

OCTA & Deep Learning: A New Strategy to Instill the Character of Patriotism in Elementary Schools

Wildan Zulkarnain¹, Bambang Budi Wiyono¹, Ali Imron¹, Maisyarah¹, Sunarni¹

¹ Educational Management Program, State University of Malang, Malang, Indonesia,

Corresponding author, email: wildan.zulkarnain.2401329@students.um.ac.id

Keywords

Character Building; Love of The Country;
 Deep Learning,
 Outbound Training

Abstract

This study aims to examine the effectiveness of the outbound love of the homeland (OCTA) model in instilling national values in elementary school students based on deep learning. Through outbound activities based on deep learning, students are invited to develop a sense of love for the homeland and strengthen nationalism in everyday life. Teachers act as facilitators in implementing the OCTA model, while the principal is expected to support this program as part of school activities. The results of the study indicate that the OCA model is effective in increasing the sense of love for the homeland in students. For further research, it is recommended to conduct trials on a wider scale involving various levels of education and the development of more complex materials and games according to the characteristics of students.

1. Introduction

Indonesia is a country rich in both human and natural resources. As a diverse country, Indonesia has various cultures, thousands of islands, customs, religions, races, ethnic groups, languages, political views, and other differences. This diversity can be a valuable asset for the country, but it also has the potential to threaten the unity of the nation. In order to maintain unity, a shared awareness is needed to see diversity as the wealth of the nation. Education plays an important role in transforming the nation's noble values so that they are not eroded by the influence of foreign cultures. Therefore, according to Essien et al., (2023) Education that is made a top priority and designed to be functional, inclusive, interactive, collaborative, integrative, culture-based, scientifically oriented, entrepreneurial, and supported by technological innovation can create a more advanced and harmonious society.

However, in reality, children since childhood are only taught to memorize the beauty and goodness of honesty, courage, hard work, cleanliness, and the evil of cheating and incompetence. These good values are only taught and tested as knowledge on paper by memorizing as mandatory material. Planting these values can be through one of them, namely character education. Early character cultivation aims to build a strong moral nation in the future. Character cultivation can run effectively through character building that is harmonized and integrated into the curriculum, not taught as separate material (Marini, 2017). In addition, character must also be instilled through direct activities that have a positive impact on the school environment and society, so as to encourage changes in student behavior for the better.

In addition, character education also plays an important role in strengthening patriotism and love for the Unitary State of the Republic of Indonesia (NKRI). The cultivation of these values, including the formation of good personalities, attitudes and behaviors for the younger generation, requires an interesting approach that still achieves the goals effectively and efficiently. One method that can be used is through training, which is currently popular in the form of outbound activities. Outbound activities are aligned with the deep leaning learning approach. Cao & Sun (2024) with education reform, deep learning is gradually applied to education, which can stimulate students' initiative in learning and improve their learning efficiency. Mishra et al., (2021) deep learning is a computer-based modeling approach, which consists of many processing layers used to understand data representations with multiple levels of abstraction.

According to LeCun et al., (2015); Cholissodin et al., (2020); and McPhail, (2021) that deep learning discovers complex structures. Deep Learning is learning based on hierarchical features, where the shape of the hierarchical features can be scaled in a certain size that can be adjusted to the case being processed. The concept of the subject and the epistemic structure of the subject are at the center. Winje & Løndal (2020) that deep learning is a key term in current educational discourse around the world and is used by researchers, policy makers, stakeholders, politicians, organizations, and the media. There are 2 conceptualizations, namely meaningful learning and

learning transfer, both based on a cognitive learning perspective. Wibawa et al., (2022) stated the bibliometric results of research in the Netherlands, China, the United States, India, and Norway are the five countries that contribute the most to deep learning in education. Possible future research directions on deep learning in education include online, machine, blended, remote, informal, and deep reinforcement learning. Tian et al., (2022) stated that the key to deep learning is to develop students' critical thinking skills, information integration, communication and collaboration, and constructive reflection, which can be developed in the process of problem solving so that students can further develop their core literacy based on the acquisition of deep learning skills.

