

# Geography Field Study: the 21<sup>st</sup> Century Learning Innovation

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**Abstract**—Education in the 21st Century requires skill and creativity to support student learning. Learning does not only focus on the one that is conducted in classrooms, but it also can be conducted in the outside of the class as an alternative learning. The objective of this study is to investigate the role of the field study on Geography subject because of the innovation of learning in the 21st century. This is qualitative study which employed descriptive statistics as the statistical method. The data that were collected through interviews. The results of the study show that innovation in learning makes students more creative and develops students' skills. Field studies may be used by Geography teachers as environment-based learning supports since Geography laboratories are the nature indicating the importance of field studies for Geography education.

**Keywords**—*educational innovation, field study, geography education*

## I. INTRODUCTION

One of the primary objectives of the educational foundation program that aims to brace new generations for life is to familiarize individuals with the environment they live in. New teaching techniques which promote students' activeness during learning should be implemented. Therefore, the teachers should know teaching strategies, methods, and techniques that modern education require. Moreover, they should be well-informed and experienced in applying new strategies, methods, and techniques in classrooms through in-service training. The aim of Geography lessons is to familiarize students with the places they live in. Taking this point into consideration, it is essential to know the Geographical components of the places in general terms. The most important point in Geography lessons is to know the physical condition of the environment such as mountains and rivers among the geographical components as well as the general characters of the climate and flora[1].

The aim of Geography lessons is to introduce the places they live in to new generations, to teach the reasons of Geographical component differences and similarities, and to explain how to evaluate the results of these differences and similarities. The conducted study shows that there are several specific problems related to the content and teaching Geography. It is understood that some problems related to Geography teaching are common in developed and developing countries [2]. Regarding learning activities, many studies reveal that active and innovative learning develops students' abilities [3]. Geographers build relationships between humans and the natural environment. They try to be useful to the community and advise to contribute to this relationship. Students' expectations from field studies positively influence geographic expectations since the fieldwork experience meets expectations related to economic, physical, and human geography from the field of research for 18% to 100% [4].

Although there are some obstacles in the implementation of educational innovation, Geography teachers are open and willing to use current education technologies in their classes. This is an important result that teachers' teaching technology preferences are consistent with the goals of developed countries and Geography teaching programs in Turkey. Thus, it is envisaged that it is possible to conduct teacher education programs, Geography teaching programs, graduate/non thesis graduate education, in-service training programs, and teaching practice processes based on the results of this study [5]. Experts in any field of study must keep pace with change. This requires the ability to scan much information, synthesize knowledge, continually acquire new skills, and recognize the core of each information. Leading a field requires expertise high level of curiosity and original insights to generate new concepts, theories, skills, processes, and products. These leaders and creative problem solvers exemplify creative learners. Twenty-first-century skill advocates, skills necessary for the future as students' outcome areas, including

creativity and innovation skills, critical thinking and problem-solving skills, communication and collaboration skills, life and career skills, and flexibility and adaptability skills[6].

In today's era, many Geography teachers have made learning innovations for their lessons. Learning is not only conducted in classrooms, but also outside the classrooms as a way of introducing the environment. Teachers assess the outside classroom learning activities as performance tasks. It can be said that teachers prefer to use assessment methods to figure out students' achievement, thoughts, and emotions regarding the outside classroom learning experience. Teachers primarily mention field trips as one of the outside classroom learning activities. Like field trips, inviting an author or an expert from the specific profession is considered as one of the activities of learning outside the classroom by some teachers of high socio-economic status schools [7].

Environment-based learning is not only applied well in Geography lessons. It can be implemented in other fields because the application of environment-based learning can support the teachers' creativity. Based on research on the use of environment-based learning with cultural probes in design institutions, it is found that this typology identifies five types of creativity along with five related spatial qualities. There are various aspects of students' creativity that can be developed so that the potential of each of them can be more optimized [8].

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## II. LITERATURE REVIEW

A study conducted by Tuba Cengelci, entitled "Social Studies Teachers Views on Learning Outside the Classroom", is a qualitative study. The study involves 15 social teachers as respondents. The technique of selecting respondents is maximum variation sampling. The data were collected through interviews conducted by researchers. The interview format is prepared by the researcher. The descriptive

analysis method is used to analyze the data. A research framework is formulated in the research questions, and themes are described to organize data of the research. Research conducted by Tuba Cengelci has similarities to this study in aspect the respondents' selection. Both studies involve teachers of certain subjects as research subjects. The used data analysis has similarity to that of descriptive analysis. In contrast to the sampling technique used, this study uses random sampling while research conducted by Tuba Cengelci uses the maximum variation sampling technique.

A study conducted by Ali Balci, entitled "Geography Teacher Candidates' Experiences of Field Study in Western Anatolia: A Qualitative Study" is a qualitative descriptive study conducted in Western Anatolia. This study uses students' perceptions of Geography after field trips from April 25-28, 2018. In this study, it was detected that the number of the fieldworks and the explanations made during these works directly affect the students' expectations.

