



Ethno-Project Based Teaching Module to Increase Student Creativity

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Abstrak

Penelitian ini dilatarbelakangi oleh kendala dalam penerapan kurikulum merdeka dalam proses pembelajaran. Kendala tersebut adalah penguasaan teknologi digital sebagai standar kurikulum merdeka dan pemahaman keterkaitan beberapa komponen pokok pada kurikulum merdeka. Penelitian ini bertujuan untuk menghasilkan produk pengembangan berupa ethno-project based teaching module dalam pembelajaran Dasar-Dasar Perhotelan yang valid, praktis, dan efektif untuk meningkatkan kreativitas siswa. Metode penelitian yang digunakan pada penelitian ini adalah penelitian dan pengembangan model ADDIE. Subjek pada penelitian ini berjumlah 39 orang yang terdiri dari: 2 orang judges untuk menilai validitas produk ditinjau dari aspek konten dan budaya, 1 orang guru dan 5 orang siswa untuk menilai praktikalitas produk, dan 31 orang siswa untuk menguji efektivitas implementasi produk pengembangan. Instrumen dan teknik pengumpulan data dilakukan dengan pemberian kuesioner kepada subjek penelitian pada tahapan Develop serta pretest dan posttest pada tahapan Implement. Teknik analisis data dilakukan secara deskriptif kuantitatif dan inferensial. Berdasarkan analisis data yang dilaksanakan dapat disimpulkan bahwa ethno project based teaching module dalam pembelajaran Dasar-Dasar Perhotelan pada materi housekeeping dan public area memiliki validitas yang sangat baik sehingga dapat diimplementasikan pada proses pembelajaran, ethno-project based teaching module sangat praktis untuk digunakan dalam memfasilitasi proses pembelajaran dan ethno-project based teaching module cukup efektif untuk meningkatkan kreativitas siswa.

Kata Kunci: Modul Ajar, Ethno, Project Based Learning, Kreativitas

Abstract

This research is motivated by obstacles to implementing an independent curriculum in the learning process. These obstacles are mastery of digital technology as a standard for the independent curriculum and understanding the relationship between several main components. This research aims to produce a development product in the form of an ethno-project-based teaching module in learning Hospitality Basics that is valid, practical, and effective for increasing student creativity. The research method used in this research is the research and development of the ADDIE model. The subjects in this research were 39: 2 judges to assess product validity in terms of content and culture aspects, 1 teacher and 5 students to assess product practicality, and 31 students to test the effectiveness of product development implementation. Instruments and data collection techniques were carried out by administering questionnaires to research subjects at the Develop stage and pretest and posttest at the Implement stage. Data analysis techniques were carried out descriptively, quantitatively, and inferentially. Based on the data analysis carried out, it can be concluded that the ethno-project-based teaching module in learning Hospitality Basics in housekeeping and public area material has very good validity so that it can be implemented in the learning process; the ethno-project-based teaching module is efficient to use in facilitating the process learning and ethno-project based teaching modules are pretty effective in increasing student creativity.

Keywords: Teaching Modules, Ethno, Project Based Learning, Creativity

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1. INTRODUCTION

The process of implementing education at the primary, secondary and higher education levels is currently oriented towards independent learning through the implementation of an independent curriculum (Akib et al., 2020; Sumardi et al., 2020). Technically, the learning process in the independent curriculum is based on the needs of

students to realize differentiated learning and achieve predetermined learning outcomes. At the primary and secondary education levels, this effort has been implemented in a structured and systematic manner through mobilizing school programs including mobilizing teacher programs, practical teaching teachers, expert facilitators of mobilizing teachers, and several other programs (Csikszentmihalyi & Daga, 2021; Kusumah & Alawiyah, 2021; Mansyur, 2021). However, the Hospitality Basics subject teacher at Restumuning Vocational School, Baturiti District, Tabanan Regency, Bali Province, admitted that he still experienced obstacles in implementing an independent curriculum in the learning process. These obstacles are mastery of digital technology as a standard of independent curriculum and understanding the interrelationship of several key components in the independent curriculum, namely CP (Learning Outcomes), TP (Learning Objectives), ATP (Flow of Learning Objectives), and teaching modules that reflect the profile-based learning process. Pancasila learners. Based on the interview results, an urgent obstacle to be followed is the preparation of teaching modules to facilitate the learning process of Hospitality Basics (Fitri et al., 2023; Umar Seno et al., 2022). Operationally in the classroom learning process, teaching modules are a very important component to realize student learning activities. This teaching module can take the form of a number of tools or media facilities, methods, instructions and learning guidelines that are designed systematically and interestingly. This teaching module aims to: (i) develop teaching tools that guide educators in carrying out learning; (ii) simplify, expedite, and improve the quality of learning; (iii) become a reference for teachers in carrying out learning activities; and (iv) become a framework that describes the procedure and organization of learning according to learning outcomes. In simple terms, the teaching module is similar to the lesson plan in the previous curriculum, but in the teaching module there are components that are more complete than the lesson plan or called lesson plan plus (Chabibie, 2022; Ülger & Çepni, 2020).

