

DAFTAR PUSTAKA

- Afify, M. K. (2020). Effect of interactive video length within e-learning environments on cognitive load, cognitive achievement and retention of learning. *Turkish Online Journal of Distance Education*, 21(4), 68-89.
- Akbar, S., Pranajaya, S. A., Nurkadarwati, N., Hoesny, R., & Mutmainnah, I. (2024). Leadership Dynamics in The Era of Educational Transformation: Integrating The Concept of Adaptable Leadership in Sustainable Educational Administration. *International Journal of Teaching and Learning*, 2(1), 223-235.
- AKPAN, S. M., & Wisdom, D. J. (2024). WELL-DESIGNED CURRICULUM AND LEARNING SKILLS AS CORRELATE OF SCIENCE STUDENT PERFORMANCE IN TESTS AND EXAMINATIONS: CASE STUDY OF SECONDARY SCHOOL STUDENT IN AKWA IBOM STATE. *INFORMATION SCIENCE (GAJLIS)*, 3(1).
- Apriliani, Z., Hasanah, U., & Anas, A. S. (2019). Pembuatan Video Profil dengan Efek Vintage Kampung Wisata Adat Sengkoah sebagai Media Informasi. *JTIM: Jurnal Teknologi Informasi Dan Multimedia*, 1(1), 57-65.
- Arumingtyas, D. (2021). *Pemanfaatan Platform Digital dalam Pengembangan Pembelajaran Interaktif*. Yogyakarta: Deepublish.
- Awad, N. (2021). Integrating the learning of science, technology, engineering, and mathematics through a sound, waves and communication systems course: Exploring cognitive and affective aspects. *STEM in Science Education and S in STEM: From Pedagogy to Learning*, 150.
- Awad, N., & Barak, M. (2018). Pre-service science teachers learn a science, technology, engineering and mathematics (STEM)-oriented program: The case of sound, waves and communication systems. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(4), 1431-1451.

- Awang, H., & Ramly, I. (2008). Creative thinking skill approach through problem-based learning: Pedagogy and practice in the engineering classroom. *International Journal of Educational and Pedagogical Sciences*, 2(4), 334-339.
- Aykutlu, I., Bezen, S., & Bayrak, C. (2015). Teacher opinions about the conceptual challenges experienced in teaching physics curriculum topics. *Procedia-Social and Behavioral Sciences*, 174, 390-405.
- Avicena, Y., & Syofyan, R. (2023). Video Animasi Berbasis Powtoon pada Pembelajaran Ekonomi di Tingkat SMA. *PEKA*, 11(1), 1-8.
- Barth, V. L., Piwowar, V., Kumschick, I. R., Ophardt, D., & Thiel, F. (2019). The impact of direct instruction in a problem-based learning setting. Effects of a video-based training program to foster preservice teachers' professional vision of critical incidents in the classroom. *International Journal of Educational Research*, 95, 1-12.
- Bezen, S., & Bayrak, C. (2020). Teaching Mechanical Waves by Inquiry-Based Learning. *Journal of Baltic Science Education*, 19(6), 875-892.
- Campbell-Phillips, S. (2020). Education and curriculum reform: The impact they have on learning. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*, 3(2), 1074-1082.
- Cendon, E. (2018). Lifelong learning at universities: Future perspectives for teaching and learning. *Journal of New Approaches in Educational Research*, 7(2), 81-87.
- ChanLin, L. J. (2008). Autonomous learning in a PBL approach. *Library and Information Science Research E-Journal*.
- Chang, T. S., Wang, H. C., Haynes, A. M., Song, M. M., Lai, S. Y., & Hsieh, S. H. (2022). Enhancing student creativity through an interdisciplinary, project-oriented problem-based learning undergraduate curriculum. *Thinking Skills and Creativity*, 46, 101173.