The application of deep learning can affect students' socio-emotional development, students not only memorize the lessons given by the teacher, but students holistically know, understand deeply which can later be applied in everyday life (Arifin, 2025). *Deep learning* is a learning approach that emphasizes in-depth concepts and mastery of competencies that cover narrower material. There are 3 process elements in deep learning, namely: (1) *meaningful learning* process, students can interpret the things that students are learning, (2) *Mindful Learning* process, students can become active agents who consciously intend to develop their understanding and competence, (3) *Joyful Learning* process, which makes students motivated in undergoing the learning process (Kenya, 2024). The research results of Zhang & Cao (2021) and Zhang (2022) for the application of deep learning in education to be more effective and faster can be through experiments.

Suryawan & Widyastuti (2020) that outbound is an outdoor activity designed to train a person to have a tough mentality and character, both physically and psychologically, and in line with the norms of social life. With its educational, inspirational, and motivational nature, outbound is a very suitable method for shaping the character of the younger generation, including instilling values of love for the country and the Republic of Indonesia. In practice, outbound is often packaged in various activities that combine aspects of education, recreation and character development. Cambridge Dictionary (2020) defines training as the process of learning the skills needed to do a particular job or activity. Outbound World (2020) adds that outbound also has recreational purposes designed to achieve pre-planned program targets. Meanwhile, according to Annisa & Zuliani, (2023) Outbound is a simply designed learning method, where the teaching or training process is structured to foster enthusiasm, provide encouragement, and develop participants' skills with a problem-solving-based approach that can motivate children to actualize their potential as a form of positive self-concept. Activities can include energizing games, team building, and high rope games, which are not only entertaining but also build leadership, teamwork, and communication skills.

Outbound activities fulfill 3 deep learning processes, namely students interpret the material about Love for the Motherland, students can become active agents to develop love for the country for themselves, their families, and friends around them, with the outbound model students become motivated in undergoing learning with the material for planting the character of love for the country NKRI. Outbound can be implemented outside the classroom. Many areas offer outbound places including in Malang City. Bena (2018) states that Malang City is one of the regions in Indonesia that offers various outbound locations with supporting facilities. These locations include Songgoriti, Coban Rondo, Selecta, Trawas, and Wonosari Tea Garden which provide various outbound packages specifically designed for children. These packages include activities such as energizing games, team building games, and high rope games, which aim to motivate participants to learn more, organize, and improve their capabilities as students.

Through this article, the author intends to provide guidance and insights to educators in instilling the character of love for the country to elementary school students in Malang City. The cultivation of this value is crucial to ensure that love for the country remains deeply embedded in the younger generation, even when they have to face life abroad. By utilizing innovative character education and activities such as outbound, it is hoped that students will be able to develop their potential holistically and become the next generation that is resilient and has high integrity.

2. Methods

This research is research and development (R&D). Sugiyono, (2011) states that the research method used to produce certain products and test the effectiveness of these products. Richey & Klein, (2015) argue that design and development research is defined as follows "*The systematic study of design, development and evaluation processes with the aim of*

establishing an empirical basis for the creation of instructional and non-instructional products and tools and new or enhanced models that govern their development". From this opinion that development research to create a product that can be in the form of both instructional and non-instructional tools or can also be in the form of a model. Research and development in this study used the Borg & Gall (1983) Model that development has 10 steps, including: (1) *research and information collecting*, (2) *planning*, (3) *develop preliminary form of product*, (4) *preliminary field testing*, (5) *main product revision*, (6) *main field testing*, (7) *operational product revision*, (8) *operational field testing*, (9) *final product revision*, and (10) *dissemination and implementation*. R&D used to develop a deep learning-based *training/outbound* model desired by teachers in instilling a sense of love for the homeland in fostering an attitude of love for the Republic of Indonesia in elementary schools in Malang City. Descriptive analysis was used to determine the effectiveness and efficiency of the training/outbound model device to instill a sense of patriotism in fostering an attitude of love for the Republic of Indonesia in Greater Malang Elementary Schools based on deep learning.