Forms of learning activities in modules to create meaningful learning and achieve learning outcomes can be implemented by integrating local wisdom and innovative learning (Ramlah & Arsyad, 2022; Roesmawati et al., 2022). One form of this effort is the Ethno-ProjectBased (EPB) teaching module. This teaching module is an integration of local wisdom with a project based learning model. Ethno is a society or social group within a certain social or cultural system that has meaning due to heredity, custom, religion, language, and so on (Ginting, 2022; Kurniawan & Fatmawati, 2019). Project based learning is learning that provides opportunities for students to carry out learning activities through collaborative project work to produce products (Hawari & Noor, 2020; Markula & Aksela, 2022). Learning with a project-based learning model can provide optimal learning outcomes in the form of increasing higher-order thinking skills, learning motivation (Kuo et al., 2019; Wu & Wu, 2020), innovative perception, critical thinking, and creativity (Barak & Yuan, 2021; Hujjatusnaini et al., 2022; Khaeruddin et al., 2023; Wu & Wu, 2020; Yustina et al., 2020). Project based learning can also be integrated with STEM to foster student creativity (Hasibuan et al., 2022; Siew & Ambo, 2020). Likewise, project based learning with lesson study can increase student creativity (Biazus & Mahtari, 2022; Sutrisno & Nasucha, 2022). Regarding the development of teaching modules on a project-based learning basis, it is also able to provide results in increasing student creativity (Cahyani, 2021; Diarini & Winangun, 2022). In accordance with the results of the empirical evidence above, project based learning provides learning outcomes that are more dominant in increasing student creativity.

The learning process in project based learning is carried out through 6 stages, namely: (i) problem recognition; (ii) designing project plans; (iii) preparation of project schedules; (iv) project implementation and monitoring; (v) testing results (project presentation); and (vi) evaluation and reflection (Marjanah et al., 2021; Nafiah et al., 2023; R. Setiawan et al., 2022). As well as the integration of local wisdom (ethno) are expected to be able to construct

students' knowledge in a meaningful way, especially in learning the Basics of Hospitality. This is because, the implementation of a project-based learning process, especially tourist objects in a certain area, provides meaningful experiences and exploration for students to interpret, be grateful for, and love various types of local wisdom. This activity can increase student creativity, which is an action, idea, or product that can change something that already exists into something new (Capinera, 2021; Syahlan et al., 2023).

Apart from that, the learning process through the project based teaching module will have a positive impact on the tourism and culture industry in Bali in the future. This is because the projects designed by students are able to explore various forms of tourist and cultural attractions in the surrounding area. This form of exploration is then published by students on their various social media channels. This is a form of real student action in implementing the independent curriculum. These benefits, both in terms of the instructional impact through the learning process, in terms of aspects of social life of the community, and aspects of the potential for real action in the implementation of the independent curriculum are the basis for submitting basic research on the development of an ethno project based teaching module which aims to produce valid, practical teaching modules, and effective in learning Hospitality Basics at Restumuning Vocational School, Baturiti District, Tabanan Regency, Bali Province.

2. METHODS

This research is an ADDIE research and development model that focuses on the Develop, Implement, and Evaluate stages. The testing carried out at this stage is to test the validity, practicality and effectiveness of the development product in the form of an ethno-project based teaching module to increase student creativity. In this research, the development product that has been formulated and designed at the Analysis and Design stage is then tested at the Development stage to produce an ethno-project-based teaching module for learning Hospitality Basics that is valid and practical. At the Develop stage, the content and linguistic validity of the teaching module design is tested. based on the ethno-project that has been produced. The content validity test carried out includes aspects of appropriateness of content and appropriateness of presentation. Furthermore, the language validity test carried out in this research includes aspects of readability and conformity with Indonesian language rules.

There were 39 subjects in this study consisting of: (i) 2 judges to assess product validity in terms of content and culture; (ii) 1 teacher and 5 students of SMK Restumuning to assess product practicality; and (iii) 31 students of SMK Restumuning to test the effectiveness of product development implementation. Data collection instruments and techniques were carried out by giving questionnaires to research subjects at the Develop stage and giving creativity tests in a pre-experimental one-group pretest-posttest design at the Implement stage. The data analysis technique was carried out descriptively quantitatively to justify the level of validity and practicality, as well as inferential data analysis techniques using t-test and N-gain to justify the effectiveness of the ethno-project based teaching module in increasing student creativity.

3. RESULTS AND DISCUSSION

Result

This research and development was carried out using the ADDIE model which consists of the Analyze, Design, Develop, Implement and Evaluate stages. Unlike the previous four stages, Evaluate is carried out at each ADDI stage. In this research, development products that have been formulated and designed at the Analyze and Design stages are then tested at the Develop stage to produce an ethno-project based teaching module for learning Hospitality Basics that is valid and practical.

