

The effectiveness of outdoor education on positive youth development and 21st century skills

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ABSTRACT

Background Problems: Adolescents face various social challenges, such as the need to succeed in a competitive environment, cope with stress, face a global pandemic, and must develop in the future as adults. **Research Objectives:** The purpose of this research is to create an outdoor program integrated with PYD and 21st century skills that form a generation of young people who are resilient and ready to face global challenges. **Methods:** The method used in this study was the quasi-experimental design research method. The design used in this study was Pretest-Posttest Control Group Design With More Than One Experimental Group. The research instrument to measure 21st century skills is the 21st century skills questionnaire, and to measure positive youth development (PYD) using the PYD 7Cs questionnaire. **Findings and Results:** There was a significant difference in the effect of the outdoor education program of PYD integration with the control group with a calculated *f* value of 17,993 and a sig value of 0.000. Similarly, there are differences between the 21st century skill integration group and the control group with a calculated *f* value of 15.579 and a sig value of 0.000. **Conclusion:** The results show that outdoor education that integrates PYD and 21st century skills has a better impact so that youth have excess energy if not channelled into positive activities. Youth needs in outdoor education activities are still an attractive choice. In the 21st century, outdoor education activities become meaningful learning with the condition that there is an integration concept both in 21st century skills and positive youth development.

Keywords: Outdoor education; positive youth development; 21st century skills



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INTRODUCTION

In the era of globalisation, discussing adolescent problems is endless; there are many interesting things to discuss and research (Fadillah et al., 2023). In every age, individuals in society are faced with a situation that continues to change along with the development of technology, political and economic situations, and expectations of the business world (Odabaşı et al., 2023). Especially since the COVID-19 pandemic, changes have become clearer in how the use of communication technology is increasingly massively used by

the community and is mostly used by Gen-Z youth (Raihanna et al., 2023). Adolescents and youth have a higher risk of excessive use of digital technology due to several factors, such as avoiding rejection from peers and feeling alienated from the social environment (Hartanto & Fauziah, 2021). One of the impacts that occur is the increasing cases of bullying and bullying in schoolchildren (Aflanier et al., 2023). In addition, sexual violence against youth and students shows an increasing number of reports (Sumintak & Idi, 2022). To overcome these adolescent deviations, one of them is by introducing activities in the wild, commonly called outdoor education (Pierce & Beames, 2024; Allan et al., 2024).

In the last two decades of activity, outdoor education (OE) still remains a preferred medium and also provides meaningful lessons to educate someone to have courage, confidence, empathy, and concern for others and the environment (Kurniawan et al., 2023). One of the learning activities in nature (outdoor education) that never runs out of time is mountain climbing, where this activity is favoured by the majority of teenagers and youth because it has a variety of challenges and valuable experiential learning (Apollo, 2017; Apollo & Andreychouk, 2022). Deep outdoor education like mountain climbing, there are many dangers, both challenges that come from outside (objective danger) as well as the challenge of danger that comes from within (subjective danger). The danger if it can be passed well, that will be a lesson. One of the successes in learning life skills in order to get optimal results is a program that is integrated with the objectives to be delivered (Kendellen et al., 2016). The principle of integration in life skills learning is (1) focus one component on one session (2) convey the objectives of the component at the beginning of the activity (3) apply learning strategies in applying components throughout learning (4) reflect and discuss after learning activities (Kendellen et al., 2016).