- Dahlan, M. B. M., Halim, N. S. A., Kamarudin, N. S., & Ahmad, F. S. Z. (2023). Exploring interactive video learning: Techniques, applications, and pedagogical insights. *International Journal of Advanced and Applied Sciences*, 10(12), 220–230.
- Dani, R., Sembiring, M. Y. B., Siahaan, A. A., Tarigan, S., Ginting, E. M. P. H., Fatimah, G. R. N., & Suwanto, S. (2024). The Analysis of the Implementation of the Merdeka Curriculum Teaching Module Based on Problem-Based Learning in Physics Education at SMA Negeri 1 Kota Jambi. *TOFEDU: The Future of Education Journal*, 3(4), 905-911.
- Dewi, P. Y. A., & Primayana, K. H. (2019). Effect of learning module with setting contextual teaching and learning to increase the understanding of concepts. *International Journal of Education and Learning*, 1(1), 19-26.
- Dewi, V. P. C. (2023). PENINGKATAN PRESTASI BELAJAR SISWA PADA MATA PELAJARAN IPAS DENGAN MENERAPKAN MODEL PEMBELAJARAN PROBLEM BASED LEARNING DI SDN 1 NGINDENG KELAS IV TAHUN PELAJARAN 2022/2023. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 8(2), 2348-2370.
- Dita, P. P. S., Murtono, M., Utomo, S., & Sekar, D. A. (2021). Implementation of Problem Based Learning (PBL) on Interactive Learning Media. *Journal of Technology and Humanities*, 2(2), 24–30.
- Galili, I. (2019). Towards a refined depiction of nature of science: applications to physics education. *Science & Education*, 28(3), 503-537.
- Gligoreea, I., Cioca, M., Oancea, R., Gorski, A. T., Gorski, H., & Tudorache, P. (2023). Adaptive learning using artificial intelligence in e-learning: a literature review. *Education Sciences*, 13(12), 1216.
- Hannafin, M. J., & Land, S. M. (2000). Technology and student-centered learning in higher education: Issues and practices. *Journal of Computing in Higher Education*, 12, 3-30.

Harsanto. (2014). *Pengembangan Media Pembelajaran Interaktif*. Jakarta: PT Prenada Media.

Hussein, B. (2021). Addressing collaboration challenges in project-based learning: The student's perspective. *Education Sciences*, 11(8), 434.

Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2022). *Buku Guru Fisika SMA/MA Kelas XI Kurikulum Merdeka*. Jakarta: Kemendikbudristek.

Kurniawati, I., Raharjo, T. J., & Khumaedi, K. (2019). Peningkatan Kemampuan Pemecahan Masalah untuk Mempersiapkan Generasi Unggul Menghadapi Tantangan abad 21. In *Prosiding Seminar Nasional Pascasarjana*, 2(1), 701-707.

Langlois, T. R., Zheng, C., & James, D. L. (2016). Toward animating water with complex acoustic bubbles. *ACM Transactions on Graphics (TOG)*, 35(4), 1-13.

Liao, C. W., Chen, C. H., & Shih, S. J. (2019). The interactivity of video and collaboration for learning achievement, intrinsic motivation, cognitive load, and behavior patterns in a digital game-based learning environment. *Computers & Education*, 133, 43-55.

Marinda, F., Muhammad, N., & Saprudin, S. (2023). Pengembangan Konten E-Modul Interaktif Materi Getaran dan Gelombang Berbasis Problem Based Learning. *Jurnal Pendidikan Fisika*, 11(1), 94-107.

Mir, K., Iqbal, M. Z., & Shams, J. A. (2021). Investigation of students' satisfaction about H5P interactive video on Moodle for online learning. *International Journal of Distance Education and E-Learning*, 7(1), 71-82.

Miri, B., David, B. C., & Uri, Z. (2007). Purposely teaching for the promotion of higher-order thinking skills: A case of critical thinking. *Research in Science Education*, 37, 353-369.