At the Develop stage, content and language validity tests were carried out on the design of the ethno-project based teaching module that had been produced. The content validity test carried out includes aspects of content feasibility and presentation feasibility. Furthermore, the language validity test carried out in this research includes aspects of readability and conformity to Indonesian language rules. This stage involves two judges, namely the judges for content validity testing are N.L Christine Prawita Suyasa, BS., M.Par. and the judges for the language validity test were Sang Ayu Putu Eny Parwati, M.Hum. This test was carried out on August 20 and 21 2023. The results of descriptive data analysis of development products in this test are presented in [Table 1](#).

Table 1. Validity Results of The Ethno-Project Based Teaching Module

No.	Validity	Aspek	Skor Rerata	Kualifikasi
1	Content	Appropriateness of content	4.22	Very Good
		Presentationeligibility	4.50	Very Good
		Average	4.36	Very Good
2	Language	Legibility	4.80	Very Good
		Conformity of Indonesian Rules	4.90	Very Good
		Average	4.85	Very Good

Based on the results of the content and language validity tests above, it can be observed that the average content validity score in the aspect of content suitability is 4.22 and presentation suitability is 4.50 and the average score of 4.36 has very good qualifications. Likewise, the average score of language validity in the readability aspect is 4.80 and conformity to Indonesian language rules is 4.90 and the average score of 4.85 has very good qualifications. This means that the development product in the form of an ethno project based teaching module in learning Hospitality Basics in housekeeping and public area material has very good validity so that it can be implemented in the learning process. However, there are several notes, suggestions and recommendations from the judges, namely the need to add "Turndown Service" which is a service provided by housekeeping in the afternoon between 18.00 - 20.00 WITA and there are still many errors in the use of punctuation, typos, usage affixes, prepositions, and the use of compound words. These notes, suggestions and recommendations were taken into consideration in the research team's discussions which were then accommodated to improve the teaching modules being developed.

Apart from product validity testing, at the Develop stage a practicality test was also carried out by potential users consisting of 1 teacher in the Basics of Hospitality subject and 5 students in class X Tourism 4. This testing was carried out from 21 to 28 August 2023. The following A table of practicality test results by teachers and students is presented. The results of the practicality test for teachers and students are presented in [Table 2](#).

Table 2. Ethno-Project Based Teaching Module Practicality Test Results

No	Subject	Subject Number	Average	Qualification
1	Teacher	G01	4.38	Very good
		S01	4.60	Very Good
		S02	4.60	Very Good
2	Student	S03	4.60	Very Good
		S04	4.60	Very Good
		S05	4.47	Very Good
Average			4.57	Very Good

Based on the results of the practicality test data analysis above, it can be seen that the average practicality scores by teachers and students are 4.38 and 4.57 respectively with very good qualifications. This means that the ethno-project based teaching module produced in this research is very practical to use in facilitating the learning process on housekeeping and public area material. However, it is hoped that this module will feature more case studies about hospitality related to local or ethno wisdom. In addition, this module is expected to be further developed to facilitate the learning process on other subject matter.

After carrying out validity and practicality tests, the Implementation stage or application of the ethno-project based teaching module was carried out in learning Hospitality Basics to increase student creativity. This stage was carried out with a one-group pretest-posttest pre- experimental design. The distribution diagram of student scores from the pretest and posttest results at the Implementation stage in general and the average for each aspect of creativity assessment is presented in Figure 1, and Figure 2.

