Students’ perception towards field study activity

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Abstract. This preliminary research aims to give description about students’ perception towards field study or about the reasons for students like or dislike field study activity which has been occurred at schools and the potency to conduct field trip learning. This research used quantitative survey research method with deep explanation. The data collection used questionnaire and interview. The statements in the questionnaire were open and close statements, which showed positive and negative perception with 5 point-Likert scales. Index of appreciation of field study were determined using questionnaire information from 19 students in 12th grade. The result show that out of 19 respondents, most of the express positive perception towards field study with average indices = 57.06 (range 45.45 – 81.82; with standard deviation = 8.48). The students’ positive perception towards field study activity implies can give impact toward field skills acquisition such as identification or classification skills, monitoring or sampling or survey skills, teamwork skill, and problem-solving skills in the field.

1. Introduction
Biology is one of the science subjects found in both junior high schools and high schools in Indonesia. Learning in Biology is closely related to the environment, which emphasizes giving the first-hand experience to students. Teachers as educators have a responsibility to help students develop a number of skills. The 21st-century skills based on the partnership framework for 21st Century Learning include Life and Career skills, Learning and Innovation skills, and Information, Media and Technology skills [1]. However, the focus of learning and innovation that distinguishes between students who are prepared for the future, which consists of critical thinking skills, communication, collaboration, and creativity, these focus very importantly to prepare students for the future [2, 3].

Fieldwork as a teaching method in the scope of education, such as field trips and excursions has been recognized as one of the important methods for achieving important competencies in science and technology [4]. The evidence from research conducted around the world is that fieldwork can have a variety of beneficial effects on participants [5]. Since the introduction of science through inquiry, critical thinking and solving problems, in fact, it is indeed important for students in the 21st-century [6, 7]. In addition to that, it was found that learning approaches and methods influenced students’ perception towards Biology [8].

Furthermore, [9] argues that field trips have been considered as methods that promote to inspire inquiry, problem-solving thinking, creativity, and knowledge at a higher cognitive level. Fieldwork
makes students mentally and physically active in all activities that involve students in collecting data, gathering information, analyzing, evaluating and solving problems [10]. In response to that, it may be more useful if practical activities can be carried out in nature because outdoors offers the opportunity to study various living animals, plants, and microorganisms to illustrate and investigate biological principles and phenomena [11]. In addition, it has also been observed that students practice easier connecting theories and memorizing better when students see things in nature than when students only hear them in the classroom [12, 13].

One of the senior high schools in Sukabumi West Java Indonesia based on boarding schools has implemented a field study activity involving students from tenth until twelve grades. The field study activity is claimed to be one of the learning methods in the school which has many benefits, both for students and teachers. One of the benefits of these activities is to provide opportunities for students to apply learning concepts that have been taught in the classroom by the teacher to be applied in a field “study” activity on a small group or scale. In addition, in principle, the purpose of this field research activity is claimed to be one way to introduce material more deeply to students, by directly engaging with the object of “study”, which is expected to be more memorable and lasting in the minds of participants. In which, those activities can provide valuable experience for students.

Implicitly, fieldwork activities, such as field trips, field study, are important to do, to provide the various competencies needed for students to deal with the challenges of the 21st-century. Several studies have revealed the importance of fieldwork or field trip, but there is still a lack of research on students’ perceptions of field trip or fieldwork in Indonesia. Therefore, this study aims to provide a description of students’ perceptions towards field study activities that have been carried out in schools and the potential to conduct field trip learning to improve 21st-century skills. Has been known that an understanding of students’ perceptions of fieldwork or field activities has pedagogical interests [14].

2. Methods
The respondents in this study were all senior high school students of the Integrated Islamic Boarding School of Hayatn Thayyibah, Sukabumi West Java Indonesia, who had participated in the students “field study”, with a sample of 19 students from 12th grade. The sampling technique used was convenience sampling. This research was conducted in May 2018.

Data collection techniques are using questionnaires and unstructured interviews. Questionnaires were developed to determine students’ perceptions of field study activities that students had experienced. Item statements in the questionnaire adopted from the research conducted by [14]. In addition, some items in the questionnaire contain information about personal identities such as name, class, age, plans for students to continue their education, as well as study programs or majors that they plan to choose at colleges or universities. In addition, there are two questionnaire items with open statements that ask about the best and worst experiences they have experienced while attending or after participating in field study activities, as well as about the skills they learned or developed after following field study activities.