After the research was conducted, model planning was carried out and then the Outbound Cinta Tanah Air (abbreviated as OCTA) model was developed by the research team. *Content validity, logical validity, and face validity* were tested to *expert judgment*. *Judgement* experts were appointed as many as 2 people, namely experts in the field of training and experts in the field of character education. After getting input from the *expert judgment*, and the research team made revisions to the questionnaire, the next step was to test the model on 5 students and 5 teachers to get input on content using a questionnaire. After completing the trial, the OCTA product was then disseminated to schools. The population in the study were elementary school students in grades 4, 5, and 6 and an accompanying teacher. Sugiyono (2011:55) "Population is a generalization area consisting of objects or subjects that have certain quantities and characteristics set by researchers to study and then draw conclusions. The technique of sampling teachers and students by means of *non-probability* sampling, namely quota samples or samples that have been determined / determined by researchers due to certain considerations. The number of samples consists of 5 schools, namely 3 elementary schools in Malang city, 1 elementary school in Malang Regency, and 1 elementary school in Batu City. The total sample size was 5 teachers and 50 students. Data collection using both open and closed questionnaire techniques was supported by interviews with teachers and students, as well as observations of teachers and students in outbound implementation activities. Data analysis was done with quantitative analysis.

3. Result and Discussion

The results of the feasibility test analysis of the outbound model product for loving the country on the accompanying teacher

This study conducted a feasibility test of deep learning-based outbound products by involving five accompanying teachers as respondents. The results of the analysis showed that overall, four teachers (80%) rated the outbound product as very feasible, while one teacher (20%) rated it as very feasible, with a mean value of 27.6 and a median of 28. Further explained in table 1.

Table 1 Results of Feasibility Test Analysis on Teachers

Results of Feasibility Test Analysis on Teachers					
No.	Analyzed	Analysis Model	Criteria	Frequency	%
1	Product Feasibility	Outbound Products	Very unfit	0	0
			Not Feasible	0	0
			Less Feasible	0	0
			Worth	1	20
			Very Feasible	4	80

	Product Format	Very unfit	0	0.
		Not Feasible	0	0
		Less Feasible	0	0
		Worth	1	20
		Very Feasible	4	80
	Product Content	Very unfit	0	0
		Not Feasible	0	0
		Less Feasible	0	0
		Worth	1	20
		Very Feasible	4	80
	Product Language	Very unfit	0	0
		Not Feasible	0	0
		Less Feasible	0	0
		Worth	1	20
		Very Feasible	4	80

Based on Table 1, the results of the analysis of the outbound product format subvariable consisting of six question items, the majority of accompanying teachers (80%) rated the product as very feasible and 20% rated it as very feasible, with a mean value of 32.4 and a median of 34. Furthermore, in the product content subvariable which includes seven questions, the results also show that 80% of teachers rated it as very feasible and 20% rated it as very feasible, with a mean of

28.2 and a median of 29. The language aspect in the outbound product also received a very positive response, with the majority of teachers (80%) rating it as very feasible and 20% rating it as very feasible.

In addition, the mentor teachers also provided feedback on the feasibility of the product, which was generally constructive, with several main suggestions, such as the need for a more structured schedule, increasing the number of games, and integrating participants from various schools to increase social interaction. In addition, they suggested that the outbound duration be extended, the number of coaches be increased, and improvements to technical aspects such as sound quality or backsound in outbound activities. further input is presented in Table 2.

Table 2 Mentor Teacher Input

Mentor Teacher Input

No.	Coment	Conclusion
1	Hopefully in the future there will be more trainer training time and not rushed. Hopefully outbound activities like this will be held more often to train teachers' ability to develop insights and skills, thank you very much.	That outbound activities are very good to be carried out at school, can train the ability of teachers to develop insights and skills and can foster a sense of unity and be ready to sacrifice for the common interest. For future input,
2	Outbound is very good, the place is also spacious, there are also various competitions, maybe the time is more clarified and it is actually good and adequate.	there needs to be time scheduling, more games, and students mixed with
3	More time for game practice, more fun locations, more coaches. More games could be added and coaches could be more active	other schools so they can get to know each other.

