

DAFTAR PUSTAKA

- ‘Azizah, A. N., & Wardani, N. S. (2019). Upaya peningkatan hasil belajar matematika melalui model Project Based Learning. *Jurnal Riset Teknologi Dan Inovasi Pendidikan*, 2(1), 194–204. <https://journal.rekarta.co.id/index.php/jartika/article/view/280>
- A. Muhajir Nasir. (2016). Statistik Pendidikan. *Media Akademi*. <https://doi.org/10.31227/osf.io/judwx>
- Abdullah, Z. (2022). Menggali Nilai-Nilai Moderatisme Islam dalam Ilmu Biologi. *Prosiding Konferensi Integrasi Interkoneksi Islam Dan Sain*, 4, 115–123. <https://ejournal.uin-suka.ac.id/saintek/kiiis/article/view/3186>
- Abdurohman, Nulhakim, L., & Fatawi, I. (2025). Pengaruh Pembelajaran Berbasis Proyek dengan Berbantuan Infografis terhadap Kreatifitas Siswa Kelas V SDN 1 Warunggunung Kabupaten Lebak. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(2). <https://doi.org/https://doi.org/10.23969/jp.v10i02.24111>
- Adeoye, M. A., & Jimoh, H. A. (2023). Problem-Solving Skills Among 21st-Century Learners Toward Creativity and Innovation Ideas. *Thinking Skills and Creativity Journal*, 6(1), 52–58. <https://doi.org/10.23887/tscj.v6i1.62708>
- Agus Susanta, Edi Susanto, R. (2020). Efektivitas Project Based Learning Terhadap Kemampuan Pemecahan Masalah Dan Berpikir Kritis Mahasiswa. *Jurnal THEOREMS (The Original Research of Mathematics)*, 5(1), 61. <https://doi.org/10.31949/th.v5i1.2219>
- Amalia, G. R., Kurniasih, S., & Jaenudin, D. (2022). Project-Based Learning on Biotechnology Materials to Enhance High School Students ' Creativity and Problem-Solving Skills. *JSEP (Journal of Science Education and Practice)*, 6(1), 51–64. <https://doi.org/https://doi.org/10.33751/jsep.v6i1.5704>
- Amelia, N., & Aisyah, N. (2021). Model Pembelajaran Bebasis Proyek (Project Based Learning) dan Penerapannya pada Anak Usia Dini di TKIT Al-Farabi. *BUHUTS AL-ATHFAL: Jurnal Pendidikan Dan Anak Usia Dini*, 1(2), 181–199. <https://doi.org/https://doi.org/10.24952/alathfal.v1i2.3912>
- Amri, A., & Muhajir, H. (2022). Keterampilan Berpikir Kreatif Peserta Didik Melalui Model Project Based Learning (Pjbl) Secara Daring. *Didaktika Biologi: Jurnal Penelitian Pendidikan Biologi*, 6(1), 21. <https://doi.org/10.32502/dikbio.v6i1.4380>
- Anggraeni, A. R., Anugrahana, A., & Yan Ariyanti, P. B. (2023). Penerapan Model Pembelajaran Project Based Learning terhadap Kreativitas Siswa dengan Menggunakan Bahan Alam pada Kelas 1 SD Negeri Plaosan 1. *Jurnal Pendidikan Tambusai*, 7(1), 3683–3690. <https://doi.org/10.31004/jptam.v7i1.5790>
- Aras, M. (2025). Evaluation of Project-Based Assessment in Improving Critical

- Thinking Skills of Middle School Students. *Jurnal of Pedagogi: Jurnal Pendidikan*, 2(3), 148–156. <https://doi.org/https://doi.org/10.62872/b3zt5c63>
- Arief, M. M. (2023). Intergrasi Materi IPA “Ekosistem Bagi Kehidupan Manusia” Dengan Ayat Al-qur’an. *Tarbiyah Darussalam: Jurnal Ilmiah Kependidikan Dan Keagamaan*, 7(01), 94. <https://doi.org/10.58791/tadrs.v7i01.287>
- Arifiana, E., Suratno, S., & Wahyuni, D. (2022). The Analysis of Communication Skills on Biology Learning Process with Creative Learning in Senior High School. *Eduvest - Journal of Universal Studies*, 2(3), 523–529. <https://doi.org/10.59188/eduvest.v2i3.387>
- Arlina, Hasibuan, R. M., Mulyani, N., Lesmana, B., & Harahap, R. N. (2023). Strategi Pembelajaran Discovery Learning Pada Mata Pelajaran Akidah Akhlak. *At-Tadris: Journal of Islamic Education*, 2(2), 226–239. <https://doi.org/10.56672/attadris.v2i2.87>
- Artika, W., Amalya, C. P., Safrida, S., Maulida, M., Afandi, A., & Ratna, L. (2023). Applying Environmental-STEM Approach on Pollution Issue Material to Enhance Students’ Problem-Solving Skills. *Jurnal Penelitian Pendidikan IPA*, 9(5), 4036–4042. <https://doi.org/10.29303/jppipa.v9i5.3846>
- Arum, D. S., Diri, E., Pembelajaran, S., Guru, K., & Tua, O. (2025). Strategi Pembelajaran dalam Penguatan Motivasi untuk Meningkatkan Prestasi Akademik Siswa. *Jurnal Pendidikan Generasi Nusantara (JPGenus)*, 3(1), 37–47. <https://doi.org/https://doi.org/10.61787/q7e2fg24>
- Astuti, A., Waluya, S. B., & Asikin, M. (2020). the Important of Creative Thinking Ability in Elementary School Students for 4.0 Era. *International Journal of Educational Management and Innovation*, 1(1), 91. <https://doi.org/10.12928/ijemi.v1i1.1512>
- Astuti, R., & Aziz, T. (2019). Integrasi Pengembangan Kreativitas Anak Usia Dini di TK Kanisius Sorowajan Yogyakarta. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 3(2), 294. <https://doi.org/10.31004/obsesi.v3i2.99>
- Audesirk, T., Audesirk, G., & Byers, B. E. (2016). *Biology Life on Earth With Physiology*. Pearson Education Limited.
- Azirah, N., Nasution, Y. N., & Huda, M. N. (2022). Analisis Pengaruh Kanibalisme pada Model Predator-Prey dengan Struktur Usia. *BASIS: Jurnal Ilmiah Matematika*, 1(1), 8–15.
- Azzahra, U., Arsih, F., & Heffi, A. (2023). Pengaruh Model Pembelajaran Problem Baseed Learning Terhadap Keterampilan Berpikir Kreatif Peserta Didik Pada Pembelajaran Biologi : Literature Review. *BIOCHEPHY: Journal of Science Education*, 3(1), 49–60. <http://journal.moripublishing.com/index.php/biochephy>
- Bariyyah, K. (2021). Problem solving skills: esssential skills challenges for the 21st century graduates. *Jurnal EDUCATIO: Jurnal Pendidikan Indonesia*, 7(1), 71.

