

DAFTAR PUSTAKA

- Ainsworth, S. (2006). DeFT: A conceptual framework for considering learning with multiple representations. *Learning and Instruction*, 16(3), 183–198. <https://doi.org/10.1016/j.learninstruc.2006.03.001>
- Ainsworth, S. (2008). The Educational Value of Multiple-representations when Learning Complex Scientific Concepts. *Visualization: Theory and Practice in Science Education*, 191–208. https://doi.org/10.1007/978-1-4020-5267-5_9
- Alfitriyani, N., Pursitasari, I. D., & Kurniasih, S. (2021). Profile of Students' Critical and Creative Thinking Skills. *Proceedings of the 5th Asian Education Symposium 2020 (AES 2020)*, 566, 328–335. <https://doi.org/10.2991/assehr.k.210715.069>
- Almeida, L., Prieto, L., Ferrández, M., Oliveira, E., & Ferrández, C. (2008). Torrance Test of Creative Thinking: The question of its construct validity. *Thinking Skills and Creativity*, 3, 53–58. <https://doi.org/10.1016/J.TSC.2008.03.003>.
- Amalia, I., Arnidah, & Hakim, A. (2023). Pengembangan Media Video Pembelajaran pada Mata Pelajaran IPA Kelas V SD Center Malakji Kab. Gowa. *Didaktik: Jurnal Ilmiah PGSD FKIP Universitas Mandiri*, 09(03), 880–892.
- Andini, A. R. (2022). Validasi E-book Tipe Flipbook Materi Sistem Pencernaan Manusia Berbasis PBL Untuk Melatih Kemampuan Berpikir Kritis Siswa SMA. *Bioedu: Berkala Ilmiah Pendidikan Biologi*, 11(2), 330–340. <https://ejournal.unesa.ac.id/index.php/bioedu>
- Aprilia, C., Agraeni, E., & Nazarudin. (2023). Pengembangan Media Pembelajaran Berbasis Web (Glideapps) Untuk Meningkatkan Kemampuan Berpikir Kreatif Pada Materi Sistem Pencernaan Manusia Siswa Kelas VIII SMP Negeri 11 Kota Jambi. *Biodik:Jurnal Ilmiah Pendidikan Biologi*, 9(2), 171–179. <https://doi.org/10.22437/biodik.v9i2.22351>
- Arafah, A. A., Sukriadi, & Samsuddin, A. F. (2023). Implikasi Teori Belajar Konstruktivisme pada Pembelajaran Matematika. *Jurnal Pendidikan Mipa*, 13(2), 358–366. <https://doi.org/10.37630/jpm.v13i2.946>
- Arief S. Sadiman, dkk. 2006. *Media Pendidikan: Pengertian, Pengembangan, dan Pemanfaatannya*. Jakarta:Raja Grafindo Persada.
- Arsyad, S. N., Tangkin, W. P., Sumartono, & Astuti, B. (2024). Implications of Bruner's Cognitive Theory on Elementary School Education in The 21st Century. *Klasikal: Journal of Education, Language Teaching and Science*, 6(3), 697–704.
- Asmuki, & Al Aluf, W. (2018). Pendidikan Karakter Di Pesantren. *Edupedia: Jurnal Pendidikan Dan Pedagogi Islam*, 2(2), 1–10.