Overall the questionnaire with a closed statement can be seen in Table 1. The measurement scale in the questionnaire either for statements that show positive and negative perceptions using a five-point Likert Scale from Strongly Agree to Strongly Disagree. Respondents were required to express the extent of their agreement with each positive statement on a five-point scale (strongly agree (SA) = 5, agree (A) = 4, neutral (N) = 3, disagree (DA) = 2 and strongly disagree (SD) = 1) and with each negative statement on a five-point scale (strongly agree = 1, agree = 2, neutral = 3, disagree = 4 and strongly disagree = 5). Respondents fill in the online questionnaire that has been uploaded. Each respondents’ response to the statement on the questionnaire is used to calculate the perception numeric index which has a range 0-100 and quantitatively express students’ perceptions of the experience of field study activities. The response index (Ifield) of each respondent is calculated using a formula adapted from [14]:

$$I_{field} = 25 \times \frac{(\Sigma \text{scores}) - N}{N}$$  \hspace{1cm} (1)

N is the number of statements and multiplied by 25 to give a potential range 0 - 100. The high value of the Ifield shows a positive perception of field study activities.
3. Result and Discussion

Students’ perception data obtained from questionnaires distributed online to 19 students at 12th-grade (Table 1). The researcher realizes that the number of students used as respondents is relatively small, but it is expected to provide an implicit description that some students have certain perceptions of field study activities.

**Table 1.** Perception of field study activities: students’ responses to statements about field study activities

| Statements                                                                 | SD | DA | N  | A  | SA |
|----------------------------------------------------------------------------|----|----|----|----|----|
| I enjoy field study activities\(^a\)                                       | 0  | 1  | 3  | 10 | 5  |
| I prefer to listen to teacher lectures in the classroom rather than conducting field study activities\(^b\) | 2  | 9  | 6  | 2  | 0  |
| I lose interest in field study activities if the weather is poor\(^b\)     | 1  | 5  | 7  | 5  | 0  |
| I always feel prepared to take part in field study activities\(^a\)        | 0  | 2  | 3  | 10 | 4  |
| I feel that time in the field is a waste of time\(^b\)                     | 8  | 9  | 2  | 0  | 0  |
| Field study activities teaches me valuable skills\(^a\)                    | 0  | 0  | 0  | 9  | 10 |
| I learn most about the biological topics in the field\(^a\)                | 0  | 2  | 5  | 11 | 1  |
| I learn most about the biology topics in report writing post-trip field study was conducted\(^b\) | 0  | 2  | 12 | 4  | 1  |
| It would be better to work on the biological topic that is brought to the classroom rather than having to go to the field\(^b\) | 2  | 11 | 5  | 1  | 0  |
| I would recommend field study activities to others outside of school\(^a\) | 0  | 2  | 5  | 10 | 2  |
| I feel safe while undertaking fieldwork or field study activities\(^a\)    | 0  | 0  | 1  | 15 | 3  |

Note: Values in the table are numbers of students.

\(^a\)Statements that show a positive perception of field study activities.

\(^b\)Statements that show a negative perception of field study activities.

Table 1 shows that a total of 19 respondents mostly expressed positive perceptions of field study activities with a mean = 57.06 (range 45.45 - 81.82), standard deviation = 8.48. For example, 10 students agreed and five students strongly agreed that field study activities were activities they enjoyed while only one student did not; none of the students feels that field study activities do not teach them valuable skills; none of the students feels that time on the field is time wasted; regarding 10 students agreed and two students strongly agreed that they would recommend fieldwork or field study to others outside of school while only two students did not; 18 students who feel safe while undertaking fieldwork or field study while the only one does not express agreement.