<https://doi.org/10.29210/120212843>

- Basatha, R., Akhsani, R., Prayoga, S., Akbar, M. S., & Dwika, E. (2025). Systematic Literature Review on the Implementation of Game-Based Learning Management Systems through ClassDojo in Indonesian Education : A Focus on Parental Involvement and Teacher Readiness to Increase Student Learning Motivation . *E3S Web of Conferences*. <https://doi.org/https://doi.org/10.1051/e3sconf/202564506006>
- Bentayao, G. J. L. (2023). *Learning Management System Satisfaction and Problem-Solving Skills in Mathematics of Grade 11 Students*. 5(6), 1–24. <https://doi.org/10.36948/ijfmr.2023.v05i06.10297>
- Benzizoune, O. (2024). Enhancing Classroom Management and Student Engagement: The Role of ClassDojo and Gamification in Education. *Journal of English Language Teaching and Applied Linguistics*, 6(3), 106–114. <https://doi.org/10.32996/jeltal>
- Bereczki, E. O., & Andrea, K. (2021). Technology-enhanced creativity : A multiple case study of digital technology-integration expert teachers ' beliefs and practices. *Thinking Skills and Creativity Journal*, 39(November 2020). <https://doi.org/10.1016/j.tsc.2021.100791>
- Bergstrom, D. M., Wienecke, B. C., Hoff, J. Van Den, Hughes, L., Lindenmayer, D. B., Ainsworth, T. D., Baker, C. M., Bland, L., Bowman, D. M. J. S., Brooks, S. T., Canadell, J. G., Constable, A. J., Dafforn, K. A., Depledge, M. H., Dickson, C. R., Duke, N. C., Helmstedt, K. J., Holz, A., Johnson, C. R., ... Shaw, J. D. (2021). Combating ecosystem collapse from the tropics to the Antarctic. *Global Change Biology*, January, 1692–1703. <https://doi.org/10.1111/gcb.15539>
- Biazus, M. D. O., & Mahtari, S. (2022). *The Impact of Project-Based Learning (PjBL) Model on Secondary Students ' Creative Thinking Skills*. 1(1), 38–48.
- Bradley, V. M. (2021). Learning Management System (LMS) Use with Online Instruction. *Journal of Technology in Education (IJTE)*, 4(1), 68–92. <https://doi.org/https://doi.org/10.46328/ijte.36>
- Campbell, N. A., & Reece, J. B. (2010). *Biologi Edisi Kedelapan Jilid 3*. Erlangga.
- Chastenay, P., Beaudry, M., Heures, K. L., Giamellaro, M., Smith, J., Desjarlais, E., Paquette, A., Chastenay, P., Beaudry, M., Heures, K. L., Giamellaro, M., Smith, J., Desjarlais, E., & Paquette, A. (2023). Exploring the impacts of contextualised outdoor science education on learning : the case of primary school students learning about ecosystem relationships. *Journal of Biological Education*, 57(2), 277–294. <https://doi.org/10.1080/00219266.2021.1909634>
- Chen, P., & Chan, Y.-C. (2021). Enhancing Creative Problem Solving in Postgraduate Courses of Education Management Using Project-Based Learning. *International Journal of Higher Education*, 10(6), 11.

<https://doi.org/10.5430/ijhe.v10n6p11>

- Choudhar, S., Bi, N., Singh, P. N., & Talwar, P. (2022). Study on Problem Solving Skills and Its Importance. *World Journal of English Language*, 12(3), 47–54. <https://doi.org/10.5430/wjel.v12n3p47>
- Consuelo, M., Manzanares, S., & Marticorena, R. (2021). Improve teaching with modalities and collaborative groups in an LMS : an analysis of monitoring using visualisation techniques. In *Journal of Computing in Higher Education* (Vol. 33, Issue 3). Springer US. <https://doi.org/10.1007/s12528-021-09289-9>
- Diawati, C., Liliyasi, L., Setiabudi, A., & Buchari, B. (2017). Development and validation of creative thinking skills test in the project of laboratory apparatus modification. *Ideas for 21st Century Education*, 185–188. <https://doi.org/10.1201/9781315166575-37>
- Digiacomio, D. K., Greenhalgh, S., & Barriage, S. (2022). How Students and Principals Understand ClassDojo: Emerging Insights. *TechTrends*, 66, 172–184. <https://doi.org/10.1007/s11528-021-00640-6/Published>
- Dwijayani, N. M. (2019). Development of circle learning media to improve student learning outcomes. *Journal of Physics: Conference Series*, 1321(2). <https://doi.org/10.1088/1742-6596/1321/2/022099>
- Eddi Lion, Yetrie Ludang, & Herry Palangka Jaya. (2022). Edukasi Penerapan Pembelajaran Project Based Learning Untuk Meningkatkan Hasil Belajar Di Masa Pandemi Covid-19 Desa Telangkah. *J-ABDI: Jurnal Pengabdian Kepada Masyarakat*, 2(1), 3635–3642. <https://doi.org/10.53625/jabdi.v2i1.2257>
- Efgivia, M. G., Adora Rinanda, R. ., Suriyani, Hidayat, A., Maulana, I., & Budiarto, A. (2021). Analysis of Constructivism Learning Theory. *Proceedings of the 1st UMGESHIC International Seminar on Health, Social Science and Humanities (UMGESHIC-ISHSSH 2020)*, 585, 208–212. <https://doi.org/10.2991/assehr.k.211020.032>
- Eliawati, T., & Rafika, M. (2022). Integration of Character Education Into English Learning With the Use of Class Dojo Application At Nurul Azmi'S School. *Journal MELT (Medium for English Language Teaching)*, 6(2), 186. <https://doi.org/10.22303/melt.6.2.2021.186-203>
- Encyclopaedia Britannica, T. E. (2024). *Biogeochemical cycle | Definition & Facts*. <https://www.britannica.com/science/biogeochemical-cycle>
- Fakhrudin, A. M., Putri, L. O., Sudirman, P., Annisa, R. N., & As, R. (2022). Efektivitas LMS (Learning Management System) untuk mengelola pembelajaran jarak jauh pada satuan pendidikan. *Jurnal Pendidikan Tambusai*, 6(2), 10026–10033. <https://doi.org/https://doi.org/10.31004/jptam.v6i2.4010>
- Fathin, A., Nugraha, E., & Daud, F. (2025). The Influence of Various Types of Flipped