4	Overall, it was very good. The obstacle is the music background, the speaker has a problem. It would be good to have one so that the trainer can focus more on outbound. It would be even more exciting if there was interaction between schools to increase the social spirit of children.
5	It is very interesting that it fosters a sense of unity and readiness to sacrifice for the common good.

Participant Evaluation Results on the Application of the Love for the Motherland Outbound Model Product

A total of 50 students who participated in the outbound activities provided responses that were analyzed using Kirkpatrick's evaluation model, which includes four main aspects: reaction evaluation, learning evaluation, behavior evaluation, and outcome evaluation. Overall, the evaluation results showed that 92% of students strongly agreed with the outbound implementation, while the other 8% agreed, with a mean value of 103.44 and a median of 105.50. Further results of the evaluation of outbound implementation are described in Table 3.

Table 3 Results of Evaluation of the Implementation of the Kirkpatrick Outbound Model by Learners Overall and Per Sub-Variable

Results of Evaluation of the Implementation of the Kirkpatrick Outbound Model by Learners Overall and Per Sub-Variable					
No.	Analyzed	Analysis Model	Criteria	Frequency	%
1	Evaluation of Outbound Implementation with the Kirkpatrick Model	Overall Kirkpatrick Model Evaluation	Strongly Disagree	0	0
			Disagree	0	0
			Undecided	0	0
			Agree	4	8,0
			Strongly Agree	46	92,0
2	Evaluation of Outbound Implementation with Kirkpatrick Model per Sub-Variable	Reaction Evaluation	Strongly Disagree	0	0.
			Disagree	0	0
			Undecided	0	0
			Agree	2	4,0
			Strongly Agree	48	96,4
		Learning Evaluation	Strongly Disagree	0	0
			Disagree	0	0
			Undecided	0	0
			Agree	7	14,0
			Strongly Agree	43	86,0
Behavior Evaluation	Strongly Disagree	0	0		
	Disagree	0	0		
	Undecided	0	0		
	Agree	7	14,0		
	Strongly Agree	43	86,0		

**Results of Evaluation of the Implementation of the Kirkpatrick Outbound Model by Learners
Overall and Per Sub-Variable**

No.	Analyzed	Analysis Model	Criteria	Frequency	%
		Evaluation of Results	Strongly Disagree	0	0
			Disagree	0	0
			Undecided	1	2
			Agree	9	18,0
			Strongly Agree	40	80,0

Based on Table 3, in the aspect of reaction evaluation, the majority of students (96%) strongly agreed, while the other 4% agreed, with a mean of 28.20 and a median of 29.00. Learning evaluation showed that 86% of students strongly agreed and 14% agreed, with a mean of 23.54 and a median of 24.00. Meanwhile, behavioral evaluation showed that 86% of students strongly agreed and 14% agreed, with a mean of 37.50 and a median of 38.50. On the outcome evaluation, 80% of students strongly agreed, 18% agreed, and 2% were undecided, with a mean of 14.20 and a median of 15.00.

Students also provided some feedback that was in line with the opinion of the accompanying teacher. Some of the suggestions they made included increasing the variety and number of games, increasing the volume of sound in the activities, mixing participants from various schools for more diverse social interactions, and providing prizes for 1st, 2nd, and 3rd place winners. Overall, students' responses indicate that outbound activities are highly appreciated and provide positive experiences for them, with some aspects that can be improved for future activities.

Based on the results of data analysis, the Outbound Cinta Tanah Air (OCTA) model product which includes aspects of product format feasibility, content, and language, the majority of respondents stated that this model is very feasible. The accompanying teacher assessed that this outbound activity is very feasible to be implemented at school because it can train teachers' skills in developing insights and skills. In addition, this activity also helps foster a sense of unity and a spirit of sacrifice for the common good. However, some suggestions were made for future improvements, including the need for more structured planning, adding a variety of games, and adding participants from different schools for greater social interaction.

