Outdoor learning based on natural laboratory as social studies learning resources for strengthening student's insights and characters

B. Kurniawan*, S.M. Towaf, Sukamto, A. Purnomo & Idris

Universitas Negeri Malang, Malang, Indonesia

ABSTRACT: Through innovative learning, students' insight and character are expected to be improved. Various efforts have been made by the teacher to achieve these goals, one of which is by using outdoor learning based on the natural laboratory. This study aims to explore the potential of learning resources in the natural laboratory managed by the Faculty of Social Sciences, State University of Malang, regarding social studies learning. This research was conducted in Gandusari District, Blitar-Indonesia. By using a qualitative descriptive approach, this study finds that historical potential has an impact on increasing students' insights regarding historical material in social studies learning. This research also shows that there is a strengthening of student character and meaningful social studies learning

Keywords: outdoor learning, natural laboratory, social studies, social insight, students' character

1 INTRODUCTION

Knowledge exploration can not only be carried out in a class since its situation is multidimensionally limited by time (Voss et al. 2017), with complicated class management (Schmidt et al. 2017) and learning partners such as classmates and teachers (Brantley 2014). This exploration can also be performed outside the classroom (McGowan 2016). Studying in class limits the experience obtained by the students. Springer and Collins (2008) consider formal classroom learning, unable to capture all components of the real-world situation, although this can create interactions between students. James & Williams (2017) add that classroom learning involving educators, textbooks, laboratory space, and discussion activities is not enough to develop the concept of understanding. Therefore, it is necessary to design learning that provides a more dynamic and meaningful experience.

One dynamic learning that provides experience is by directly sending students to the field, commonly referred to as outdoor learning (Williams et al. 2018). In the field, they interact with books, teachers, and friends as they usually do in class, as well as interact directly with learning resources. Learning resources can be objects (Bento & Dias 2017), the environment, and also society (McGowan 2016). In addition, they can also do observations, research, and experiment. They can observe and research a society's culture directly in the form of historical heritage, values, customs, and others. This is called the natural laboratory.

The Faculty of Social Sciences, Universitas Negeri Malang, has established Gadungan Village, Blitar Regency as its natural laboratory area since 2015. This village holds historical stories and historical sites in the form of temples, archway structures of the Gadungan site, worship altar, and village founder's tomb. The temple was named Wringin Branjang, one of the tombs of *Tumenggung* Dermo Kusumo—the founder of the village or also called Eyang Dermo, who was the soldier of Prince Diponegoro. Uniquely, the people around the village have high historical awareness.

*Corresponding author: bayu.kurniawan.fis@um.ac.id

The Gandungan community is able to treat cultural products in the form of temples and tombs (Malikhah 2017).

The existence of a natural laboratory provides learning experiences and unique insights for students. By studying in an environment outside the classroom, there are at least six target abilities that will be obtained by students, including 1) communication skills, 2) leadership, 3) cooperation in groups, 4) ability to understand nature, 5) skills in the field, and 6) awareness toward the environment (Gookin 2006). This article explores the potential obtained from outdoor learning activities in the natural laboratory managed by the Faculty of Social Sciences, Universitas Negeri Malang, especially as a learning resource for social studies learning.

2 METHODS

This study used a qualitative descriptive approach that aims to understand a phenomenon (Moleong 2010), such as understanding the historical potential found in natural laboratories in Blitar, Indonesia. The first step was to conduct a field survey by identifying historical potentials at the research location. The research location was in Gandusari sub-district, Blitar Regency, Indonesia, with an area of 88. 23 km² (BPS Kab. Blitar 2014). Data were generally collected using observation, interviews, and documentation (Arikunto 2014). The researcher conducted a field survey of the research location, identified existing historical potential, and conducted interviews with the local government and site managers, as well as ten local residents. In the field, researchers also took several pictures as documentary evidence. The collected data were analyzed in several stages, namely data collection, data reduction, data presentation, and conclusion or verification (Miles et al. 2014). In addition, checking data used triangulation (Denkin & Lincoln 2000) and peer discussion.