- Classroom Assisted by Learning Management System (LMS) on Creative Thinking Skills in Junior High School Students. *Jurnal Penelitian Pendidikan IPA*, 11(4), 821–828. <https://doi.org/10.29303/jppipa.v11i4.10991>
- Fatmawati, B., Ariandani, N., & Sasmita, M. (2021). Student's Creative Thinking Ability with The Lesson Study Design in Biology Content. *Jurnal Penelitian Pendidikan IPA*, 7(2), 287–292. <https://doi.org/10.29303/jppipa.v7i2.708>
- Garcia, M. P., Domingo, A. C., Lagansua, R. M., Mae, S., & Matalandang, T. (2025). Enhancing Grade 8 Students ' Understanding of Ecosystems through Technology-enhanced Active Learning. *Asian Journal of Education and Social Studies*, 51(8), 31–37. <https://doi.org/https://doi.org/10.9734/ajess/2025/v51i82219>
- Guilford, J. P. (1956). Fundamental statistics in psychology and education, 3rd ed. In *Fundamental statistics in psychology and education, 3rd ed.* McGraw-Hill.
- Guilford J.P. (1967). *The Nature of Human Intelligence*.
- Guo, P., Saab, N., Post, L. S., & Admiraal, W. (2020). A review of project-based learning in higher education : Student outcomes and measures. *International Journal of Educational Research*, 102(April), 101586. <https://doi.org/10.1016/j.ijer.2020.101586>
- Habibu, P., Hasiru, R., & Maruwae, A. (2025). Pengaruh Model Pembelajaran Project Based Learning dengan Pendekatan Respect Education terhadap Kemampuan Berpikir Kritis Siswa pada Mata Pelajaran Ekonomi. *Jurnal Pendidikan Dirgantara*, 2(3). <https://doi.org/Selanjutnya>, pada tahap pengajuan pertanyaan mendasar (essential question), peneliti memantik rasa ingin tahu siswa dengan menyampaikan permasalahan nyata
- Hagi, N. A., & Mawardi, M. (2021). Model Problem Based Learning untuk Meningkatkan Keterampilan Berpikir Kreatif Siswa Sekolah Dasar. *EDUKATIF : JURNAL ILMU PENDIDIKAN*, 3(2), 463–471. <https://doi.org/10.31004/edukatif.v3i2.325>
- Halimatusakdiyah, E., Dinda Riris Wulandari, & Ahmad Fachrizal. (2023). Pengolahan Limbah Botol Plastik Melalui Kreativitas Untuk Meningkatkan Kepedulian Dalam Menjaga Ekosistem. *Jurnal Bionatural*, 10(2), 01–05. <https://doi.org/10.61290/bio.v10i2.529>
- Halimatuzzahra, & Louise, I. S. Y. (2025). Implementation of Project-Based Learning in Improving Students' Problem Solving in Chemistry Learning: A Systematic Literature Review. *Jurnal Pendidikan MIPA*, 26(2), 810–822. <https://doi.org/10.23960/jpmipa.v26i2.pp810-822>
- Harefa, N. (2020). Learning Management System : Aplikasi E-Learning Untuk Pembelajaran Online dan Blended. In *Sustainability (Switzerland)* (Vol. 11, Issue 1). UKI PRESS. <http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng->

8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciu
rbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484
_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI

- Hindriyanto, R. A., Utaya, S., & Utomo, D. H. (2019). Pengaruh Model Project Based Learning terhadap Kemampuan Pemecahan Masalah Geografi. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 4(8), 1092. <https://doi.org/10.17977/jptpp.v4i8.12682>
- Hoefnagels, M. (2018). *Biology: Concepts and Investigations* (Vol. 16, Issue 1). McGraw-Hill Education.
- Hong Minh, N. T. (2022). Using ClassDojo to Enhance Online Interaction in English Learning at Lower Secondary Schools. *International Journal of Social Science And Human Research*, 05(11), 5067–5074. <https://doi.org/10.47191/ijsshr/v5-i11-34>
- Husain, I. H., Mardin, H., Usman, N. F., Lukum, M. R., Yusuf, S., Ibrahim, A. S., Pulumoduyo, S. N. A., Tauna, K., & Bau, F. (2024). *Ekosistem dan Daur Biogeokimia* (M. Latjompoh (ed.)). Tahta Media Group.
- Husin, M., Masdi, H., Simatupang, W., & Kunci, K. (2025). Pembelajaran Masalah Berbasis Proyek : Meningkatkan Keterampilan Pemecahan Masalah dalam Pendidikan Tinggi. *International Journal of Sociology of Education*, 14(1), 62–84. <https://doi.org/http://dx.doi.org/10.17583/rise.15125>
- Irwanto. (2021). Implementasi Model Pembelajaran Guided Discovery Berbasis Multimedia Interaktif Untuk Pemahaman Mata Kuliah Pembinaan Kompetensi Mengajar. *Journal of Innovation Research and Knowledge*, 1(4). <https://doi.org/https://doi.org/10.53625/jirk.v1i4.323>
- Jabar, S. A., Syafwan, M., & Aadrean. (2021). Pemodelan Jaring-Jaring Makanan Pemangsa Generalis Pada Dua Trofik. *Jurnal Matematika UNAND*, 10(3), 321. <https://doi.org/10.25077/jmu.10.3.321-328.2021>
- Jana, B., & Fahmawati, A. A. N. (2020). Model Discovery Learning Untuk Meningkatkan Kemampuan Pemecahan Masalah. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 9(1), 213–220. <https://doi.org/https://doi.org/10.24127/ajpm.v9i1.2157>
- Jayawardana, H. B. A., & Gita, R. (2020). Inovasi Pembelajaran Biologi di Era Revolusi Industri 4.0. *Prosiding Seminar Nasional Biologi Di Era Pandemi COVID-19* Gowa, 6(September), 58–66. <https://doi.org/https://doi.org/10.24252/psb.v6i1.15544>
- Jiang, C., & Pang, Y. (2023). Enhancing design thinking in engineering students with project-based learning. *Computer Applications in Engineering Education*, 31, 814–830. <https://doi.org/https://doi.org/10.1002/cae.22608>
- Johnson, D. W., & Johnson, R. T. (1987). Learning together and alone: Cooperative, competitive, and individualistic learning, 2nd ed. In *Learning together and*

alone: Cooperative, competitive, and individualistic learning, 2nd ed. Prentice-Hall, Inc.