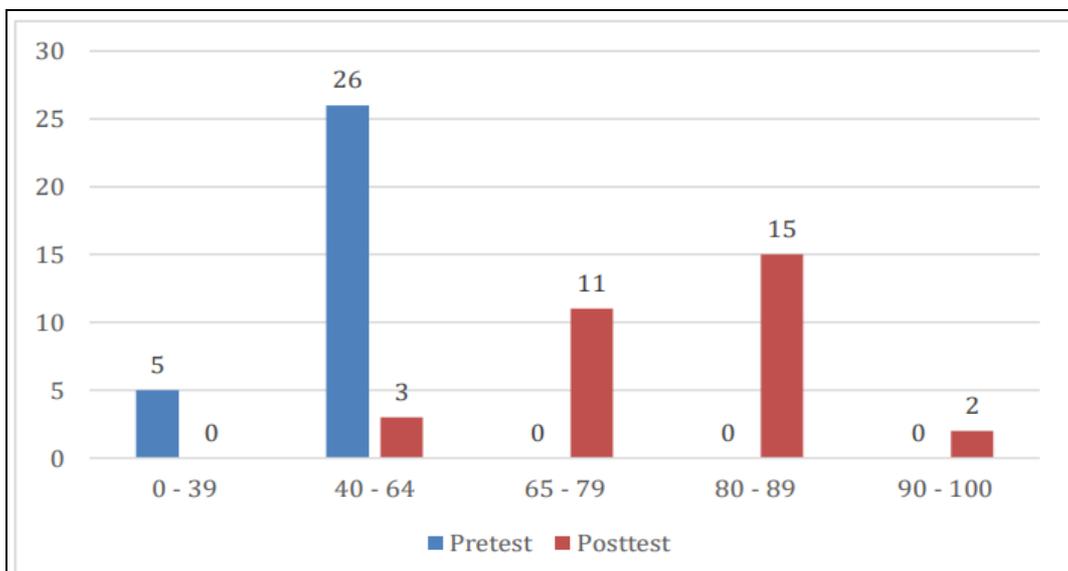


Figure 1. Student Creativity Pretest and Posttest Results

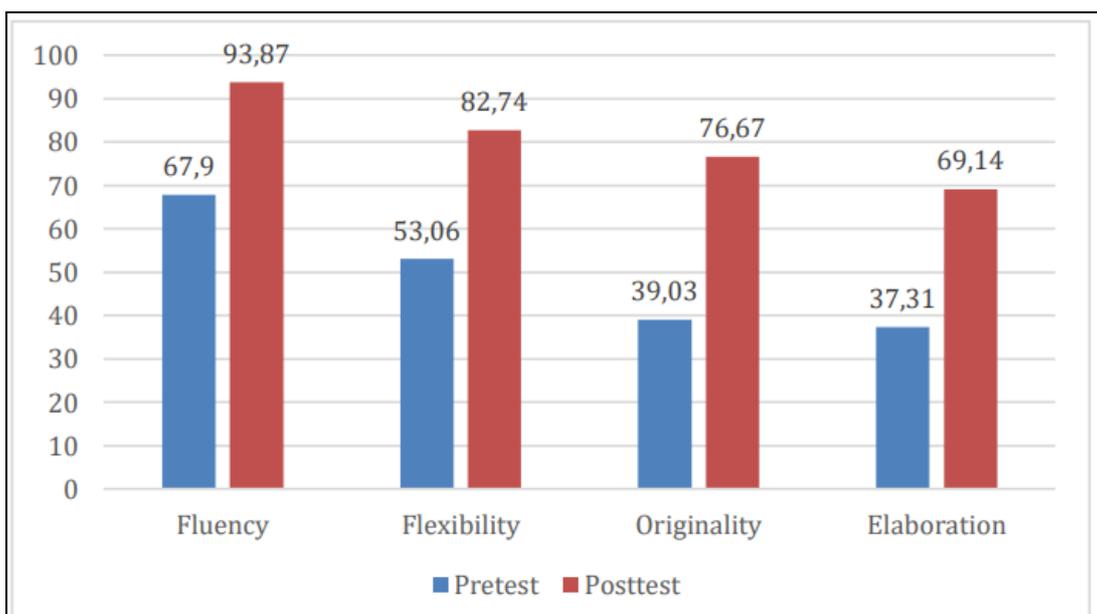


Figure 2. Average Score for Each Aspect of Creativity

Figure 1 above shows that the pretest results of students are still in very low qualifications (0-39) as many as 5 people and low qualifications (40-64) as many as 26 people. The posttest results showed an increase in scores with 3 students in low qualifications (40-64), 11 students in medium qualifications (65-79), 15 students in high qualifications (80-89), and very high qualifications (90- 100) for 2 people. The average scores for students' creativity in the pretest and posttest were 47.10 and 79.06 respectively. If we look closely at each aspect of creativity according to Figure 2, the students' average pretest and posttest scores also increased, namely: the fluency aspect increased from 67.90 to 93.87; flexibility aspect increased from 53.05 to 82.74; originality aspect increased from 39.03 to 76.67; and the elaboration aspect increased from 37.31 to 69.14. The results of the pretest and posttest data show that descriptively there is an increase in student creativity after implementing the ethno project based teaching module in learning culinary basics. To justify this increase, inferential statistics were carried out, namely the t-test and N-gain to show the significance of differences and the level of effectiveness of implementing the ethno project based teaching module in increasing student creativity.

Based on the results of the t-test analysis carried out, the value of $t = 60.815$ was obtained which was greater than $t_{table} (2.000)$ and had a significance of 0.000. This means that there is a difference in the average pretest and posttest scores of students' creativity. Furthermore, to determine the level of effectiveness, an N-gain test was carried out which obtained a score of 61.87 with the qualification of being quite effective. Therefore, it can be concluded that the implementation of the ethno project based teaching module is quite effective in increasing student creativity in learning Hospitality Basics.

Discussions

In accordance with the description above, the ethno project based teaching module in learning Hospitality Basics in housekeeping and public area material has a very good level of validity and practicality. This means that the learning process for Hospitality Basics can run well if it is facilitated with an ethno project based teaching module. The advantages of this module so that it can facilitate the learning process well can be seen from the components that make up the module according to BSKAP references, namely: (i) attractive cover design; (ii) complete identity, including teacher's name, initial competencies, learning materials, time allocation, facilities and infrastructure, Pancasila student profile, phases, learning models, learning methods, learning objectives, topics, meaningful understanding and trigger questions; (iii) learning activities at each meeting with a project-based learning model and local wisdom performances according to the material; (iv) a complete assessment including diagnostic, formative and summative tests; (v) teacher and student reflections as controls in the learning process; and (vi) attachments which include teaching materials, LKPD or job sheets, practice assessment sheets, reading lists, and glossaries (Kasmini et al., 2023; Nor et al., 2022).