- Astuti, Y. W. (2013). Bahan Ajar Fisika SMA dengan Pendekatan Multi Representasi. *Jurnal Pendidikan Sains*, 1(4), 382–389.
- Baculu, E. P. H., Juffrie, M., & Helmyati, S. (2015). Faktor risiko gizi buruk pada balita di Kabupaten Donggala Provinsi Sulawesi Tengah. *Jurnal Gizi Dan Dietetik Indonesia*, 3(1), 51–59. [https://doi.org/10.21927/ijnd.2015.3\(1\).51-59](https://doi.org/10.21927/ijnd.2015.3(1).51-59)
- Bailin, S. (1987). Critical and Creative Thinking. *Informal Logic*, IX(1), 23–30.
- Batlolona, J. R., & Diantoro, M. (2023). Mental Models and Creative Thinking Skills in Students' Physics Learning. *Vilnius Tech: Vilnius Gediminas Technical University*, 16(2), 433–447. <https://doi.org/10.3846/cs.2023.14743>
- Bazira, P. (2023). Anatomy of the stomach. *Surgery (Oxford)*, 41(11), 698-702. <https://doi.org/10.1016/j.mpsur.2023.08.014>.
- Becker, N., Stanford, C., Towns, M., & Cole, R. (2015). Translating across macroscopic, submicroscopic, and symbolic levels: the role of instructor facilitation in an inquiry-oriented physical chemistry class. *Chemistry Education Research and Practice*, 16, 769-785. <https://doi.org/10.1039/C5RP00064E>.
- Ber, Y., García-López, S., Gargallo-Puyuelo, C., & Gomollón, F. (2021). Small and Large Intestine (II): Inflammatory Bowel Disease, Short Bowel Syndrome, and Malignant Tumors of the Digestive Tract. *Nutrients*, 13(7). <https://doi.org/10.3390/nu13072325>.
- Bevan, A. (2020). Tables and Charts. *The Dead of the Irish Revolution*. <https://doi.org/10.1515/9789048521289-015>.
- Budiyanti, N., Aziz, A. A., Suhartini, A., & Ahmad, N. (2021). Implementasi Program Pembinaan Karakter Santri Melalui Workshop dan Field Trip di Pesantren Modern. *Muróbبî: Jurnal Ilmu Pendidikan*, 5(1), 53–68. <https://doi.org/10.52431/murobbi.v5i1.353>
- Buitrago, M., & Chiappe, A. (2019). Representation of knowledge in digital educational environments: A systematic review of literature. *Australasian Journal of Educational Technology*, 35(4), 46–62. <https://doi.org/10.14742/ajet.4041>
- Burch, J., & Collins, B. (2021). Anatomy and physiology of the gastrointestinal tract. *Oxford Handbook of Gastrointestinal Nursing*. <https://doi.org/10.1093/MED/9780198833178.003.0001>.
- Cahyani, E. P. N., & Raharjo, R. P. (2024). Proses Pembelajaran Materi Kekayaan Budaya Indonesia di SDN Pakel Trenggalek dengan Menggunakan Media Gambar. *Jurnal Riset Madrasah Ibtidaiyah (JURMIA)*, 4(1), 96–106. <https://doi.org/10.32665/jurmia.v4i1.2961>
- Chittleborough, G. D., & Treagust, D. (2008). Correct interpretation of chemical diagrams requires transforming from one level of representation to

- another. *Research in Science Education*, 38(4), 463–482. <https://doi.org/10.1007/s11165-007-9059-4>
- Clauss, M., Fritz, J., & Hummel, J. (2023). Teeth and the gastrointestinal tract in mammals: When $1 + 1 = 3$. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 378, 1–10. <https://doi.org/10.1098/rstb.2022.0544>
- Coleman, R. (1987). Biochemistry of bile secretion.. *The Biochemical journal*, 244(2), 249-261 . <https://doi.org/10.1042/BJ2440249>.
- Dardjito, E., & Rahardjo, S. (2010). Gangguan Akibat Kekurangan Yodium pada Wanita Usia Subur di Kecamatan Baturaden Kabupaten Banyumas, Jawa Tengah. *Kesmas: National Public Health Journal*, 5(3), 105–109. <https://doi.org/10.21109/kesmas.v5i3.142>
- Fahmi, R. M., & Jumadi, J. (2023). Analysis of Research Trends in Creative Thinking Skills in Science Learning: A Systemic Literature Review. *Jurnal Penelitian Pendidikan IPA*, 9(7), 204–211. <https://doi.org/10.29303/jppipa.v9i7.2742>
- Farida, I., Liliyansari, & Sopandi, W. (2011). Pembelajaran Berbasis Web untuk Meningkatkan Kemampuan Interkoneksi Multiplelevel Representasi Mahasiswa Calon Guru pada Topik Kesetimbangan Larutan Asam-Basa. *Jurnal Chemica*, 12(1), 14–24.
- Fathonah, S., Cahyono, E., Haryani, S., Sarwi, S., & Lestari, N. H. (2024). Application of Multirepresentation-Based Creative Problem-Solving Learning Models to Improve Critical and Creative Thinking Skills for Students. *International Journal of Cognitive Research in Science, Engineering and Education (IJCRSEE)*, 12(1), 185–200. <https://doi.org/10.23947/2334-8496-2024-12-1-185-200>
- Fernandino, L., Binder, J., Desai, R., Pendl, S., Humphries, C., Gross, W., Conant, L., & Seidenberg, M. (2016). Concept Representation Reflects Multimodal Abstraction: A Framework for Embodied Semantics.. *Cerebral cortex*, 26(5), 15-34 . <https://doi.org/10.1093/cercor/bhv020>.
- Fitri, A. S., & Fitriana, Y. A. N. (2020). Analisis Senyawa Kimia pada Karbohidrat. *Sainteks*, 17(1), 45–52. <https://doi.org/10.30595/sainteks.v17i1.8536>
- Fitria, C. & Siswono, T.Y.E. 2014. Profil Keterampilan Berpikir Kreatif Siswa dalam Memecahkan Masalah Matematika Ditinjau dari Tipe Kepribadian (Sanguinis, Koleris, Melankolis, dan Plegmatis). *Jurnal Ilmiah Pendidikan Matematika*, 3(3), 23-31.
- Fitriana, D. A., Sukirwan, & Rudiana, R. (2020). Pengaruh Model Pembelajaran Multipel Representasi Terhadap Kemampuan Berpikir Kreatif Matematis Siswa SMP. *Jurnal Inovasi Dan Riset Pendidikan Matematika*, 1(4), 383–394. <https://jurnal.untirta.ac.id/index.php/wilangan/article/view/9570>
- Fujiawati, F. S. (2016). Pemahaman Konsep Kurikulum dan Pembelajaran dengan Peta Konsep Bagi Mahasiswa Pendidikan Seni. *Jurnal Pendidikan Dan*