- Juliangkary, E., Suparta, I. N., Ardana, I. M., & Mahayukti, G. A. (2024). Development of Learning Models to Enhance Students ' Creative Thinking : A Systematic Literature Review. *PPSDP International Journal of Education*, 3, 488–503. <https://doi.org/https://doi.org/10.59175/pijed.v3i2.333>
- Jumaidin, Sabrina, Muhammad, & Harjoko, S. (2025). Strengthening Students' Problem-Solving Skills Through Project Based Learning Models Based on Environmental Issues in the Era of Sustainable Education. *Jurnal Pendidikan IPS*, 15(2), 427–438. <https://doi.org/https://doi.org/10.37630/jpi.v15i2.3018>
- Junaedi, I. (2019). Proses Pembelajaran Yang Efektif. *Jisamar*, VOL. 3 NO.(2), 19–25. <https://journal.stmikjayakarta.ac.id/index.php/jisamar/article/view/86>
- Kusadi, N. M. R., Sriartha, I. P., & Kertih, I. W. (2020). Model Pembelajaran Project Based Learning Terhadap Keterampilan Sosial Dan Berpikir Kreatif. *Thinking Skills and Creativity Journal*, 3(1), 18–27. <https://doi.org/10.23887/tscj.v3i1.24661>
- Kusuma, J. W., Hamidah, Mahuda, I., Sukandar, R. S., Santoso, E., & Jatisunda, M. G. (2021). Project-based learning with LMS moodle to promote mathematical problem solving and self- regulated learning. *Journal of Physics: Conference Series*, 1764. <https://doi.org/10.1088/1742-6596/1764/1/012135>
- Kusumaningtyas, N., Sikumbang, D., & Hasnunidah, N. (2020). Pengaruh Model Project Based Learning (PjBL) Terhadap Kemampuan Berpikir Kreatif Peserta Didik. *Jurnal Bioterdidik*, 8(2), 11–19. <https://doi.org/10.23960/jbt.v8.i2.02>
- Lavli, R. O. E. H., & Efendi, N. (2024). The Effect of Project Based Learning Model on Creative Thinking Ability. *Jurnal Ilmu Pendidikan (JIP) STKIP Kusuma Negara*, 15(2), 115–126. <https://doi.org/https://doi.org/10.37640/jip.v15i2.1804>
- Lavorel, S. (2025). Ecosystem transformation by climate change and its consequences for humans. *Comptes Rendus. Géoscience — Sciences de La Planète*, 357, 489–501. <https://doi.org/10.5802/crgeos.303>
- Lay, Y. O., Wulandari, I., & Andayani, S. (2025). A Systematic Literature Review : The Role of Digital Technology in Improving Conceptual Understanding and Problem-Solving Skills. *Mathema Journal*, 7(2), 591–616. <https://doi.org/https://api.semanticscholar.org/CorpusID:280532094>
- Lutfi, A. F. (2022). Penerapan Model Project Based Learning Menggunakan Class Dojo Untuk Meningkatkan Hasil Belajar Siswa Kelas XII Multimedia Pada Mata Pelajaran Desain Media Interaktif di SMK Negeri 1 Japara. *Bitnet: Jurnal Pendidikan Teknologi Informasi*, 7(2), 1–9. <https://doi.org/10.33084/bitnet.v7i1.3070>

- Ma'ruf, S. M., Sari, I. P., & Afrilianto, M. (2025). Application of Discovery Learning Model to Improve Students' Mathematical Problem Solving Ability on Islamic Junior High School. *Journal of Innovative Mathematics Learning*, 8(1), 73–81. <https://doi.org/https://dx.doi.org/10.22460/jiml.v8i1.p23976>
- Mahanal, S., Zubaidah, S., Setiawan, D., Maghfiroh, H., & Muhaimin, F. G. (2022). Empowering College Students' Problem-Solving Skills through RICOSRE. *Education Sciences*, 12(3). <https://doi.org/10.3390/educsci12030196>
- Mahmudah, S., Maknun, D., & Ubaidillah, M. (2022). Application of Practice with Scientife Shortening to Improve Students' Problem Solving Skills on Human Digestion Material in Class XI Mipa SMAN I Susukan Cirebon. *OPSearch: American Journal of Open Research*, 1(1), 8–16. <https://doi.org/10.58811/opsearch.v1i1.2>
- Maknun, D. (2017). *Ekologi: Populasi, Komunitas, Ekosistem Mewujudkan Kampus Hijau, Asri, Islami dan ilmiah* (A. Zaeni (ed.)). Nurjati Press.
- Manalu, M., Simanjuntak, M. P., Sembiring, J. S. P., Nababan, R. L., & Aditia, Y. H. (2025). Pengaruh Model Project Based Learning dengan Pendekatan STEAM Berbantuan Scaffolding terhadap Kemampuan Berpikir Kreatif Siswa. *Jurnal Luminous: Riset Ilmiah Pendidikan Fisika*, 6(2). <https://doi.org/https://doi.org/10.31851/luminous.v6i2.19062>
- Martínez, V. J. S., Martínez, J. T., Morales, S. B., & Valero, A. F. (2023). Boosting Student ' s Motivation through Gamification in Physical Education. *Behavioral Sciences*, 13. <https://doi.org/https://doi.org/10.3390/bs13020165>
- Maulana, M. A. (2021). Efektivitas Pembelajaran Daring Terhadap Hasil Belajar Biologi Pada Konsep Biodiversitas Di Kelas X Ipa Ma Muhammadiyah Salaka Kabupaten Takalar. *Jurnal Riset Dan Inovasi Pembelajaran*, 1(1), 85–95. <https://doi.org/10.51574/jrip.v1i1.22>
- Mirdad, J. (2020). Model-Model Pembelajaran (Empat Rumpun Model Pembelajaran). *Indonesia Jurnal Sakinah*, 2(1), 14–23. <https://doi.org/https://doi.org/10.2564/js.v2i1.17>
- Mora, A. B. (2020). Gamification for classroom management: An implementation using classdojo. *Sustainability (Switzerland)*, 12(22), 1–16. <https://doi.org/10.3390/su12229371>
- Muchson, M. (2023). Application of the Project Based Learning Model to Improve 21 st Century Competence 4C. *International Journal of Research and Review*, 10(January), 654–665. <https://doi.org/https://doi.org/10.52403/ijrr.20230173>
- Mufarrohah, M., & Setyawan, A. (2024). Pengaruh Model Problem Based Learning Terhadap Keterampilan Berpikir Kreatif Siswa Kelas V SD. *Journal of Education for All*, 2(2), 80–87. <https://doi.org/10.61692/edufa.v2i2.111>
- Murisqa, L., Muhibbudin, Safrida, Nurmaliah, C., & Abdullah. (2024). The Impact of Project Based Learning with Aquascapes on Metacognitive Skills and

