarta: PT. Bumi Aksara.