Several module developments that have been carried out previously to support the implementation of the independent curriculum have three core components, namely: (i) general information which includes school identity, initial competencies, Pancasila student profiles, target students, infrastructure and learning models; (ii) core components include learning objectives; meaningful understanding, triggering questions, learning activities, assessments, and remedial and enrichment; and (iii) attachments which include teaching materials and student worksheets (Maulinda, 2022; Rahimah, 2022). Even though it has a slightly different structure to the ethno project based teaching module, the most important and characteristic components in preparing independent curriculum teaching modules are meaningful understanding, trigger questions, and worksheets (I. Setiawan et al., 2023; Yulkifli et al., 2022)

If examined from the aspect of learning activities, the ethno project based teaching module integrates the project based learning model and local wisdom that is relevant to the learning material. This integration is in accordance with the mandate of Permendikbudristek Number 16 of 2022 Article 16 paragraph (2) which explains that the implementation of learning can be carried out by accommodating diversity in gender, culture, local regional languages, religion or beliefs, characteristics and needs of students. In addition, learning processes that are integrated with local culture or wisdom provide positive results in efforts to improve the quality of learning, including strengthening character, increasing creative thinking abilities, and independence learning (Nurhikmayati & Sunendar, 2020; R. Setiawan et al., 2022; Sumarni & Kadarwati, 2020). Encouraging the strengthening of learning outcomes which include aspects of insight, character and skills, improving learning outcomes, improving critical thinking skills, improving attitudes, motivation and understanding of learning material, improving problem solving abilities and communication skills, increase environmental literacy, and increase knowledge and social attitudes (Fadli & Irwanto, 2020; Irhasyuarna et al., 2022; Muzdalifah et al., 2023; Pernantah et al., 2022; Ramdani et al., 2021; Sumarni & Kadarwati, 2020).

On the other hand, the learning process that integrates local wisdom can be implemented using a project-based learning model (R. Setiawan et al., 2022)(Sumarni & Kadarwati, 2020) (Huda Shofyana et al., 2022). Project based learning is learning that provides opportunities for students to carry out learning activities through collaborative project work to produce products (Almulla, 2020; Hawari & Noor, 2020; Markula & Aksela, 2022). The advantage of this model is that it trains students to submit hypotheses in solving problems, trains critical and contextual thinking, trains students in making decisions (Kwangmuang et al., 2021; Malik et al., 2020). Likewise, there are other advantages which include increasing learning motivation, creativity, academic skills, communication skills, problem-solving abilities, and creating an enjoyable learning environment (Almulla, 2023; Calavia et al., 2021) (Dewi, 2022). Based on the explanation above, the project based learning model is a model that can be integrated with local wisdom and is proven to increase student creativity (Rahayu & Indriyanti, 2023; Safitri, 2021). In this study, the resulting ethno-project based teaching module also proved to be quite effective in increasing student creativity. Evidence of this effectiveness can be observed in every aspect of creativity, namely fluency, flexibility, originality, and elaboration. Nonetheless, the implementation of the project based teaching module in this study still focuses on TP 03 (Learning Objectives 03) in learning the Fundamentals of Hospitality with housekeeping and public area materials in the pre-experimental design. Therefore, further research development is needed to implement this development product on several other learning materials and quasi-experimental research

designs so as to provide more specific analysis results.

This research has advantages; this module can help students become more familiar with and appreciate their local culture because it is ethno-project-based, which leads to a deeper knowledge of local cultural heritage and traditions. The implication is that this research can encourage teachers and educational institutions to consider more project-based and contextualized learning approaches. Teachers can adopt strategies more oriented towards field activities, hands-on research, and exploration of local cultures. However, this study has limitations in that ethno-project-based modules may be difficult to implement because they depend highly on the local context, culture, and available resources. This could make generalising the research results to different educational environments difficult.

4. CONCLUSION

Ethno project-based teaching modules on learning Hospitality Basics in housekeeping and public areas have very good validity and can be implemented in the learning process. This is evidenced by the average content and linguistic validity test scores of each with very good qualifications. The ethnoproject-based teaching modules produced in this study are practical for facilitating the learning process on housekeeping and public area materials. This is evidenced by the average teacher and student practicality score, each with very good qualifications. The ethnoproject-based teaching module is quite effective in increasing students' creativity..