- Learning Outcomes in Ecosystem Lesson. *Jurnal Penelitian Pendidikan IPA*, 10(12), 11070–11076. <https://doi.org/10.29303/jppipa.v10i12.8386>
- Muslim, A. A., & Rasim. (2024). Effectiveness of the Project Based Learning Model on Web Programming Material in Enhancing Students ' Creative Thinking Skills. *Jurnal PPS-TP: Jurnal Pendidikan Analisis, Aplikasi Teori Dan Hasil Penelitian*, 12(1). <https://doi.org/10.23960/jt.1214>
- Muzria, W., & Indrawati, T. (2020). Pengaruh Model Project Based Learning terhadap Hasil Belajar Siswa pada Pembelajaran Tematik Terpadu Sekolah Dasar. *Jurnal Pendidikan Tambusai*, 4(3), 2232–2238. <https://jptam.org/index.php/jptam/article/view/701>
- Nasihudin, N., & Hariyadin, H. (2021). Pengembangan Keterampilan dalam Pembelajaran. *Jurnal Pendidikan Indonesia*, 2(04), 733–743. <https://doi.org/10.59141/japendi.v2i04.150>
- Nasution, A. G. J., & HSB, A. A. (2022). Pengaruh Model Discovery Learning terhadap Kemampuan Pemecahan Masalah Matematika Peserta Didik Kelas IV MIS Istiqomah Islamic Fullday School Kec. Sunggal Kab. Deli Serdang. *Jurnal Nizhamiyah*, 12(1), 65–87. <https://doi.org/http://dx.doi.org/10.30821/niz.v12i1.1665>
- Natty, R. A., Kristin, F., & Anugraheni, I. (2019). Peningkatkan Kreativitas Dan Hasil Belajar Siswa Melalui Model Pembelajaran Project Based Learning Di Sekolah Dasar. *Jurnal Basicedu*, 3(4), 1082–1092. <https://doi.org/10.31004/basicedu.v3i4.262>
- Nugroho, R. P., Soepriyanto, Y., & Wedi, A. (2024). Development of Learning Management System with Gamification Approach for Project-Based Learning. *Jurnal Teknologi Pendidikan*, 26(December), 794–806. <https://doi.org/http://dx.doi.org/10.21009/JTP2001.6>
- Nurazizah, Z., Mubarak, A. S., Herawan, E., & Putri, D. P. (2025). Deep Learning with Project-Based Learning (PjBL) Model for Student Creativity. *Pedagogia: Jurnal Pendidikan*, 14(2). <https://doi.org/10.21070/pedagogia.v14i2.1957>
- Nurhamidah, S., & Nurachadijat, K. (2023). Project Based Learning dalam Meningkatkan Kemandirian Belajar Siswa. *Jurnal Inovasi, Evaluasi Dan Pengembangan Pembelajaran (JIEPP)*, 3(2), 42–50. <https://doi.org/10.54371/jiepp.v3i2.272>
- Nurhidayah, I. J., Wibowo, F. C., & Astra, I. M. (2021). Project Based Learning (PjBL) learning model in science learning: Literature review. *Journal of Physics: Conference Series*, 2019(1). <https://doi.org/10.1088/1742-6596/2019/1/012043>
- Nursahaadah, U., Mardiana, D., & Ahmatika, D. (2024). Pengaruh Penggunaan Model Project-Based Learning Terhadap Kemampuan Pemecahan Masalah Peserta

- Didik. *UJMES (Uninus Journal of Mathematics Education and Science)*, 09(01), 19–25. <https://doi.org/https://doi.org/10.30999/ujmes.v9i1.2631>
- Oktaviani, S., & Safitri, S. (2024). Effectiveness of Project-Based Learning on Improving Creative Thinking Skills Efektivitas Penerapan Project-Based Learning Terhadap Peningkatan Keterampilan Berpikir Kreatif Pendahuluan Pendidikan di Indonesia saat ini tengah menghadapi tantangan serius d. *Edukasi: The Journal of Educational Research*, 04(03). <https://doi.org/https://doi.org/10.57032/edukasi.v4i3.215>
- Organisation for Economic Co-operation and Development. (2024). New PISA results on Creative Thinking: can students think outside the box? In *Oecd* (Issue 125). <https://doi.org/https://doi.org/10.1787/b3a46696-en>
- Padilah, M. A. Y., Gloria, R. Y., & Muspiroh, N. (2025). Peningkatan Kemampuan Berpikir Kreatif Melalui Model Pembelajaran Project Based Learning Berbantuan E-Gallery. *Jurnal Penelitian Sains Dan Pendidikan*, 5(1), 1–15. <https://doi.org/https://doi.org/10.23971/jpsp.v5i1.8876>
- Pahdi, R., Mailizar, & Abidin, Z. (2020). Indonesian junior high school students' higher order thinking skills in solving mathematics problems. *Journal of Physics: Conference Series*, 1460(1). <https://doi.org/10.1088/1742-6596/1460/1/012031>
- Pratista, G. Y. (2023). *Students' Perceptions of Using ClassDojo in a Teaching and Learning Process Students' Perceptions of Using ClassDojo in a Teaching and Learning Process*. 8(1), 77–90. <https://doi.org/https://doi.org/10.29407/jetar.v8i1.19257>
- Primaningtyas, M. I., Sudjito, D. N., & Kristiyanto, W. H. (2021). Perbandingan Penggunaan Media OneNote dan Power Point dalam Pembelajaran Fisika yang Bersifat Matematis. *Jurnal Penelitian Pembelajaran Fisika*, 12(2), 203–207. <https://doi.org/10.26877/jp2f.v12i2.9373>
- Purwaningsih, E., Sari, S. P., Sari, A. M., & Suryadi, A. (2020). The Effect of STEM-PJBL and Discovery Learning on Improving Students' Problem-Solving Skills of The Impulse and Momentum Topic. *Jurnal Pendidikan IPA Indonesia*, 9(4), 465–476. <https://doi.org/10.15294/jpii.v9i4.26432>
- Putra, A. P., & Nurhasanah, A. (2025). Penerapan Model Pembelajaran Project Based Learning untuk Meningkatkan Keterampilan Berpikir Kreatip Siswa Kelas IV Sekolah Dasar Negeri 069 / VI Talang Tembago. *Sinar Dunia : Jurnal Riset Sosial Humaniora Dan Ilmu Pendidikan*, 4. <https://doi.org/https://doi.org/10.58192/sidu.v4i1.3147>
- Putri, R. F., Putri, R. F., & Asyah, N. (2022). Classdojo Solusi Pembelajaran Jarak Jauh. *Jurnal Amaliah*, 6(2), 342–347. <https://doi.org/https://doi.org/10.32696/ajpkm.v6i2.1681>
- Putri, Y. A., & Zulyusri. (2022). Meta-Analisis Pengaruh Model Project Based