One of the integrations that can be done in learning Outdoor Education is about learning Life Skill deep Positive Youth Development (Akin et al., 2020). The framework differentiates youth development through Outdoor Education in general; Youth development through outdoor activities focuses on the process of teaching adolescents life skills and their physical competencies, whereas youth sports development explicitly refers to the acquisition of sports skills (Holt et al., 2017; Lindsay et al., 2021). Positive Youth Development (PYD) engaging youth with family or community to achieve common goals young people are empowered to unleash the full potential of youth. The PYD approach builds skills, competencies and fosters harmonious relationships (Alvarado, 2017; Bruner et al., 2023). PYD views adolescents as having the potential to succeed, develop healthily, and have the capacity to develop positively (Ravichandren et al., 2023). Nurturing a positive young generation through sports is a must in the country. Therefore, the development of the PYD is the main key to the progress of the country, especially in the field of sports. The results prove that exercise can contribute in developing cognitive, affective, psychomotor, social, and emotional aspects of people's lives (Hambali et al., 2022).

The development of teenagers today is in the 21st century, which is characterised by rapid technological advancements. Lifestyles and the way we interact with people have changed significantly as digital technology is present in various areas of our lives (Bahadir et al., 2019). The 21st century is a period of rapid transformation, an unprecedented era as technological operations have become so globalised that competence places more emphasis on knowledge, mobility, and collaboration (Tandika, 2022). Technology is not something that is absolutely useful, but there is a side of technology that has a bad impact on humans; it can be likened to a technological knife; if used in the right way, it will bring benefits, but if misused, it will bring disaster (Rumetna & Lina, 2022). So people must be able to have the skills to utilise technology according to their needs. 21st century skills are knowledge and skills that are prepared to face various problems in the 21st century, such as digital technology problems, economics, and global competition (Hidayatullah & Wulan, 2022). The turn of the 21st century saw a wave of research focussing on a positive outlook on human development. In adolescent literature, this focus is primarily aimed at replacing the deficit view of youth as a problem that must now change the paradigm of the view that youth are "resources to be developed." Current thinking suggests that an integrative preventive-promotive focus may be the best path to pursue in increasing the potential that youth continue to develop with the times (Burkhard et al., 2020).

The urgency today is how experts can create programs that emphasise youth having skills in the 21st century while still upholding the values of wisdom, local wisdom, and sportsmanship (Weiss et al., 2021).

So that adolescent problems that arise recently can decrease while positive things in adolescents continue to increase. This study addresses a critical gap in existing research by examining how outdoor education can integrate Positive Youth Development (PYD) with 21st-century skills to mitigate issues faced by adolescents, particularly those arising from excessive use of digital technology and the post-pandemic environment. Unlike previous studies that often treat PYD and 21st-century skills separately (Tandika, 2022), this research aims to combine both elements while incorporating local wisdom and sportsmanship. The novelty of this study lies in its comprehensive approach, aiming to design balanced programs that not only equip adolescents with modern skills but also reinforce traditional values, thereby offering a holistic strategy for youth development.

Objective of the Study

This research aims to explore the coaching of youth on their attributes and hobbies in outdoor activities. In particular, the researchers tried to answer the status of the integration of positive youth development components for concern, self-confidence, having a strong character, having a wide network of connections, and creativity in facing problems. In addition, to determine the level of skills of the 21st century youth personal components of problem solving, critical thinking, communication, collaboration, having initiative, being able to adapt, and having a leadership spirit. With this, the researchers will find out whether the integration of PYD and 21st century skills significantly affects the proficiency of youth attributes.