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6. REFERENCES

- Akib, E., Imran, M. E., Mahtari, S., & Mahmud, M. R. (2020). *Study on Implementation of Integrated Curriculum in Indonesia*. 1(1), 39–57.
- Almulla, M. A. (2020). The Effectiveness of the Project-Based Learning (PBL) Approach as a Way to Engage Students in Learning. *SAGE Open*, 10(3). <https://doi.org/10.1177/2158244020938702>.
- Almulla, M. A. (2023). Constructivism learning theory: A paradigm for students' critical thinking, creativity, and problem solving to affect academic performance in higher education. *Cogent Education*, 10(1). <https://doi.org/10.1080/2331186X.2023.2172929>.
- Barak, M., & Yuan, S. (2021). A cultural perspective to project-based learning and the cultivation of innovative thinking. *Thinking Skills and Creativity*, 39(September 2020), 100766. <https://doi.org/10.1016/j.tsc.2020.100766>.
- Biazus, M. de O., & Mahtari, S. (2022). The Impact of Project-Based Learning (PjBL) Model on Secondary Students' Creative Thinking Skills. *International Journal of Essential Competencies in Education*, 1(1), 38–48. <https://doi.org/10.36312/ijece.v1i1.752>.
- Cahyani, N. K. C. (2021). Effectiveness of Project-Based Learning Models in Improving Students' Creativity (A Literature Review). *The Art of Teaching English as a Foreign Language*, 2(1), 73–77. <https://doi.org/10.36663/tatefl.v2i1.107>.
- Calavia, M. B., Blanco, T., & Casas, R. (2021). Fostering creativity as a problem-solving competence through design: Think-Create-Learn, a tool for teachers. *Thinking Skills and Creativity*, 39, 1–30. <https://doi.org/10.1016/j.tsc.2020.100761>.
- Capinera, John L. (2021). Fostering Intercultural Learning Through Project-Based Learning In Vietnamese Tertiary Efl Classes. *Block Caving – A Viable Alternative?*, 21(1), 1–9. <https://doi.org/10.1016/j.solener.2019.02.027%0A>.
- Chabibie, M. H. (2022). *Panduan Penerapan Model Pembelajaran Inovatif dalam BDR yang Memanfaatkan Rumah Belajar*. Kemendikbud.
- Csikszentmihalyi, M., & Daga, A. T. (2021). Creativity: Flow and Psychology. *Namta Journal*, 22(2), 60–97.

- Dewi, M. R. (2022). Kelebihan dan Kekurangan Project-based Learning untuk Penguatan Profil Pelajar Pancasila Kurikulum Merdeka. *Inovasi Kurikulum*, 19(2), 213–226.
- Diarini, I., & Winangun, I. M. A. (2022). *Analisis Kebutuhan Pengembangan Project Based Teaching Module untuk Meningkatkan Kreativitas Siswa SMK Pariwisata Dwi Tunggal*.
- Fadli, A., & Irwanto. (2020). The effect of local wisdom-based ELSII learning model on the problem solving and communication skills of pre-service islamic teachers. *International Journal of Instruction*, 13(1), 731–746. <https://doi.org/10.29333/iji.2020.13147a>.
- Fitri, W., Mahdum, M., & Indrawati, H. (2023). Development of Social Science Teaching Modules in the Implementation of the Independent Curriculum at the Junior High School Level in Pekanbaru. *AL-ISHLAH: Jurnal Pendidikan*, 15(4), 6289–6304. <https://doi.org/10.35445/alishlah.v15i4.3576>.
- Ginting, D. V. B. (2022). *Etnobotani Tumbuhan Yang Digunakan Pada Upacara Pernikahan Etnis Karo Di Kecamatan Biru-Biru*. Universitas Medan Area.
- Hasibuan, M. P., Sari, R. P., Syahputra, R. A., & Nahadi, N. (2022). Application of Integrated Project-based and STEM-based E-learning Tools to Improve Students' Creative Thinking and Self-Regulation Skills. *Jurnal Penelitian Pendidikan IPA*, 8(1), 51–56. <https://doi.org/10.29303/jppipa.v8i1.1050>.
- Hawari, A. D. M., & Noor, A. I. M. (2020). Project Based Learning Pedagogical Design in STEAM Art Education. *Asian Journal of University Education*, 16(3), 102–111. <https://doi.org/10.24191/ajue.v16i3.11072>.
- Huda Shofyana, M., Giri Aditama, M., Iqbal Nugroho, H., & Tri Asmoro, H. (2022). Integrating Local Wisdom in Project-Based Learning to Improve Post-Pandemic English Learning. *ENGLISH FRANCA : Academic Journal of English Language and Education*, 6(2), 291. <https://doi.org/10.29240/ef.v6i2.5418>.
- Hujjatusnaini, N., Corebima, A. D., Prawiro, S. R., & Gofur, A. (2022). the Effect of Blended Project-Based Learning Integrated With 21St-Century Skills on Pre-Service Biology Teachers' Higher-Order Thinking Skills. *Jurnal Pendidikan IPA Indonesia*, 11(1), 104–118. <https://doi.org/10.15294/jpii.v11i1.27148>.
- Irhasyurna, Y., Kusasi, M., Fahmi, F., Fajeriadi, H., Aulia, W. R., Nikmah, S., & Rahili, Z. (2022). Integrated science teaching materials with local wisdom insights to improve students' critical thinking ability. *BIO-INOVED : Jurnal Biologi-Inovasi Pendidikan*, 4(3), 328. <https://doi.org/10.20527/bino.v4i3.14148>.
- Kasmini, L., Mardhatillah, Munandar, H., & Mukhroji. (2023). the Development of E-Lkpd (Student Worksheet) in Science Learning in Grade V At Siem Primary School. *Visipena*, 13(2), 114–129. <https://doi.org/10.46244/visipena.v13i2.2173>.
- Khaeruddin, K., Indarwati, S., Sukmawati, S., Hasriana, H., & Afifah, F. (2023). An Analysis of Students' Higher Order Thinking Skills Through the Project-Based Learning Model on Science Subject. *Jurnal Pendidikan Fisika Indonesia*, 19(1), 47–54. <https://doi.org/10.15294/jpfi.v19i1.34259>.
- Kurniawan, D., & Fatmawati, I. (2019). Persepsi Masyarakat Madura Terhadap Peran Tumbuhan Etnofarmaka di Kabupaten Sumenep. *Jurnal Pertanian Cemara*, 16(2), 1–7. <https://doi.org/10.24929/fp.v16i2.809>.
- Kusumah, W., & Alawiyah, T. (2021). *Guru Penggerak: Mendorong Gerak Maju Pendidikan Nasional*.
- Kwangmuang, P., Jarutkamolpong, S., Sangboonraung, W., & Daungtod, S. (2021). The development of learning innovation to enhance higher order thinking skills for students in Thailand junior high schools. *Heliyon*, 7(6), e07309. <https://doi.org/10.1016/j.heliyon.2021.e07309>.