- Learning Terhadap Kemampuan Berpikir Kreatif Siswa pada Pembelajaran Biologi. *Bioeduca: Journal of Biology Education*, 4(2), 1–11. <http://journal.walisongo.ac.id/index.php/bioeduca>
- Putri, Y. S., & Alberida, H. (2022). Keterampilan Berpikir Kreatif Peserta Didik Kelas X Tahun Ajaran 2021/2022 di SMAN 1 Pariaman. *BIODIK*, 8(2), 112–117. <https://doi.org/10.22437/bio.v8i2.17356>
- Qiara, S. (2024). Analisis Penerapan Model Pembelajaran Project Based Learning Terhadap Kemampuan Berpikir Kreatif Peserta Didik pada Mata Pelajaran Kimia. *INKUIRI: Jurnal Pendidikan IPA*, 13(1), 64. <https://doi.org/10.20961/inkuiri.v13i1.81628>
- Qotrunnada, N. A. (2022). Analysis of the Difficulties of High School Students in Improving Problem Solving Ability in Physics Learning. *International Journal of Current Educational Research*, 1(1), 84–101. <https://doi.org/10.53621/ijocer.v1i1.141>
- Rahardjanto, A., Husamah, & Fauzi, A. (2019). Hybrid-PjBL: Learning outcomes, creative thinking skills, and learning motivation of preservice teacher. *International Journal of Instruction*, 12(2), 179–192. <https://doi.org/10.29333/iji.2019.12212a>
- Rahma, I., Windyariani, S., & Suhendar, S. (2020). Profil Kemampuan Pemecahan Masalah Siswa SMA Pada Materi Ekosistem. *BIODIK*, 6(3), 281–289. <https://doi.org/10.22437/bio.v6i3.9551>
- Rahman, M. (2019). 21st Century Skill “Problem Solving”: Defining the Concept. *Asian Journal of Interdisciplinary Research*, 64–74. <https://doi.org/10.34256/ajir1917>
- Rahmayanti, L. (2023). Literature Review : Analisis Potensi Pengelolaan Kawasan Taman Nasional Gunung Merapi (Tngm) Berdasarkan Zona Untuk Pelestarian Ekosistem Daratan. *Jurnal Sains Edukatika Indonesia (JSEI)*, 4(1), 29–35. <https://jurnal.uns.ac.id/jsei/article/view/70932>
- Ramdani, A., & Artayasa, I. P. (2020). Keterampilan Berpikir Kreatif Mahasiswa dalam Pembelajaran IPA Menggunakan Model Inkuiri Terbuka. *Jurnal Pendidikan Sains Indonesia*, 8(1), 1–9. <https://doi.org/10.24815/jpsi.v8i1.15394>
- Rekha, A. P. (2024). *International Journal of Research Publication and Reviews The Learning Management System (LMS) And Student Learning Effectiveness : A Systematic Literature Review*. 5(6), 1857–1861. <https://doi.org/https://doi.org/10.55248/gengpi.5.0624.1460>
- Riak, S., & Hananto. (2023). Penerapan Model Pembelajaran Project-Based Learning Dalam Meningkatkan Keterampilan Kolaborasi, Kemampuan Regulasi Diri, Dan Keterampilan Berpikir Kreatif Pada Pembelajaran Biologi Topik Pembelahan Sel Pada Siswa Sma Kelas Xii Ipa. *Academy of Education*

- Journal*, 14(2), 890–905. <https://doi.org/10.47200/aoej.v14i2.1942>
- Richard. (2015). Global Creativity Indeks. *Toronto: Martin Prosperity Institute*, 47.
- Rivera, C. J. (2019). Using ClassDojo as a Mechanism to Engage and Foster Collaboration in University Classrooms. *College Teaching*, 67(3), 154–159. <https://doi.org/10.1080/87567555.2018.1505710>
- Rizkasari, E., Rahman, I. H., Aji, P. T., Slamet, U., Surakarta, R., & Purwokerto, U. M. (2022). Penerapan Model Pembelajaran Project Based Learning untuk Meningkatkan Hasil Belajar dan Kreativitas Peserta Didik. *Jurnal Pendidikan Tambusai*, 6(20), 14514–14520. <https://doi.org/https://doi.org/10.31004/jptam.v6i2.4726>
- Rosnaeni, R. (2021). Karakteristik dan Asesmen Pembelajaran Abad 21. *Jurnal Basicedu*, 5(5), 4341–4350. <https://doi.org/10.31004/basicedu.v5i5.1548>
- Sadikin, A., & Hakim, N. (2019). Pengembangan Media E-Learning Interaktif Dalam Menyongsong Revolusi Industri 4.0 Pada Materi Ekosistem Untuk Siswa SMA. *BIODIK*, 5(2), 131–138. <https://doi.org/10.22437/bio.v5i2.7590>
- Salim, A., Herpratiwi, & Firdaus, R. (2024). Pemanfaatan Learning Management System Berbasis Platform Pembelajaran untuk Meningkatkan Kemampuan Matematis dan Self-Regulated Learning di Sekolah Dasar. *DIDAKTIKA*, 4(4), 415–425. <https://doi.org/https://doi.org/10.17509/didaktika.v4i4.76616>
- Salman, M., Obeidat, B. F., Abdel-hadi, S., & Qaruty, R. Al. (2023). The Safe Learning Environment in the United Arab Emirates Schools and Its Relationship to the Development of Creative Thinking Among Students. *Emerging Science Journal*, 7, 172–188. <https://doi.org/http://dx.doi.org/10.28991/ESJ-2023-SIED2-014>
- Sandika, B. (2021). *Buku Ajar Ekologi (Integrasi Islam Sains)* (A. Fikriyah (ed.)). Yayasan citra dharma cindekia.
- Sannigrahi, S., Zhang, Q., Pilla, F., Kumar, P., Basu, B., Keesstra, S., Roy, P. S., Wang, Y., Sutton, P. C., Chakraborti, S., Kumar, S., & Sen, S. (2020). Science of the Total Environment Responses of ecosystem services to natural and anthropogenic forcings : A spatial regression based assessment in the world ' s largest mangrove ecosystem. *Science of the Total Environment*, 715, 137004. <https://doi.org/10.1016/j.scitotenv.2020.137004>
- Sari, W. P., & Montessori, M. (2021). Meningkatkan Keterampilan Berpikir Kreatif Siswa Sekolah Dasar Menggunakan Modul Pembelajaran Tematik. *Jurnal Basicedu*, 5(6), 5275–5279. <https://doi.org/10.31004/basicedu.v5i6.1527>
- Satriawan, H., Muttaqiem, H., & Najmuddin, N. (2019). Pembuatan Pupuk Kompos Di Dayah Sirajul Huda Al-Aziziyah Kabupaten Pidie Jaya, Aceh. *Lumbung Inovasi: Jurnal Pengabdian Kepada Masyarakat*, 4(1), 31. <https://doi.org/10.36312/linov.v4i1.441>