Meanwhile, the results of the evaluation using the Kirkpatrick model followed by students as participants of the Cinta Tanah Air Outbound showed that they strongly agreed with the implementation of this activity. The assessment includes four main aspects, namely reaction evaluation, learning evaluation, behavior evaluation, and outcome evaluation. The students also gave some suggestions such as increasing the number and variety of games to make it more exciting, increasing the volume of background music, and conducting off-site activities with participants from different schools to get to know each other. In addition, they also suggested that this outbound activity could be held again in the future, and giving prizes to the 1st, 2nd, and 3rd place winners as a token of gratitude.

Furthermore, outbound is not only a recreational activity, but can also be an effective means of internalizing values or characters to students. Outbound can be used to instill a sense of love for the country in fostering an attitude of love for the Republic of Indonesia. Zulkarnain (2018) states that outbound has its own characteristics where all activities are translated into real and factual forms, namely participants are introduced to various types of games. Various games in outbound training have an important philosophy and essence of material, so that they can hone and improve leadership skills, build a compact team, effective communication, and form positive self-character such as courage, honesty, sportsmanship, cooperative, unselfish, and so on.

In this study, the approach used refers to the training model proposed by Silberman & Biech, (2015), there are several types of learning in the active training method. First, affective learning, which focuses on developing individual attitudes, feelings, and preferences towards certain situations, procedures, or products. This model also helps to increase one's awareness of reactions to new issues or ideas. Second, behavioral learning, which focuses on developing real competencies in the form of procedural and operational skills, as well as the application of certain methods and

techniques. This model aims to equip individuals with practical skills that can be applied directly. Third, cognitive learning, which focuses on reinforcing information and concept relationships in a series of learning materials

Outbound activities are one example of deep learning that refers to 3 elements, namely the *Mindful Learning* process, the *Mindful Learning* process, and the *Joyful Learning* process. Wang & Hsieh (2022) research results show: (1) deep learning approach has a positive influence on self-regulated learning. (2) Self-regulated learning has a positive influence on career self-efficacy. (3) deep learning approach has a positive influence on career self-efficacy. (4) Self-regulated learning mediates the effect of deep learning approach on career self-efficacy. (5) Cognitive engagement moderates the effects of deep learning approach and self-regulated learning on career self-efficacy. The results of Suwandi et al., (2024) research that deep learning makes a positive contribution in improving critical thinking skills, active participation, and student engagement in the learning process. This needs to be accompanied by the provision of infrastructure, teacher readiness, and reducing traditional curriculum constraints that inhibit flexibility. Pan et al., (2023) stated that the concept of deep learning emphasizes on mobilizing students' internal motivation, focusing on problem-solving ability, improving students' critical thinking level, and developing students' lifelong learning ability. Damanik & Muhammad (2025) found that deep learning enhances students' analytical skills, empathy, and cultural awareness, which bridges the gap between classroom theories and real-world applications. The study highlights the need for professional development for educators, supportive policies, and equitable learning environments to overcome implementation challenges. While Mishra et al., (2021) Based on the findings, it can be concluded that the model of developing the cultivation of patriotism character through the formation of national attitudes in elementary schools in Malang Raya Regency can be applied in other schools besides the schools participating in this study. In addition, this model can be applied to other levels of education, ranging from kindergarten, junior high school, high school / vocational school and even universities, the wider community. Of course, when applied at different levels, it is necessary to consider the material and types of games that are suitable for the characteristics and age of the participants. By adjusting the depth of the material and the complexity of the game, we hope that this model can provide optimal benefits in conveying the values of love for the country to every student. Wahyudi et al., (2021) stated that the development of the character of love for the country in its concept prioritizes the interests of the country above personal interests. In addition, Elbes & Oktaviani (2022) also argue that character strengthening also plays a role in improving students' *soft skills*, which are needed to face various challenges in professional life.