- Malik, A., Yuliani, Y., Rochman, C., Zakwandi, R., Ismail, A., & Ubaidillah, M. (2020). Optimizing students critical thinking skills related to heat topics through the model of content, context, connection, researching, reasoning, reflecting (3C3R). *Journal of Physics: Conference Series*, 1521(2). <https://doi.org/10.1088/1742-6596/1521/2/022001>.
- Mansyur, A. R. (2021). Wawasan Kepemimpinan Guru (Teacher Leadership) dan Konsep Guru Penggerak. *Education and Learning Journal*, 2(2), 101. <https://doi.org/10.33096/eljour.v2i2.113>.
- Marjanah, M., Pandia, E., & Nursamsu, N. (2021). Development of Practicum Instruction Module Based on Project Based Learning (PjBL) Integrated with Science Process Skills and Scientific Literacy. *Jurnal Penelitian Pendidikan IPA*, 7(SpecialIssue), 104–111. <https://doi.org/10.29303/jppipa.v7ispecialissue.874>.
- Markula, A., & Aksela, M. (2022). The key characteristics of project-based learning: how teachers implement projects in K-12 science education. *Disciplinary and Interdisciplinary Science Education Research*, 4(1). <https://doi.org/10.1186/s43031-021-00042-x>.
- Maulinda, U. (2022). Pengembangan Modul Ajar Berbasis Kurikulum Merdeka. *Tarbawi*, 5(2), 130–138.
- Muzdalifah, A., Arafat, Y., & Selegi, S. F. (2023). Pengaruh Model Project Based Learning Berbasis Etnosains terhadap Hasil Belajar SBdP di SD Muhammadiyah Prabumulih. *Scientia: Jurnal Hasil Penelitian*, 8(1), 37–46.
- Nafiah, D., Sunarno, W., & Suharno, S. (2023). Interaction of Student's Creativity Thinking Skills Through Project Based Learning and Learning Cycle 7E in Parabolic Motion on the Second Grade Students of Senior High School. *Jurnal Penelitian Pendidikan IPA*, 9(2), 645–649. <https://doi.org/10.29303/jppipa.v9i2.2449>.
- Nor, H., Hizriani, N., & Kadariyah, N. L. (2022). Teachers' Materials Development, Lesson Planning, and Teaching Skills Readiness in Teaching English. *PANYONARA: Journal of English Education*, 4(1), 32–64. <https://doi.org/10.19105/panyonara.v4i1.5909>.
- Nurhikmayati, I., & Sunendar, A. (2020). Pengembangan Project Based Learning Berbasis Kearifan Lokal Berorientasi pada Kemampuan Berpikir Kreatif dan Kemandirian Belajar. *Mosharafa: Jurnal Pendidikan Matematika*, 9(1), 1–12. <https://doi.org/10.31980/mosharafa.v9i1.604>.
- Pernantah, P. S., Khadijah, K., Hardian, M., & Syafiq, A. (2022). Desain Pembelajaran Project Based Terintegrasi Kearifan Lokal Pada Mata Kuliah. In *Seminar Nasional Pendidikan, FKIP UNMA 2022* (pp. 191–203).
- Rahayu, R., & Indriyanti, D. R. (2023). *An Ethnosains Based Project Based Learning Model with Flipped Classroom on Creative Thinking Skills*. 9(8), 348–355. <https://doi.org/10.29303/jppipa.v9i8.3051>.
- Rahimah. (2022). *Peningkatan Kemampuan Guru SMP Negeri 10 Kota Tebingtinggi dalam*.
- Ramdani, A., Jufri, A. W., Gunawan, F., M., & Yustiqvar, M. (2021). Analysis of students' critical thinking skills in terms of gender using science teaching materials based on the 5e learning cycle integrated with local wisdom. *Jurnal Pendidikan IPA Indonesia*, 10(2), 187–199. <https://doi.org/10.15294/jpii.v10i2.29956>.
- Ramlah, S., & Arsyad, A. (2022). Pengembangan Bahan Ajar Sosiologi Terintegrasi Kearifan Lokal Masyarakat Timor sebagai Materi Penunjang Pembelajaran Sosiologi di SMA. *Innovative Education Journal*, 4(3), 166–174.
- Roesmawati, L., Suprijono, A., & Yani, M. T. (2022). Pengembangan Handout Pembelajaran Berbasis Kearifan Budaya Lokal Reog pada Pembelajaran IPS untuk Penguatan Pendidikan Karakter Siswa Sekolah Dasar. *Jurnal Basicedu*, 6(5), 8909–8922.