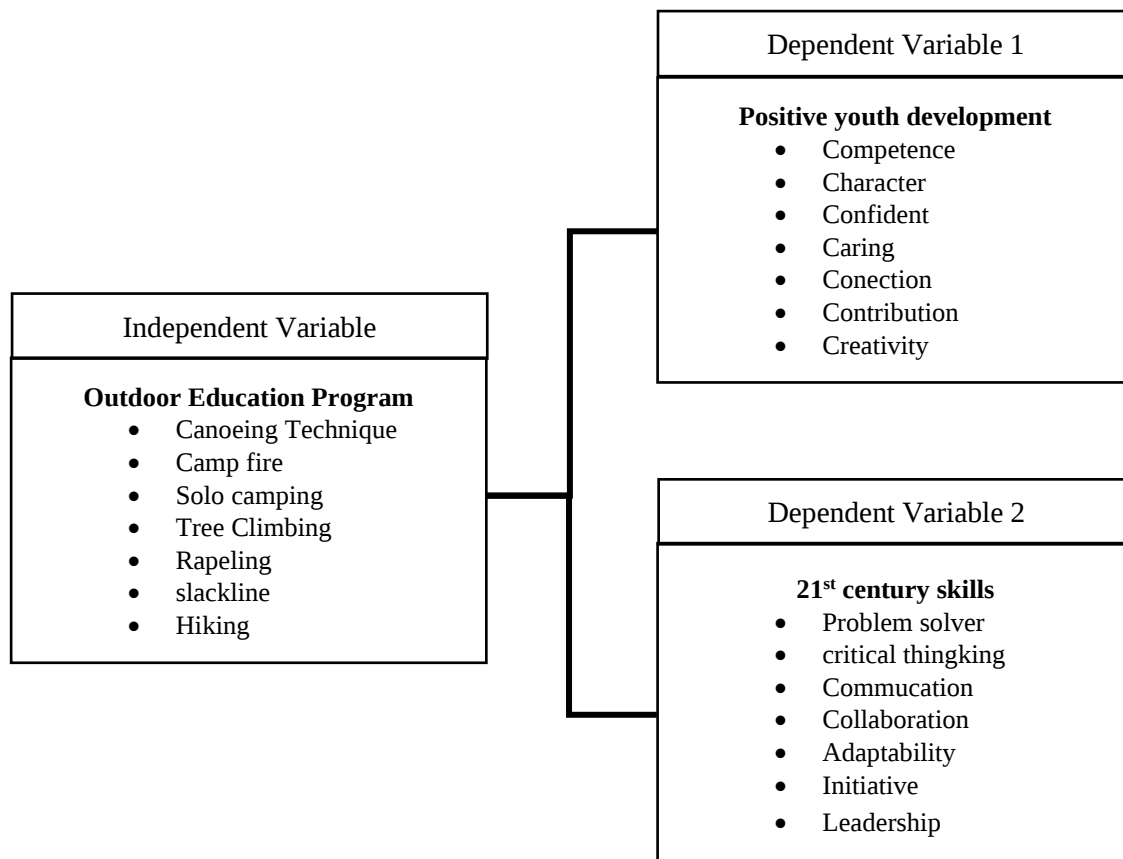


Figure 1. Conceptual Framework

Figure 1 presents variable relationships that focus on the principle of integration of 1 component activity for positive youth development consists of competence, character, confidence, care, connectedness, contribution, and creativity. Meanwhile, the 21st century skill variables consist of problem-solving, critical thinking, communication, collaboration, adaptation, initiative, and leadership. The OE program is canoeing, campfire, solo camp, tree climbing, rapeling, slackline, and hiking.

METHOD

The program has been implemented in September 2023; here each component in the PYD and 21st century skills are given to each group, 1 component, 1 program. The sampling technique used is technique purposive sampling, also called judgement sampling, that is, the deliberate choice of an informant because of the qualities that the informant possesses (Christensen et al., 2019). After data from the population were obtained, researchers then determined samples that had characteristics, namely (1) administrators who had an age range between 18 and 35 years, (2) administrators who were active in activities, (3) had no history of disease, and (4) had low levels of anxiety. Then the researcher divided the group into 3 groups, namely the experimental group (1.a) of integration 21st century skills with a total of 9 people, an experimental group, an experimental group (1.b) of PYD integration with 9 people, and a non-integrated control group of 9 people. The process of grouping samples is carried out through ranking. So from the ranking, the number of samples in this study was 27 people.