3 RESULTS AND DISCUSSION

3.1 *Historical potential for Social Studies learning in a natural laboratory*

The historical remains found at the location of the study came from the time of the Majapahit Empire until the time of the Indonesian independence struggle. Its forms include temples, cult sites, historical monuments, and sacred tombs (See Table 1). These relics can be used as the learning resource for meaningful learning.

Historical relics found at the research sites are generally influenced by the Majapahit Kingdom. This is useful to increase students' insight in learning ancient history. In addition to knowing the Majapahit Kingdom's greatness, students experience a natural process of character formation (Gookin 2006). In the field, students interact with learning resources, friends, and the surrounding community. The surrounding community can be the object of study in the fields of history, social, and culture. The reason is that the village community highly values cultural values and safeguards

Table 1. Historical site in Gandusari sub-district, Blitar.

Name	Description
Kotes Temple	Temples/Relics of Majapahit Emipre
Wringin Brajang Temple	Temples /Relics of Majapahit Emipre
Sumberagung Temple	Temples /Relics of Majapahit Emipre
Gunung Gedhang Site	Cult sites/Relics of Majapahit Emipre
Sukosewu Site	Cult sites/Relics of Majapahit Emipre
Slumbung Site	Cult sites/Relics of Majapahit Emipre
Monumen TRIP	Historic monument/Era of Indonesian independence strunggle
Tomb of <i>Eyang</i> Darmo	Sacred tombs/Gadungan Village founder and soldier of Prince Diponegoro

these historical sites. The temple has become an authentic medium often used by educators for learning related to history, for example, Borobudur Temple, Prambanan Temple, Penantaran Temple, and others. The research conducted by Permadi (2015) on Singhasari Temple as a learning tool for students with tourism methods. The temple's tourism method can provide awareness in preserving historical relics for teachers, students, communities, and local governments. In addition, the temple can also be used as an inspiration for learning based on computer media. Research conducted by Hidayat et al. (2014) presents material about parts of the Borobudur Temple into a video game. As a result, students get knowledge related to Borobudur Temple and fun learning packaged in a game.

Temples and other historical sites as social studies learning objects can be studied in an integrated manner. For example, there are several things that can be studied in terms of historical, socio-cultural, and economic aspects. In terms of history, students can directly examine the establishment of temples, patterns, and functions of the temple. In the socio-cultural aspect, students can study the community and its social activities, the values contained in the temple, and its people. In addition, in terms of economics, students can examine whether the temple has an economic impact or not for the community, for example, by presenting tourism and others.

Outdoor learning, recreation, and outdoor programs using historical resource sites as described earlier provide experience to help facilitate various student personal growth types such as individual and group social systems, independence, and resilience (Chang et al. 2019). In addition, this learning model positively affects individual psychological well-being by offering arrangements that can reduce stress (D'Amato & Krasny 2011). In fact, in certain situations, this model can be an effective way to restore their psychosocial (Mutz & Müller 2016). Overall, much of the literature proves that outdoor learning-based activities can have a positive effect on the whole individual, especially during their academic careers (Chang et al. 2019).

3.2 *Character-based social studies learning*

Based on the findings, knowledge source facilities are very supportive in implementing integrated social studies learning. Geological objects can be viewed historically, sociologically, and economically as interesting objects to study. In addition, character-building is an essential element to be achieved.

Students who are invited to study the historical aspects, especially the historical temple sites, and the sacred tomb of *Eyang* Darmo understand some of the meanings and values contained. At least there are several characters that can be obtained, such as 1) religiosity, 2) tolerance, 3) curiosity, 4) national spirit, and 5) caring for the environment. The TRIP monument can also shape students' character, such as love for the country or nationalism and hard work. In terms of sociology, students can learn how relationships between community members can live in harmony and peace and how social construction is woven to always safeguard every cultural asset in their environment. These characters are expected by every student through learning in the natural laboratory.

Learning social studies on an outdoor basis offers students the opportunity to develop knowledge and skills by expanding their daily experience in the classroom against modern life's negative effects. (Romar et al. 2019). Through direct interaction with the community and looking deeply into the realities of people's lives, students unconsciously build a system of values and characters in themselves through experiences that are absorbed through the realities of life that arise in social life (Kurniawan 2016; Mpeli & Botma 2015; Thorburn 2018).