- Muntu, S. R. (2017). Pengembangan media pembelajaran berbasis web pada mata pelajaran simulasi digital kelas x di SMK (Doctoral dissertation, Pascasarjana).
- Nugroho, S. (2012). Pembelajaran IPA dengan metode inkuiiri terbimbing menggunakan laboratorium riil dan virtuil ditinjau dari kemampuan memori dan gaya belajar siswa (Doctoral dissertation, UNS (Sebelas Maret University)).
- Rabiah, S. (2015). Penggunaan metode Research and Development dalam penelitian Bahasa Indonesia di perguruan tinggi.
- Rashid, T., & Asghar, H. M. (2016). Technology use, self-directed learning, student engagement and academic performance: Examining the interrelations. *Computers in Human Behavior*, 63, 604-612.
- Reeve, J. (2006). Teachers as facilitators: What autonomy-supportive teachers do and why their students benefit. *The Elementary School Journal*, 106(3), 225-236.
- Rijal, M. (2024). Pengembangan Buku Saku Elektronik Berbasis Google Sites pada Materi Gelombang Bunyi dan Cahaya Tingkat SMA/MA (Doctoral dissertation, UIN Ar-Raniry Banda Aceh).
- Septiana, F. (2023). IMPLEMENTASI PEMBELAJARAN SOSIAL EMOSIONAL BERBANTUAN APLIKASI TIKTOK DALAM MENINGKATKAN PARTISIPASI PESERTA DIDIK. *Jurnal MIPA dan Pembelajarannya (JMIPAP)*, 3(11), 5-5.
- Singha, R., & Singha, S. (2024). Application of Experiential, Inquiry-Based, Problem-Based, and Project-Based Learning in Sustainable Education. In *Teaching and Learning for a Sustainable Future: Innovative Strategies and Best Practices* (pp. 109-128). IGI Global.
- Stefanou, C. R., Perencevich, K. C., DiCintio, M., & Turner, J. C. (2004). Supporting autonomy in the classroom: Ways teachers encourage student

decision making and ownership. *Educational Psychologist*, 39(2), 97-110.

Saykili, A. (2019). Higher education in the digital age: The impact of digital connective technologies. *Journal of Educational Technology and Online Learning*, 2(1), 1-15.

Taimur, S., & Sattar, H. (2020). Education for sustainable development and critical thinking competency. *Quality Education*, 238-248.

Wahyudi, S. T. (2015). Aplikasi spectrum analyzer untuk menganalisa frekuensi sinyal audio menggunakan MATLAB (Doctoral dissertation, Riau University).

Wardani, D. A. W. (2023). Problem based learning: membuka peluang kolaborasi dan pengembangan skill siswa. *Jawa Dwipa*, 4(1), 1-17.

Wayudi, M., Suwatno, S., & Santoso, B. (2020). Kajian analisis keterampilan berpikir kritis siswa sekolah menengah atas. *Jurnal Pendidikan Manajemen Perkantoran*, 5(1), 67-82.

Wismanto, A., Ulumuddin, A., & Siroj, M. B. (2022). Pengembangan Media Pembelajaran E-Learning Berbasis Moodle pada Pembelajaran Menulis Berita. *Jurnal Pendidikan Bahasa dan Sastra Indonesia*, 11(1), 17-24.

Wittmann, M., Steinberg, R. N., & Redish, E. F. (2003). Understanding and affecting student reasoning about sound waves. *International Journal of Science Education*, 25(8), 991-1013.

Yani, Y. P., Hardeli, H., Oktavia, B., & Kurniawati, D. (2022). The development of an integrated e-module of scientific literacy and video demonstration using a problem-based learning model for high school students on acids and bases. *Jurnal Penelitian Pendidikan IPA*, 8(2), 452-462.

Zierock, B. (2024). Flipped classroom: The future is in their own hands. *SCIREA Journal of Education*, 9(3), 50-63.