In compiling the activity program, we adapted from the helping factor in the outdoor adventure program (Gargano & Turcotte, 2021). In this study, the population was taken from AOPGI branch administrators in West Java spread across several vulnerable cities and districts aged from 15-35 years, totalling 96 people. The activities carried out at Mount Kerinci 3.805 masl Kayu Aro, Jambi Indonesia. The participants were students and students who were members of AOPGI West Java, a total sampling of 27 people. The reason for choosing the AOPGI branch management in West Java is physical skills and having basic experience in mountain climbing and outdoor activities. As well as the need for management capacity development to improve the life skills of management. The instrument used in this study used two instruments, namely the adaptation of the PYD 7 Cs Questionnaire (Manrique-millones et al., 2021) and adapted from and 21st century skills questionnaire adapted from (Sulistyaningrum et al., 2019). As for processing and analysing data, to see the effect of testing, Paired Sample T-Test, i.e., test two averages in one group. Then test independent sample t-test, namely the two-mean difference test, which is used to determine the average difference between the experimental group and the control group. In this study, it is also the calculation for the two-average difference test using the help of the application SPSS v.23 for Windows.

RESULTS AND DISCUSSION

This presents of implementing outdoor education activities without the concept of integration is not appropriate if this activity is to be used as meaningful learning (Chawla, 2022). Self-development activities and social skills for adolescents and youth are the right goals if they want to be integrated with outdoor education (Jordan & Chawla, 2019). So that increasing the integration of OE and PYD is the right combination to promote positive youth development. Today's youth must be prepared to face various social challenges, such as the need to succeed in a competitive environment, cope with stress, face a global pandemic, and further develop in the future as adults (Burkhard et al., 2020). The connectedness of humans with nature has high connectivity with humans because humans also come from nature, so it is not surprising that activities in nature are able to awaken human values that exist in them (Jordan & Chawla, 2019).

Outdoor education integration of PYD

Man and nature are an inseparable whole; the connectedness of nature indicates the positive development of the younger generation, and the relationship with nature proves to be important for the development of the positive identity of the participants (Alavi et al., 2023). In the research conducted, researchers found many unique things that happened because the integration carried out was that each component of PYD 7 Cs was carried out in 1 program. In accordance with the integration principle of Kendeln, participants first and foremost explained the purpose of the activity from the beginning and what would be done according to the integrated components. Second participants are given an explanation of good and correct program procedures for each program given. Finally, participants reflect on the activity and what values are in accordance with the given components. With that way, it is not impossible that this kind of activity will be more meaningful and feel the benefits of the activities provided. Below are the results of the independent T-test of OE integration with PYD.

Table 2. Independent sample T-Test Outdoor Education Integration PYD

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	T	Df	Sig. (2-tailed)
PYD	17.993	0	4.536	30	0
Control			4.536	19.283	0

In the table above, it can be seen in the t-test column for equality of means that each group has a significant influence on the increase in PYD. Researchers believe this happens with the integration of 1 variable component in 1 outdoor education program. Whereas in Levene's Test for equality of variance column, there is a difference in the influence of the PYD integration group with the control group with a calculated F value of 17.993 and a significance level of 0.000 smaller than 0.05 so that the difference in the influence of the PYD integration outdoor education group is more significant than the control group. The increase in PYD in this research researchers believe the role of the Kendeln integration concept of increasing PYD in the OE program begins with a focus on 1 component 1 OE program. The increase in gain score per element in the PYD component has different variations. More details can be seen from the diagram below.