3.3 *Meaningful social studies learning*

Students need a different and fresher learning experience. Knowledge gained is based on knowledge transformed by the teacher based on textbooks. James dan Williams (2017) explains that students get good knowledge when learning is active, provides meaning and experience. The application of learning in natural laboratories in Blitar Regency provides new knowledge directly from the place, constructivist learning activities, and meaningful experiences.

Students need an understanding of attitude values to build good character. This means that learning requires value clarification techniques (VCT). Rath et al. (1966) described that there are 7 steps in using the value clarification approach, including choosing the value 1) freely, 2) from several alternatives, 3) after pondering it, 4) value that has been selected, 5) confirming to the public about the selected value, 6) take action according to the selected value, and 7) repeating or familiarizing the chosen value. Many studies apply the value clarification approach in learning, such as Guinn (1977) applies a value clarification approach in learning with students in cultural differences in America. Besides, Sariyatun (2011) applies value clarification techniques (VCT) in value-based social studies on cultural values contained in classical local batik. Meanwhile, in the field of health education, a value clarification approach is used to equip midwifery students. In addition, Mpeli & Botma (2015) apply a value clarification approach to providing a view for midwifery students related to abortion services in South Africa. This research is intended to answer the phenomenon of the high mortality rate of women due to abortion.

Regarding social studies learning, especially the historical heritage in Gandusari, students interact with communities around the village with high historical awareness. Students need value clarification techniques to understand and internalize cultural values. Students can also build an understanding of historical awareness by knowing the meanings contained in historical sites. Therefore, if there has been historical awareness in students, there will be no human activities that damage historical sites or even destroy them. Destroying historical sites shows no respect toward the inheritance of earlier ancestors. On the other hand, not necessarily the people today are able to create what have been made by previous ancestors. One of the factors destroying historical sites is human advancement. The newspaper "Monitor Depok," which was published on Friday, June 23, 2006, in column 6, page 1, reported a historic old house's demolition. The ancient house belongs to an ethnic Chinese named Tan. This happens because there is a lack of understanding and awareness of heritage and historical sites' importance. Thus, historical sites will be increasingly marginalized by developments, especially those in big cities.

The natural laboratory may often be heard in the learning of the natural sciences. Whereas, in learning, social sciences are known as field practices (Muralidharan 2017), learning outside the classroom, or outdoor learning (James & Williams 2017). Related to social studies learning, natural laboratories can provide fresher experiences to students. They not only interact directly with the source of knowledge (Bento & Dias 2017) but also they can shape leadership attitudes (Sani et al. 2018), learn to take risks, build supportive relationships and interact with the community (Daniel et al. 2014). This will be a good thing for students' character development. In addition, by providing experiences in the field, students can integrate their experiences in their writing (notes) and analysis (White 2016). It also expands student understanding of the social economy of the society (Kurniawan 2017) and encourages them to explore the meaning of any symbols existing in social heritage (Kurniawan 2016). Thus, outdoor learning provides a complete package of nutrients needed by students to develop into good individuals and citizens.

Most people think that learning in a natural laboratory is full of risks. This is based on the reason that learning outside the classroom can increase physical risk and expand the potential for psychological anxiety (Canter et al. 1994). However, some previous literature indicates that anxiety conditions, external disorders, and risk situations can encourage individuals to create ways or solutions to overcome them cognitively (Luckner & Nadler 1997). This is supported by several research results that indicate a positive impact on the program (Outdoor Learning) to increase self-confidence, good communication, mutual help, and dare to express opinions (Neill 2003). There are also benefits for children's health and development in the form of motor development and physical health (Bento & Dias 2017). In the natural laboratory, students can communicate directly to the surrounding community and collect data for learning purposes. This can help a lot in historical site studies where students need to see, touch, and understand the object directly (Yesilbursa & Barton 2011), to get significant results in learning (Blair 2016). They will reconstruct the knowledge and get the unforgettable meaning of learning.