In addition, the successful implementation of the Outbound Cinta Tanah Air (OCTA) model also depends on the support of various parties, including schools, educators, and parents. Schools must provide adequate facilities and ensure that this activity is part of the character education curriculum. Teachers play a role as facilitators who not only deliver material but are also able to create a fun and meaningful learning atmosphere for students. Meanwhile, the role of parents in instilling national values in the family environment is equally important so that what students learn in outbound activities can continue to be strengthened and applied in everyday life. With a good synergy between schools, teachers and families, this model can be an effective strategy to build a strong nationalism character in the younger generation.

4. Conclusion

Based on the research results, it can be concluded that the deep learning-based outbound model as a method of cultivating the character of patriotism for elementary school students in Malang Raya is considered very feasible and effective. The majority of accompanying teachers assess that this deep learning-based outbound product is very feasible to be applied in character learning because students can interpret, can increase their understanding and competence, and are motivated in the process of learning the character of patriotism. Students can improve their insights, skills, and sense of unity and nationalism towards the nation and state.

Evaluation using the Kirkpatrick model also showed that students were very enthusiastic and felt that the activity was beneficial to their personal development. Outbound proved to be not only a means of recreation, but also had a significant educational impact, especially in instilling national values. The outbound-based training method provides hands-on experience that helps students internalize patriotism in a more interesting, interactive and fun way than conventional learning methods, which can later be applied in everyday life.

In addition, this research also shows that a character education approach that is aligned

with the curriculum and implemented through hands-on activities is more effective than simply delivering theory. This model is not only applicable in primary schools but also has the potential to be developed in other education levels by adjusting the materials and complexity of the activities.