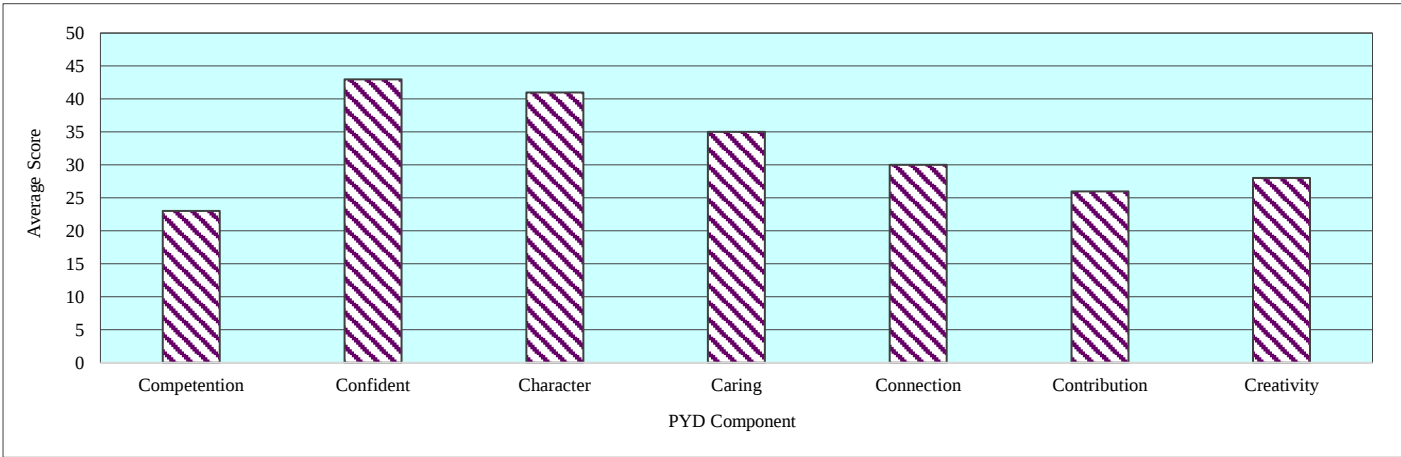


Figure 2. PYD Upgrade Diagram

Figure 2 presents an increase in the average score of the PYD component, where the improvement of competence is 23, for confidence 43, for character 40, for caring 35, for connection 30, for contribution 25 and for creativity 28. From the figure above, the highest increase occurred in the confident component. The increase in pretest and posttest scores carried out shows that the component confident (confidence) has the highest gain score. This researcher assumes that activities in the wild have a good influence on increasing one's self-confidence (Mudzakir & Mubarak, 2020). The increase in PYD through OE is also characterised by an increase in one's character, a character that is awakened from the results of activities in the wild. OE activities are not just fun; they must include high-impact activities. A person's competence is enhanced through the development of knowledge, skills, and character of the person concerned. To produce Peak Adventure, activities in the OE must be able to exclude participants from the comfort zone (Cenić et al., 2023). OE activities are also useful for increasing one's concern for care, both social care and concern for the environment (Suhendra, 2019). OE activities also increase the creativity of someone who does outdoor activities, especially in outdoor activities facilitated by a guide or facilitator (Akin & Bakar, 2023).

Outdoor Education Integration of 21st Century Skills

In the millennial era, most humans began to abandon conversional ways of living their lives and were replaced by modern lifestyles. Today's modern lifestyle that is trending brings a positive impact as well as a very large negative impact. The positive impact is an active contribution to the world of science and technological progress while the negative impact is no less numerous, especially affecting the social and moral development of adolescents (Odabaşı et al., 2023). OE activities do not have a significant impact on technology skills, but OE has a high impact on self-control and wise use of technology (Allan et al., 2024).

Table 2. Independent sample T-Test Skills of the 21st Century

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	T	Df	Sig. (2-tailed)
21st Century Skills	15.579	0.000	3.536	30	0.000
Control			3.536	17.283	0.000

In the table above, it can be seen in the t-test column for equality of means that each group has a significant influence on improving 21st century skills with a Sig. (2-tailed) value of 0.000 each. Meanwhile, in the column Levene's Test for equality of variance, there is a difference in the influence of the 21st century skills integration group with a calculated F value of 15.579 and a significance level of 0.000 smaller than 0.05 so that the difference in the influence of the outdoor education group of 21st century skills integration is more significant than the control group.