Figure 1 shows that students really enjoyed the field study activities (80%), regarding 48% of students showed a perception that they most prefer field study activities rather than listening to the teacher’s lecture in the classroom, but here most students showed a neutral attitude. Students also showed that they did not lose interest (63%) during field study activities even though the weather was poor. Students always feel prepared to carry out field research activities (77%), and students show their attitude that they feel that time in the field is not wasted time (86%). Students also showed their attitude that field study activities taught them valuable skills (91%) and they felt they learned more about biological topics in the field (72%).
Figure 1. Students responses statements agreement toward field study activity

But students showed the attitude that they did feel that they had learned considerably biology topics in the field before doing post-trip report writing (56%), and they also felt they were better off working on biology topics than in the classroom (75%). Students feel that the field study activities they are participating in are useful and valuable activities so they will recommend them to others (73%) and they feel safe when conducting field study activities (82%).

When students are given the opportunity to express their best and worst experiences while undertaking field study activities, students provide diverse responses including:

The worst experience does not seem to exist, the best experience is that I gain the knowledge which needed and good motivation for learning (Student 1); The worst experience was waiting for the turn of presenting the field study report in front of the “horrible” examiners until midnight, the best experience was that I finished everything perfectly so that I got an award, and got more than just theory in class (Student 2); My worst experience is to wait for the turn of presentation until 2:00 am, my best experience is to gain a lot of knowledge and experience (Student 3)

Furthermore, students revealed about the skills they learned or developed after post-trip the field study activities as follows:

After participating in field study activities, I gained the ability to distinguish between types of algae (Student 1); Critical thinking skills in solving problems are skills that I learned during the field study activities (Student 2); I got the opportunity to learn how to make up reports and present the report in front of friends and in front of the examiner well (Student 3)

Most students have a positive perception of field study activities (ex. students express that they enjoy field study activities). It is appropriate with that stated by [14] that participation in fieldwork can potentially change feelings, opinions, and state of mind that affect the cognitive experience. Students with positive perceptions such as enjoying fieldwork, feeling safe and they believe that they are using their time in the field, then they will recommend their experiences to others, are likely to be more effective in gaining knowledge and understanding than those who have negative perceptions of fieldwork. In addition, positive responses to fieldwork will lead to higher motivation, a deeper approach to learning and an impact on the effectiveness of achieving learning outcomes [15].

In addition, the five most important reasons given by teachers for maintaining fieldwork are that fieldwork is useful: to provide a 'real' experience in biology, teaching key practical skills (including
taxonomic skills, quantitative methods, observation, field sampling etc.) , to lure and motivate students, to develop group learning and social interaction, to develop professional skills such as teamwork skills, presentation skills [16]. Formal results from student participation in fieldwork include the ability to identify plants and animals and to understand how plants and animals are classified and how plants and animals depend on the physical and biological environment and how plants and animals interact with the physical and biological environment as well as human activities [14].

The teamwork in field study activities has the aim that students have the skills to plan things together, organize activities, be responsible for groups, build communication and interact with group members. As stated by [17] that outdoor learning creates previously monotonous learning situations become fun because of the existence of social groups. Through experiences of social interactions that are formed, students’ mental development becomes more developed. According to [15] that attitude or affective relates to emotions, feelings, and values that lead to the perception of learning tasks (or moods) that help determine students’ approaches to learning activities, and attitudes can also be indirectly related to learning outcomes. In addition, field study activities or field work makes it easier for students to understand the subject matter because fieldwork activities apply a ”learning by doing” strategy that gives students the opportunity to do and practice their own observational experiences [18].

According to [16] stated that fieldwork activities provide opportunities for students to acquire and develop key skills. The key skills include: (1) identification or classification, (2) monitoring or sampling/survey, (3) teamwork, (4) research or design experiment, and (5) observation. In addition, problem-solving and planning skills are recognized as important skills that can be generated from fieldwork activities, because these skills are very difficult to develop in laboratory practices that are planned and felt that the unpredictable nature of fieldwork provides a unique learning environment for developing organizational skills and problem-solving skills.

4. Conclusion

Based on the results of the study it can be obtained information that most students show positive attitudes or perceptions of field study activities, which implicitly can have an impact on the acquisition of field skills, such as identification/classification skills, monitoring/sampling/survey skills, team work skills, and skills problem-solving in the field. Students’ positive responses to field activities can also have the potential to acquire cognitive skills to deal with the challenges of 21st-century skills and indirectly related to learning outcomes.

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