- Safitri, D. (2021). *Journal of Technology and Science Education Students' Perceptions Of The Project Based On The Potential Of Their Region: A Project-Based Learning*. 11(2), 295–314.
- Setiawan, I., Sudarmin, S., & Partaya, P. (2023). Development of Project Based Ethno-STEM Online Learning Module to Increase Interpersonal Literacy and Learning Out-come. *Journal of Innovative Science Education*, 12(2), 192–200. <https://doi.org/10.15294/jise.v12i2.72020>.
- Setiawan, R., Syahria, N., Andanty, F. D., & Nabhan, S. (2022). Pengembangan Modul Ajar Kurikulum Merdeka Mata Pelajaran Bahasa Inggris Smk Kota Surabaya. *Jurnal Gramaswara*, 2(2), 49–62. <https://doi.org/10.21776/ub.gramaswara.2022.002.02.05>.
- Siew, N. M., & Ambo, N. (2020). the Scientific Creativity of Fifth Graders in a Stem Project-Based Cooperative Learning Approach. *Problems of Education in the 21st Century*, 78(4), 627–643. <https://doi.org/10.33225/pec/20.78.627>.
- Sumardi, L., Rohman, A., & Wahyudiati, D. (2020). ImplementasikPembelajaranKTematikiswaoKelasiRendahodi MI Yadinu Banok Lombok Timur. *International Journal of Instruction*, 13(3), 158.
- Sumarni, W., & Kadarwati, S. (2020). Ethno-stem project-based learning: Its impact to critical and creative thinking skills. *Jurnal Pendidikan IPA Indonesia*, 9(1), 11–21. <https://doi.org/10.15294/jpii.v9i1.21754>.
- Sutrisno, S., & Nasucha, J. A. (2022). Islamic Religious Education Project-Based Learning Model to Improve Student Creativity. *At-Tadzkir: Islamic Education Journal*, 1(1), 13–22. <https://doi.org/10.59373/attadzkir.v1i1.3>.
- Syahlan, I. D., Hidayat, D. R., & Hidayat, O. S. (2023). Application of the Project Based Learning Model in Elementary Schools: Obstacles and Solutions of Science and Environment Content. *Jurnal Penelitian Pendidikan IPA*, 9(4), 2060–2067. <https://doi.org/10.29303/jppipa.v9i4.3285>.
- Ülger, B. B., & Çepni, S. (2020). Evaluating the Effect of Differentiated Inquiry-Based Science Lesson Modules on Gifted Students' Scientific Process Skills. *Pegem Egitim ve Ogretim Dergisi*, 10(4), 1289–1324. <https://doi.org/10.14527/pegegog.2020.039>.
- Umar Seno, Sabar Narimo, Djalal Fuadi, Minsih, & Choiriyah Widyasari. (2022). Implementation of Local Wisdom Based Learning in Realizing Pancasila Student Profiles in Elementary Schools. *Jurnal Ilmiah Sekolah Dasar*, 6(4), 652–660. <https://doi.org/10.23887/jisd.v6i4.56041>.
- Wu, T. T., & Wu, Y. T. (2020). Applying project-based learning and SCAMPER teaching strategies in engineering education to explore the influence of creativity on cognition, personal motivation, and personality traits. *Thinking Skills and Creativity*, 35(May 2019), 100631. <https://doi.org/10.1016/j.tsc.2020.100631>.
- Yulkifli, Y., Yohandri, Y., & Azis, H. (2022). Development of physics e-module based on integrated project-based learning model with Ethno-STEM approach on smartphones for senior high school students. *Momentum: Physics Education Journal*, 6(1), 93–103. <https://doi.org/10.21067/mpej.v6i1.6316>.
- Yustina, S., W., & Vebrianto, R. (2020). The effects of blended learning and project-based learning on pre-service biology teachers' creative thinking skills through online learning in the COVID-19 pandemic. *Jurnal Pendidikan IPA Indonesia*, 9(3), 408–420. <https://doi.org/10.15294/jpii.v9i3.24706>.