Increasing 21st century skills in this research Referring to the concept of Kendellen integration, improving 21st century skills in the OE program begins with a focus on 1 component 1 of the OE program. In research activities, 1 component 1 program is carried out. To see the improvement, it can be seen in the diagram below.

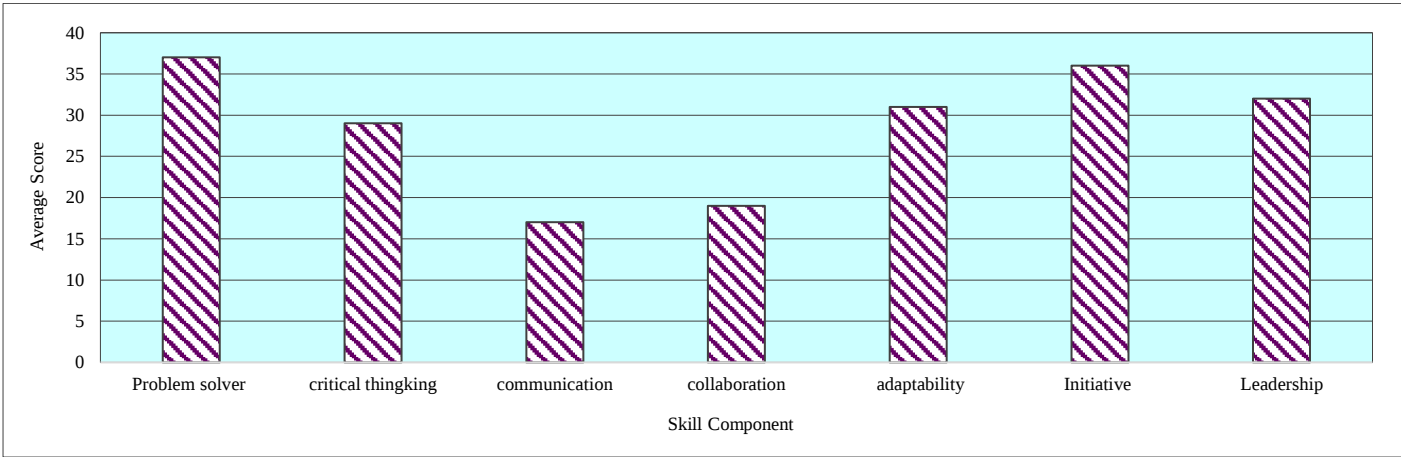


Figure 2. 21st Century Upskilling Diagram

Figure 3 presents an increase in the average score of the 21st century skills component, where the improvement of problem solver is 37, for critical thinking is 29, for communication is 17, for collaboration is 19, for adaptability is 31, for initiative is 36, and for leadership is 32. From the figure above, the highest increase occurred in the problem solver component.

Increasing 21st century skills in this research Referring to the concept of integration (Kendellen et al., 2016), improving 21st century skills in the OE program begins with a focus on component 1 of the OE program. In research activities, 1 component 1 program is carried out. The quality of learning can be judged by the effectiveness of a learning scene. The existence of a briefing and debriefing process carried out between participants and instructors makes meaningful and quality learning (Gong, 2024). Although this activity was carried out within 3 days, the implementation of more than 32 hours of lessons meant that the learning carried out was more focused and more meaningful. With this kind of learning, participants can experience learning without being disturbed by other materials, with debriefs or reflections given for each component, making the integration of each component more embedded and can be implemented over a long period of time, not just temporarily (Pierce & Telford, 2023). Learning and innovation skills in the 21st century consist of communication and collaboration skills, problem solving and critical thinking, innovation, and creativity (Ichsan et al., 2023). The integration of OE in 21st century skills is built with intensive communication during activities; the difficulties faced in outdoor activities make participants think critically and efficiently find solutions to face limitations in OE activities (Crismono, 2017). Digital literacy skills consist of information literacy, media literacy, and information and communication technology. Through OE, there is technically no prominent increase, but conceptually participants are wiser in the use of digital

tools (Prayogi, 2019). Life-career skills consist of flexibility and adaptability, initiative and self-control, cross-cultural socialising, productivity and consideration, responsibility, and leadership (Chu et al., 2017). The improvement of life-career skills has increased with an increased sense of responsibility and leadership of a person; in OE activities, responsibility and leadership are two of the prioritised factors (Vigane & Dyrstad, 2022).