4 CONCLUSION

Research on natural laboratory-based outdoor learning provides a different learning atmosphere that presents valuable experiences for students. Their insight is increasing because they learn directly from learning resources in the field. The results show that the natural laboratory managed by the Faculty of Social Sciences, Universitas Negeri Malang, has excellent historical potential for social studies learning related to historical material. This historical potential has an impact on improving the character of students in the form of 1) religiosity, 2) tolerance, 3) curiosity, 4) environmental care, 5) nationalism, 6) hard work, and 7) caring for local culture. In addition, learning directly from the learning resources provides students with meaningful social studies learning experiences.

REFERENCES

- Arikunto, S. 2014. *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Autry, C. E. 2001. Adventure therapy with girls at-risk: Responses to outdoor experiential activities. *Therapeutic Recreation Journal*, 35(4), 289–306.
- Bento, G., & Dias, G. 2017. The importance of outdoor play for young children's healthy development. *Porto Biomedical Journal*, 2(5), 157–160.
- Blair, D. j. 2016. Experiential learning for teacher professional development at historical sites. *Journal of Experiential Education*, 39(2), 1–15.
- BPS Kab. Blitar. 2014. *Statistik Daerah Kecamatan Gandusari 2014*. Blitar: BPS Kab. Blitar.
- Brantley, A. 2014. Learning Outside the Classroom. *Phil Delta Kappan*, 98(8), 70–75.
- Canter, M. B., Bennett, B. E., Jones, S. E., & Nagy, T. F. 1994. *Ethics for psychologists: A commentary on the APA Ethics Code*. Washington DC: American Psychological Association.
- Chang, Y., Davidson, C., Conklin, S., & Ewert, A. 2019. The impact of short-term adventure-based outdoor programs on college students' stress reduction. *Journal of Adventure Education and Outdoor Learning*, 19(1), 67–83. <https://doi.org/10.1080/14729679.2018.1507831>
- D'Amato, L. G., & Krasny, M. E. 2011. Outdoor adventure education: Applying transformative learning theory to understanding instrumental learning and personal growth in environmental education. *The Journal of Environmental Education*, 42(4), 237–254.
- Daniel, B., Bobilya, A.J., Kalisch, K.R., & McAvoy, L.H. 2014. Autonomous student experiences in outdoor and adventure education. *Journal of Experiential Education*, 37(1), 4–17.
- Denkin, N. K., & Lincoln, Y. S. 2000. *Handbook of qualitative research*. US.: Thousand Oaks.
- Gookin, J. 2006. *NOLS Wilderness Educator Notebook*. WY: National Outdoor Leadership School.
- Guinn, R. 1977. Value clarification in the bicultural classroom. *Journal of Teacher Education*, 28(1), 46–47.
- Hidayat, I.K., Sunarto, P., & Guntur. 2014. Mengenal relief, mudra, dan stupa candi borobudur untuk anak-anak usia 9-12 tahun melalui Edugame. *Jurnal Visual, Art & Design*, 6(1), 58–68. <https://doi.org/doi:10.5614/itbj.vad.2014.6.1.6>.
- James, J. K., & Williams, T. 2017. School-Based Experiential Outdoor Education: A Neglected Necessity. *Journal of Experiential Education*, 40(1), 58–71.
- Kurniawan, B. 2016. *Model pembelajaran IPS berbasis nilai simbolisme kain Songket untuk meningkatkan solidaritas sosial siswa di SMP Negeri 6 Kayuagung* (PhD Thesis). Universitas Sebelas Maret.
- Kurniawan, Bayu. 2017. Menumbuhkan jiwa wirausaha dalam pembelajaran IPS (Belajar dari etos kerja dan berdagang masyarakat Minangkabau). *Prosiding Seminar Nasional PIPS*, 56–62. Malang: UM Press.
- Luckner, J. L., & Nadler, R. S. 1997. *Processing the experience: Strategies to enhance and generalize learning*. Dubuque: Kendall/Hunt Publishing Company.
- Malikhah, S. 2017. *Pengembangan pembelajaran IPS tematik terpadu berbasis laboratorium alam Fakultas Ilmu Sosial*. Malang: UM Press.
- McGowan, A. L. 2016. Impact of one-semester outdoor education programs on adolescent perceptions of self-authorship. *Journal of Experiential Education*, 39(4), 386–411.
- Miles, M. B., Huberman, A. M., & Saldana, J. 2014. *Kualitatif Data Analysis A Methods Sourcebook Edition 3* (Terjemahan Tjetjep Rohindi Rohidi, UI Press). USA: Sage Publication.
- Moleong, L.J. 2010. *Metode Penelitian Kualitatif*. Bandung: Remaja Rosdakarya.
- Monitor Depok. 23 Juni 2006. *Ekses Pembangunan Situs Sejarah di Depok Musnah*, hlm.1.