Reference

- Annisa, P., & Zuliani, A. F. . (2023). The Effect Of The Outbound Method On Children's Skills And Dexterity. *Study Education*, 1, 230-232. <https://doi.org/https://doi.org/10.62966/ijose.v1i3.303>
- Arifin, A. (2025). *Deep Learning Approach and its Application in Merdeka Curriculum*. <https://www.panduanmengajar.com/2025/01/pendekatan-deep-learning-dan.html>,
- Bena, E. . (2018). *8 Outbound Tourism Places in Malang Raya and its Surroundings*. Online. <https://tempatwisataunik.com/wisata-indonesia/jawa-timur/wisata-outbound-di-malang>
- Borg, W. ., & Gall, M. . (1983). *Educational Research: an Introduction*. Longman Inc.
- Cao, Y., & Sun, Y. (2024). The Research on the Application of Deep Learning in Education. *IETI Transactions on Data Analysis and Forecasting (ITDAF)*, 2(3), 4-11. <https://doi.org/10.3991/itdaf.v2i3.51413>
- Cholissodin, S., Soebroto, A., Hasanah, U., & Febiola, Y. (2020). AI, Machine Learning, and Deep Learning. *Faculty of Computer Science, Brawijaya University, Malang*.
- Damanik, F. H. S., & Muhammad, G. (2025). The Deep Learning Approach in Sociology Education at the High School Level. *SocioEdu: Sociological Education*, 6(1), 48-54. <https://doi.org/10.59098/socioedu.v6i1.2016>
- Dictionary, C. (2020). *No Title*. Online.
- Elbes, E. K., & Oktaviani, L. (2022). Character Building in English for Daily Conversation Class Materials for English Education Freshmen Students. *Journal of English Language Teaching and Learning*, 3, 36-45.
- Essien, E. E., Christopher, O. C., & Wali, C. . (2023). Education And Social Reconstruction: A Mechanism For Building A Peaceful Society In Nigeria. *Journal Of Environmental And Tourism Education*, 6.
- Kenya, S. (2024). *Get to Know Deep Learning, a New Learning Approach from Mendikdasmen*. Online. <https://www.ruangguru.com/blog/pendekatan-deep-learning>,
- LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep learning. *Nature*, 521(7553), 436-444. <https://doi.org/10.1038/nature14539>
- Marini, A. (2017). Character Building Through Teaching Learning Proses: Lesson in Indonesia. *PONTE International Scientific Researchs Journal*, 73(5). <https://doi.org/10.21506/j.ponte.2017.5.43>
- McPhail, G. (2021). The search for deep learning: a curriculum coherence model. *Journal of Curriculum Studies*, 53(4), 420-434. <https://doi.org/10.1080/00220272.2020.1748231>
- Mishra, R. K., Reddy, G. Y. S., & Pathak, H. (2021). The Understanding of Deep Learning: A Comprehensive Review. *Mathematical Problems in Engineering*, 2021, 1-15. <https://doi.org/10.1155/2021/5548884>
- Outbound World. (2020). *Differences between Outing and Outbound*. Online. <https://duniaoutbound.com/artikel>
- Pan, Q., Zhou, J., Yang, D., Shi, D., Wang, D., Chen, X., & Liu, J. (2023). Mapping Knowledge Domain Analysis in Deep Learning Research of Global Education. *Sustainability*, 15(4), 3097. <https://doi.org/10.3390/su15043097>
- Richey, & Klein. (2015). *Development Research*. Online. <http://tpers.net/2009/07>
- Silberman, M. L., & Biech, E. (2015). *Active Training: A Handbook of Techniques*. John Wiley & Sons.
- Sugiyono. (2011). *Quantitative Qualitative and R&D Research Methods*. Alfabeta.
- Suryawan, R. F., & Widyastuti, D. D. (2020). Dynamic of Character Education Through the Outbound Training Activities for Student on the Campus. *Dinasti International Journal of Education Management And Social Science*, 1(4), 525-534. <https://doi.org/10.31933/dijemss.v1i4.246>
- Suwandi, Putri, R., & Sulastrri. (2024). Inovasi Pendidikan dengan Menggunakan Model Deep Learning di Indonesia. *Jurnal Pendidikan Kewarganegaraan Dan Politik*, 2(2), 69-77. <https://doi.org/10.61476/186hvh28>
- Tian, X., Zhao, J., & Nguyen, K. T. (2022). Practical Research on Primary Mathematics Teaching Based on Deep Learning. *Scientific Programming*, 2022, 1-7. <https://doi.org/10.1155/2022/7899180>
- Wahyudi, W., Affandi, I., Darmawan, C., & Wahyu, W. (2021). The Practice of Nation Character Building in Border Communities: A Case Study in Sebatik Island, North Kalimantan Province, Indonesia. *European Online Journal of Natural and Social Sciences*, 10, 255-260.
- Wang, C.-J., & Hsieh, H.-Y. (2022). Effect of Deep Learning Approach on Career Self-Efficacy: Using Off-Campus Internships of Hospitality College Students as an Example. *Sustainability*, 14(13), 7594. <https://doi.org/10.3390/su14137594>
- Wibawa, A. P., Dwiyanto, F. A., & Utama, A. B. P. (2022). Deep learning in education: a bibliometric analysis. *Bulletin of Social Informatics Theory and Application*, 6(2), 151-157. <https://doi.org/10.31763/businta.v6i2.596>
- Winje, Ø., & Løndal, K. (2020). Bringing deep learning to the surface. *Nordic Journal of Comparative and International Education (NJCIE)*, 4(2), 25-41. <https://doi.org/10.7577/njcie.3798>
- Zhang, J. (2022). A Multicriteria English Teaching Decision Model Based on Deep Learning. *Computational Intelligence and Neuroscience*, 2022, 1-9. <https://doi.org/10.1155/2022/9030626>
- Zhang, X., & Cao, Z. (2021). A Framework of an Intelligent Education System for Higher Education Based on Deep Learning. *International Journal of Emerging Technologies in Learning (IJET)*, 16(07), 233. <https://doi.org/10.3991/ijet.v16i07.22123>
- Zulkarnain, W. (2018). *Group Dynamics: An Educational Leadership Exercise*. Bumi Aksara.