The future of any profession depends on the education and development process that feeds aspiring members into it, as much as on the acceptance of its professionals by a receptive market. The best possible education and development of 21<sup>st</sup> century professionals is essential for the successful future of the HR profession [9]. The 21<sup>st</sup> century education requires various innovations in education. Teaching can include the use of various things to support students' creativity. It should be noticed that the implementation of these innovation projects is meant to facilitate students at the second year of primary education degree at college to learn a variety of strategies and teaching resources for the teaching of History beyond the use of textbooks and regular visits to some interesting historical towns and monuments. However, above all the benefits involved in this project, students have the opportunity to strengthen and develop intellectual skills related to the acquisition of critical and creative thinking as well as to interrelate their work with other areas of knowledge. Regarding the collection of information, scientific methodology is applied by historians. In this sense, they conducted a systematic observation of the reality, investigated in the place, collected the information, and then selected and adapted the information to the language and interests of a particular audience[10].

The environment of learning is essential to support creativity. Creative thinking is the basis of human dignity in an era where machines, especially computers seem to be taking over routine skilled activities [11]. Researchers have found that passion-based learning, co-creation, collaboration, the atmospheres in which ideas are valued are seen as a necessary part of the learning process [12]. Environment-based learning provides an optimal learning experience for students. Students face real

problems in the environments, so they will be able to solve the problems. The demand for which students want to access is the ability to think critically, and it is one of the indicators to achieve the goals of learning in the 21<sup>st</sup> century. The formation of ways of thinking and character of the students can be done by teachers. Thus, the teachers need to design appropriate learning for students.

### III. METHOD

The data of the research were collected by conducting interviews with Geography teachers in senior high schools. An interview guideline was prepared by the researcher. The descriptive analysis method was used to analyze the data. Information obtained from respondents through interviews were analyzed and described. The research respondents include five high school Geography teachers. Those teachers were from public and private schools with different school categories. The sample was selected using the purposive random sampling technique.

This research employed the qualitative research method which tried to understand facts from the viewpoint of the research participants. This type of research refers to the meanings, concepts definitions, characteristics, metaphors, symbols, and description of things, but it is not related to its counts or measures. Qualitative research approaches are employed across many academic disciplines, focusing particularly on social and natural science. The research data were collected in semi-structured interviews.

### IV. RESULT AND DISCUSSION

Outdoor learning environments make abstract and complex concepts easier to understand because the natural environment aided with concrete and visual materials provides essential learning experiences for students. They have the opportunity to learn by doing experiments such as science centers in outdoor learning. Science center activity helps students in terms of problem-solving and critical and creative thinking.

Therefore, teachers may take students to outdoor learning environments in order to conduct research by recognizing the nature and the natural environment. Through observations and experiments, students develop psychomotor skills, formulate hypotheses, and solve problems. Observations and experiments done in outdoor learning have a positive feature [13]. Firstly, outdoor learning allows students to follow the learning processes by understanding the subject comprehensively. Secondly, it allows students to acquire high-level thinking skills such as critical thinking, synthesizing and analyzing. Then, it allows children to develop positive attitudes towards science through fun experiences. Finally, it includes science centers, museums, zoos, botanical gardens,

planetarium, industrial establishments, aquariums and national parks, so it allows learners to be exposed to scientific experiences through cognitive, emotional, and psychomotor interactions as well as improve their motivation to learn [14].

A Geography teacher argues that there is a need for innovation in environment-based Geography learning. Innovative learning-based environment may be done by introducing students to nature, so they know the science of Geography in real life. All Geography teachers agree that the field study is effective in supporting learning. To students, learning outdoor can help them see and feel directly the materials being taught in geography subject. Moreover, they can explore the material directly from the events and natural phenomena that exist in the field. Thus, they can solve problems and think critically about the material being taught.

Nature is a real Geography laboratory. There is a relationship between nature with humans and the environment. Educational practitioners can utilize nature to create various designs and models of learning. Field study is an appropriate educational innovation implemented in Geography learning. In addition to providing a variation, field study is considered more effective to explain Geography materials. Some materials in Geography will be better explained by looking at the real situation in the field. Problems experienced by teachers in conducting field study is related to relatively short allocated time and student condition in the field.

The result of interviews with teachers shows the aspect of Geography in relation to human activities and the physical environment. The following is the summary of an interview conducted with a Geography teacher.

**TABLE I. INTERVIEW RESULT**

No	Respondent	Summary of Interview Result
1	Teacher 1	Field studies are needed to understand more deeply about Geography materials. In addition to providing variations of learning to students, field studies are able to improve critical thinking and creativity.
2	Teacher 2	In the 21 <sup>st</sup> century, students should not only understand concepts, but also understand the real examples existing in the field.
3	Teacher 3	Utilization of the environment to support student learning is an effective and efficient way in learning
4	Teacher 4	Students will be able to understand the teaching materials better when they see real conditions and examples.
5	Teacher 5	Geography is a science with nature as its laboratory. The use of laboratory in learning will help students understand Geography materials. Similar to other subjects, it will be better if Geography is utilized with environments as the laboratories and media.