- Setiawan, L., Wardani, N. S., & Permana, T. I. (2021). Peningkatan Kreativitas Siswa Pada Pembelajaran Tematik Menggunakan Pendekatan Project Based Learning. *Jurnal Basicedu*, 5(4), 1879–1887. <https://doi.org/https://doi.org/10.31004/basicedu.v5i4.1068>
- Setiawan, W., & Herman, T. (2023). Implementasi Learning Management System Melalui Model Project Based Learning. *Jurnal Pendidikan Matematika Inovatif*, 6(3), 1177–1186. <https://doi.org/10.22460/jpmi.v6i3.16190>
- Shubina, I., & Kulakli, A. (2019). Pervasive Learning and Technology Usage for Creativity Development in Education Literature Review (Background of the Study). *International Journal of Emerging Technologies in Learning*, 14(1), 95–109. <https://doi.org/https://doi.org/10.3991/ijet.v14i01.9067>
- Solong, A., Nasir, M., & Ferawati, F. (2022). Pengaruh Model Pembelajaran Project Based Learning (PJBL) Terhadap Kemampuan Pemecahan Masalah Siswa SMPN 5 Kota Bima Tahun Pelajaran 2022/2023. *JUPENJI: Jurnal Pendidikan Jompa Indonesia*, 1(3), 12–17. <https://doi.org/10.57218/jupenji.vol1.iss3.242>
- Stoesz, B. M., Niknam, M., & Sutton, J. (2020). Defining the Visual Complexity of Learning Management Systems Using Image Metrics and Subjective Ratings. *Canadian Journal of Learning and Technology*, 46(2). <https://doi.org/https://doi.org/10.21432/cjlt27899>
- Suciawati, V., Sudianto, S., Jatisunda, M. G., & Rohaeti, T. (2022). Kemampuan Pemecahan Masalah dan Gaya Kognitif Siswa pada Model Pembelajaran Project Based Learning. *Polinomial: Jurnal Pendidikan Matematika*, 1(2), 80–89. <https://doi.org/10.56916/jp.v1i2.235>
- Sudianto, Dwijanto, & N.R., D. (2019). Students ' Creative Thinking Abilities and Self Regulated Learning on Project-Based Learning with LMS Moodle. *Unnes Journal of Mathematics Education Research*, 8(1), 10–17. <https://journal.unnes.ac.id/sju/index.php/ujmer/article/download/27183/11888/>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif Kualitatif dan R&D* (2nd ed.). Penerbit Alfabeta.
- Suharlan, L. S., Arsyad, M., & Palloan, P. (2023). The Influence of Problem Based Learning and Self Directed Learning Models on Students ' Problem Solving Abilities. *Jurnal Penelitian Pendidikan IPA*, 9(12), 11386–11393. <https://doi.org/10.29303/jppipa.v9i12.4730>
- Suhri, A. G. M. I., Hashifah, F. N., & Hasan, P. A. (2024). *Ekologi Hewan*. Eureka Media Aksara.
- Sukatiman, Saputro, I. N., & Budiarto, M. K. (2023). Digital Classroom Innovation: Leveraging Smartphone Based Application to Stimulate Students Creative Thinking. *ERIES Journal*, 17(4), 349–360.

<https://doi.org/http://dx.doi.org/10.7160/eriesj.2024.170408>

- Suradika, A., Dewi, H. I., & Nasution, M. I. (2023). Project-Based Learning and Problem-Based Learning Models in Critical and Creative Students. *Jurnal Pendidikan IPA Indonesia*, 12(1), 153–167. <https://doi.org/10.15294/jpii.v12i1.39713>
- Suryanti, T., & Utari, R. (2025). Integrasi Teknologi Digital dalam Pembelajaran Abad 21 : Tinjauan Literatur tentang Penerapan Learning Management System (LMS) di Sekolah Menengah. *MANDALA WIDYA : Jurnal Ilmu Pendidikan*, 1(1), 49–57. <https://doi.org/https://doi.org/10.71094/mandalawidya.v1i1.12>
- Suswanto, H., Soraya, D. U., Ramadiani, N. R., & Utomo, W. M. (2022). The Effectiveness Of Google Classroom and Dojo Class Using the Discovery Learning Model on The Learning Outcomes of Vocational School Students. *Letters in Information Technology Education (LITE)*, 5(2), 62. <https://doi.org/10.17977/um010v5i22022p62-66>
- Swari, F. N. I., Wirahayu, Y. A., Sahrina, A., & Selviana, N. (2022). Pengaruh model pembelajaran Project Based Learning (PjBL) berbantuan instagram terhadap kemampuan berpikir kreatif siswa pada mata pelajaran Geografi. *Jurnal Integrasi Dan Harmoni Inovatif Ilmu-Ilmu Sosial*, 2(11), 1132–1141. <https://doi.org/10.17977/um063v2i112022p1132-1141>
- Syamsurijal, M. M., & Naskah, H. (2023). *Edu Cendikia: Jurnal Ilmiah Kependidikan Penerapan Model Pembelajaran Discovery untuk Meningkatkan Hasil Belajar Mahasiswa*. April, 59–71. <https://doi.org/10.47709/educendikia.v3i1.2250>
- Tari, N. A. N., & Julaikah, D. I. (2023). Penerapan Model Pembelajaran Blended Learning “Class Dojo” untuk Mengetahui Hasil Belajar Keterampilan Membaca Bahasa Jerman Kelas XI IPA SMAN 12 Surabaya. *E-Journal Laterne*, 12(02). <https://ejournal.unesa.ac.id/index.php/laterne/article/view/55073%0Ahttps://ejournal.unesa.ac.id/index.php/laterne/article/view/55073/43649>
- Tawil, M., & Liliyasi. (2013). *Berpikir Kompleks dan Implementasinya dalam Pembelajaran IPA*. Badan Penerbit Universitas Negeri Makassar.
- The George Lucas Educational Foundation. (2005). *Instructional Module Project Based Learning*.
- Torrance, E. P. (1962). Assessing the creative thinking abilities. In *Guiding creative talent*. (pp. 16–43). Prentice-Hall, Inc. <https://doi.org/10.1037/13134-002>
- Toshtemirovich, R. Z. (2022). Creativity of Students in the Process of Higher Education Development. *Current Research Journal of Pedagogics*, 03(09), 52–56. <https://doi.org/10.37547/pedagogics-crjp-03-09-09>
- Triana, Y. (2021). Implementation of Problem-Based Learning Models to Improve