- Mpeli, M. R., & Botma, Y. 2015. Abortion-related services: Value clarification through ‘difficult dialogues’ strategies. *Journal of Education, Citizenship, and Social Justice*, 10(3). Retrieved from <http://journals.sagepub.com/doi/full/10.1177/1746197915607281>
- Muralidharan, K. 2017. Field experiments in education in developing countries. *Handbook of Economic Field Experiments*, 2, 323–385.
- Mutz, M., & Müller, J. 2016. Mental health benefits of outdoor adventures: Results from two pilot studies. *Journal of Adolescence*, 49, 105–114.
- Neill, J. T. 2003. Reviewing and benchmarking adventure therapy outcomes: Applications of meta-analysis. *Journal of Experiential Education*, 25(3), 316–321.
- Permadi, GS. 2015. *Pemanfaatan candi Singhasari sebagai sumber belajar sejarah*. Jember: Universitas Jember.
- Raths, L. E., Harmon, M., & Simon, S. B. 1966. *Values and teaching*. Columbus, Ohio: Charles E. Merrill Books, Inc.
- Romar, J.-E., Enqvist, I., Kulmala, J., Kallio, J., & Tammelin, T. 2019. Physical activity and sedentary behaviour during outdoor learning and traditional indoor school days among Finnish primary school students. *Journal of Adventure Education and Outdoor Learning*, 19(1), 28–42. <https://doi.org/10.1080/14729679.2018.1488594>
- Sani, A., Ekowati, VM., Wekke, I. S., & Idris, I. 2018. Respective contribution of entrepreneurial leadership through organizational citizenship behavior in creating employees performance. *Academy of Entrepreneurship Journal*, 24(4), 1–11.
- Sariyatun. 2011. Social studies learning model in local classic batik cultural based for the nation identity reinforcement of junior high school students. *International Journal of History Education*, 12(2).
- Schmidt, J., Klusmann, U., Lüdtke, O., Möller, J., & Kunter, M. 2017. What makes good and bad days for beginning teachers? A diary study on daily uplifts and hassles. *Contemporary Educational Psychology*, 48, 85–97. <https://doi.org/doi:10.1016/j.cedpsych.2016.09.004>
- Springer, S., & Collins, L. 2008. Interacting inside and outside of the language classroom. *Language Teaching Research*, 12(1), 39–60.
- Thorburn, M. 2018. Moral deliberation and environmental awareness: Reviewing Deweyan-informed possibilities for contemporary outdoor learning. *Journal of Adventure Education and Outdoor Learning*, 18(1), 26–35. <https://doi.org/10.1080/14729679.2017.1322000>
- Voss, T., Wagner, W., Klusmann, U., Trautwein, U., & Kunter, M. 2017. Changes in beginning teachers’ classroom management knowledge and emotional exhaustion during the induction phase. *Contemporary Educational Psychology*, 51, 170–184. <https://doi.org/doi.org/10.1016/j.cedpsych.2017.08.002>
- White, J. 2016. historical sociology in the field: Teaching irish identity through field experience. *Irish Journal of Sociology*, 24(1), 54–77.
- Williams, I. R., Rose, L. M., Olsson, C. A., Patton, G. C., & Allen, N. B. 2018. The impact of outdoor youth programs on positive adolescent development: Study protocol for a controlled crossover trial. *International Journal of Educational Research*, 87, 22–35. <https://doi.org/doi.org/10.1016/j.ijer.2017.10.004>
- Yesilbursa, C. C., & Barton, K. C. 2011. Preservice teachers attitudes toward the inclusion of “heritage education” in elementary social studies. *Journal of Social Education Research*, 2(2), 1–21.