Most of the teachers in the research give a positive response to the existence of field studies as one of the innovations in learning. Field study can be implemented in the 21<sup>st</sup> century learning. This is in line with the results of research conducted in the field of Geography. The term “field study” encompasses a category of activities that includes contextual inquiry, on-site interviews, simple observations, and ethnography. By observing users in their own environment, you can capture information that affects the use of a product (e.g., interruptions, distractions, other task demands) and additional context that cannot be captured or replicated in a lab environment. Field studies can be used at any point during the product development life cycle but are typically most beneficial during the conceptual stage[15].

Field studies can be conducted in the form of virtual field trips, combining learning activities with activities outside the classroom to stimulate students. The integrated technology in virtual filed trip is another complementary element to conduct the in-class teaching and to reduce the limitation of activity outside classroom. The teachers will help stimulate the learners ability in seeking for information by themselves. This is an alternative activity in leisure-education development and is well-suited with the learners’ ability and quality which supports the educational policy and improves the education quality in the future [16].The combined field study conducted in the form of field trips is a form of learning based on

edutourism which integrates tourism by combining learning during the journey.

The result of this study reveals that innovation in education should be done to reduce boredom, provide variation in student learning, and increase student understanding. Nature–society or human–environment relationships have been a part of Geographic inquiry. The modern foundation of human impacts on physical environments, however, was explained by nineteenth-century German geographers, with various claims that these relationships, broadly interpreted, constituted the identity of the discipline [17]. Utilization of nature in Geography learning is very helpful for teachers in the creation of learning models and designs. Creation in learning is expected to attract students in learning and have positive impacts on students' understanding of the materials being taught.

Many forms of Geographic fieldwork include one that school or teacher can do by conducting field trips. The choice of filed trip location is in accordance with the existing materials in the Geography subject, for example the trip to the mountainous area to study volcanology.

Field study is considered as learning experiences outside of the classroom. Field study can give students the knowledge from the field directly. The field study is conducted so students can understand the concepts taught with real samples, attain a more complete framework of Geography materials, appreciate the complexities of real-life cases, as well as observe and describe skills. Moreover, when the students enjoy the classes more, they learn more, and when the teachers enjoy more, they can teach more [18]. The utilization of nature as a learning environment challenges the teacher to be able to turn the environment into teaching materials and learning media for students. The environment and interdisciplinary nature of environmental education present extraordinary challenges to teachers’ abilities to clearly conceptualize, theorize, and communicate findings about what they have learned about practice, research, and theory in environmental learning [19].

Outdoor learning encourages students to be more active and creative. In a case study conducted in a primary school, it is found that teachers feel ownership of particular spaces indoors once outdoors, time, and space are seen as more owned by students. Besides, work tends to be individual focus whereas outside learning activities were more likely to involve collaboration. [20]. Learning outside the classroom provides an alternative to learning as a complementary material and learning processes that have not obtained by the learning done in the classrooms. Based on the interview results, field study is needed to present materials, so students understand the materials comprehensively. Students’ understanding can be promoted by providing real

examples and presenting learning materials that can be viewed and learned by students.

The large number of volcanoes in Indonesia can be used in the field study to apply and explore science for students. One area of study that can be studied more comprehensively in Indonesia is volcanology material. Volcanology is a research field for the development of interdisciplinary collaboration, and practitioners are actively reaching out to the social sciences and humanities [21]. A variety of things that can be used for instructional materials include the volcanic process and post-volcanic conditions of a plateau. There are many benefits and discoveries gained from the volcanology process, including various volcanic mineral materials. These impacts are stochastic because the largest and most damaging volcanic events have not occurred recently. Thus, there is considerable interest in past eruptions as an analogue for possible future events [22].

Studying the natural surroundings will add more tangible new knowledge. The creation of an instrument that offers educators a practical tool to aid in the design of learning environments will improve student creativity. Based on the literature review, classroom observations, and administrator feedback, three key areas are found to support student creativity: Learner Engagement, Physical Environment, and Learning Climate. These three areas create the foundation of the SCALE: Support for Creativity in a Learning Environment [23]. Field study provides a positive contribution in Geography learning. Field study teaches students to be able to think critically and creatively as well as explore the environments as a source of learning. The environments will provide a lot of information in learning. Field study also provides a variety of learning styles and encourages the motivation to learn.

## V. CONCLUSION

This study aims to present the Geography teachers' views on an innovation in the field of education. Field study is an innovation to improve students' creativity and critical thinking as well as to optimize the use of environments as learning media and resources. This research does not include the views of students and other education practitioners. Therefore, it is better to further evaluate the effectiveness of the use of environments as media and learning resources according to students and other practitioners. The advantages of this research is to provide information for educators as a reference in developing innovative learning for students.

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