The principle of integration in learning is the key to success in this study; focussing on 1 component on 1 activity makes participants more able to absorb and understand each core of the intended learning (Varouchas et al., 2018). Integrating components in one activity will make learning more effective. In OE, experiential learning prioritises the process of activities that occur rather than the results, so that everything that happens in the process of the activity can be learnt directed to the intended component (Leadbeatter, 2021).

Another important factor in this OE experiential learning is the role of the facilitator. How this facilitator can see the moment of implementation in the activities experienced by the participants so that each of these events can be a subject for discussion and reflection. The role of the facilitator here is not as a teacher who informs but provides a way for participants to understand and be aware of the core of the learning in question (Nordentoft & Olesen, 2023). The role of this facilitator in this activity is (1) to provide briefings to participants about the rules, objectives, and intentions to be carried out, which are integrated with components (2) to accompany and observe events in the process of participant activities (3) to discuss and reflect on what participants experience and direct these reflections to the intended components.

In this research process, the activities carried out are long trips across several outdoor locations; the role of the facilitator is also as a supervisor in activities that lead to the intended integration; besides that, the facilitator must also be an expert in activities and must also be an expert in providing learning to participants (Marnewick, 2023). In addition, the feedback given to students on the activities they experience has been proven to have the strongest potential impact on their learning, so that the understanding and awareness received will be more interpretable and used as a guide for future participants (Gravett & Winstone, 2019).

CONCLUSION

Outdoor education has a significant influence on positive development in individuals, particularly in the context of positive self-development (PYD) and 21st-century skills. Through OE activities, individuals can improve social skills, creativity, and critical thinking abilities. Activities in the program include canoeing, campfire, solo camp, tree climbing, rapeling, slackline, and hiking. Which have been proven to allow participants to learn to work together, communicate effectively, and overcome challenges directly. In addition, interaction with the natural environment also contributes to improved mental and emotional health, which is important for supporting a person's character growth and confidence. By facilitating educational and enjoyable experiences, outdoor activities can be an effective means of equipping individuals with the necessary skills in an ever-changing world. Therefore, the integration of outdoor experiences in educational curricula and self-development programs is highly encouraged to support the formation of a generation that is better prepared to face the challenges of the 21st century. Going forward, further research needs to be conducted to dig deeper into the most effective methods and approaches in utilising OE activities for the development of PYD 12Cs and 21st century skills.

Technological advances in the sophisticated 21st century are an opportunity and challenge for young people. Youth have excess energy if not channelled into positive activities; outdoor activities are still a strategic choice for youth to be given valuable experience with the concept of integration. An attitude and skill are needed to survive and develop in the modernisation era. For this reason, the development of the PYD is the main key to the progress of the country. Fostering a positive young generation through outdoor education is an important thing in a country. The results prove that outdoor education activities can contribute to developing cognitive, affective, psychomotor, social, and emotional aspects of the community. The novelty in this study is in terms of the method carried out by comparing two outdoor education integration programs. The author sees that outdoor education activities today are not only a game activity; more than outdoor activities have an impact on the psychosocial development of adolescents; more than that,

outdoor activities coupled with technology and modernisation also have an impact on the adventure and sports industry that produces economic value for the community. Therefore, outdoor education activities must be carried out with more targeted support from the government and policy holders so that the younger generation can benefit greatly from outdoor education activities.

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CONFLICT OF INTEREST

There is no conflict of interest in this study.

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