- The Critical Thinking Ability of 21st Century Generation Students. *Social, Humanities, and Educational Studies (SHES) : Conference Series*, 4, 252–256. <https://doi.org/https://doi.org/10.20961/shes.v4i6.68450>
- Universities, A. of A. C. and. (2003). *Value rubric*. Lifelong Learning.
- Upadhye, V., Madhe, S., & Joshi, A. (2022). Project Based Learning as an Active Learning Strategy in Engineering Education. *Journal of Engineering Education Transformations*, 36. <https://doi.org/https://doi.org/10.16920/jeet/2022/v36is1/22169>
- Utami, M. D., Hanafi, I., & Nurhidayat, D. (2019). Perbandingan Model Pembelajaran Project Based Learning Dengan Model Pembelajaran Discovery Learning Terhadap Hasil Belajar Siswa Pada Mata Pelajaran Sistem Komputer Kelas X Multimedia SMK Negeri 7 Jakarta Available at : Available at : *PINTER: Jurnal Pendidikan Teknik Informatika Dan Komputer*, 3(1), 27–31. <https://doi.org/https://doi.org/10.21009/pinter.3.1.5>
- Utami, N. C. M., Dewi, A. N. S., Puteri, A. A. P., & Dallion, E. (2023). Upaya Meningkatkan Kemampuan Problem Solving pada Mata Pelajaran IPA dengan Model Project Based Learning Siswa Kelas V. *Jurnal Sekolah*, 7(3), 466–478. <https://doi.org/https://doi.org/10.24114/js.v7i3.45800>
- van Eerde, W., Beeftink, F., & Rutte, C. G. (2025). Planning new ideas: Does time management tendency benefit daily creativity? *Psychology of Aesthetics, Creativity, and the Arts*, 19(1), 141–149. <https://doi.org/10.1037/aca0000517>
- van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2020). Determinants of 21st-Century Skills and 21st-Century Digital Skills for Workers: A Systematic Literature Review. In *SAGE Open* (Vol. 10, Issue 1). SAGE Publications Inc. <https://doi.org/10.1177/2158244019900176>
- Wanggi, S. L., Santoso, D., & Lestari, T. A. (2023). Pengaruh Model Pembelajaran Project Based Learning Terhadap Kemampuan Berpikir Kreatif Siswa Kelas IV Pada Mata Pelajaran IPA Di SDN Jarakan. *Jurnal Ilmiah Profesi Pendidikan*, 8, 1920–1926. <http://www.jipp.unram.ac.id/index.php/jipp/article/view/1660/966>
- Widodo, D., Kristianto, S., Susilawaty, A., Armus, R., Sari, M., Chaerul, M., Ahmad, S. N., Damanik, D., Sitorus, E., Marzuki, I., Mohamad, E., Junaedi, A. S., & Mastutie, F. (2021). *Ekologi dan Ilmu Lingkungan* (R. Watrianthos (ed.)). Yayasan Kita Menulis.
- Winarni, S., Kumalasari, A., Marlina, M., Junita, R., & Rohati, R. (2023). Pelatihan Penggunaan Class dojo di MTS Laboratorium Sebagai Alternatif Virtual Class di Masa Pandemi Covid-19. *Jurnal Pengabdian Masyarakat Pinang Masak*, 3(2), 43–56. <https://doi.org/10.22437/jpm.v3i2.20181>
- Winarni, S., Kumalasari, A., Marlina, M., Rohati, R., & Hikmawati, H. (2022). Efektifitas Classdojo Untuk Mendukung Keterampilan 4C Dalam

- Pembelajaran Matematika Secara Virtual. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 11(1), 201. <https://doi.org/10.24127/ajpm.v11i1.4411>
- Wulan, P., Sukweenadhi, J., Sulistyaningsih, E., Utami, M. R., Paulina, Putra, A. K., Chandra, R. H., Adami, A., Iswono, Nugraheni, D., Susilo, F., Gatra, F., Nasution, J., Prabowo, H. G., & Saepudin, M. (2023). *Ekologi dan Lingkungan* (P. Wulan, Asriati, & A. Eso (eds.)). Eureka Media Aksara.
- Wulandari, F. E., Febrianti, F., & Shofiyah, N. (2023). Creative Thinking Boost : Discovery Learning and STS Approach for Middle School. *Academia Open*, 8(1). <https://doi.org/https://doi.org/10.21070/acopen.8.2023.6453>
- Xiao, Y., & Hew, K. F. T. (2023). Intangible rewards versus tangible rewards in gamified online learning : Which promotes student intrinsic motivation , behavioural engagement , cognitive engagement and learning performance ? *British Journal of Educational Technology*, 297–317. <https://doi.org/10.1111/bjet.13361>
- Yustina Kristiati. (2023). Meningkatkan Kemampuan Bernalar Kritis Dan Prestasi Belajar Melalui Discovery Learning Berbantuan Video Materi Dialog Antarumat Beragama Fase F SMKN 2 Magelang. *Prosiding Seminar Nasional Pendidikan Dan Agama*, 4(2), 1352–1364. <https://doi.org/10.55606/semnaspa.v4i2.1372>
- Zahra, P., Gresinta, E., & Pratiwi, R. H. (2021). Pengaruh Kecerdasan Intrapersonal Terhadap Kemampuan Pemecahan Masalah pada Mata Pelajaran Biologi. *EduBiologia: Biological Science and Education Journal*, 1(1), 48. <https://doi.org/10.30998/edubiologia.v1i1.8087>
- Zulyusri, Elfira, I., Lufri, & Santosa, T. A. (2023). Literature Study: Utilization of the PjBL Model in Science Education to Improve Creativity and Critical Thinking Skills. *Jurnal Penelitian Pendidikan IPA*, 9(1), 133–143. <https://doi.org/10.29303/jppipa.v9i1.2555>