- Kajian Seni*, 1(1), 16–28.
- Goto, M., Fujimoto, W., Nio, J., Iwanaga, T., & Kawasaki, T. (2003). Immunohistochemical demonstration of acidic mammalian chitinase in the mouse salivary gland and gastric mucosa.. *Archives of oral biology*, 48(10), 701-707. [https://doi.org/10.1016/S0003-9969\(03\)00150-X](https://doi.org/10.1016/S0003-9969(03)00150-X).
- Grajzel, K., Acar, S., Dumas, D., Organisciak, P., & Berthiaume, K. (2023). Measuring Flexibility: A Text-Mining Approach. *Frontiers in Psychology*, 13, 1–16. <https://doi.org/10.3389/fpsyg.2022.1093343>
- Hardanti, E. K., Sarwanto, & Cari. (2016). Pengembangan Modul Pembelajaran Berbasis Peta Konsep Pada Materi Gelombang Elektromagnetik Kelas XI Sman 1 Dolopo Kabupaten Madiun Jawa Timur. *Jurnal Inkuiiri*, 5(2), 64–70. <https://media.neliti.com/media/publications/67094-ID-pengembangan-modul-pembelajaran-fisika-b.pdf>.
- Hargono, H., Abdullah, A., & Sumantri, I. (2008). Pembuatan Kitosan Dari Limbah Cangkang Udang Serta Aplikasinya Dalam Mereduksi Kolesterol Lemak Kambing. *Reaktor*, 12(1), 53–57. <https://doi.org/10.14710/reaktor.12.1.53-57>
- Hasbullah. (2021). Kurikulum Pendidikan Guru : Metode Simulasi dalam Pembelajaran Di Masa Pandemi. *ADAARA: Jurnal Manajemen Pendidikan Islam*, 11(2), 155–162.
- Helmia, T. A., Sa, Y., A, M., & A, S. (2020). Using Animated Video Based on Scientific Approach To Improve Students Higher Order Thingking Skill. *Indonesian Journal of Social Research (IJSR)*, 2(1), 9–17.
- Huliatusnisa, Y., Wibisana, E., & Hariyani, L. (2019). Analisis Kemampuan Berpikir Kreatif Matematis Siswa Dalam Menyelesaikan Soal Pemecahan Masalah. *Indonesian Journal of Elementary Education (IJOEE)*, 1(1), 56–65. <https://doi.org/10.31000/ijoe.v1i1.2567>
- Johari, A., Hasan, S., & Rakhman, M. (2014). Penerapan Media Video Dan Animasi Pada Materi Memvakum Dan Mengisi Refrigeran Terhadap Hasil Belajar Siswa. *Journal of Mechanical Engineering Education*, 1(1), 8–15. <https://doi.org/10.17509/jmee.v1i1.3731>
- Johnson, E. B. 2002. *Contextual Teaching and Learning*. Califorenia: Corwin Press, Inc.
- Johnstone, A. (1991). Why is chemistry difficult to learn? things are seldom what they seem. *Journal of Computer Assisted Learning*, 7(1), 75–83.
- Johnstone, A. H. (1993). The development of chemistry teaching. *Journal of Computer Assisted Learning*, 70(9), 701–705.
- 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(2), 488–503.

- <https://doi.org/https://doi.org/10.59175/pijed.v3i2.333>
- Karyati, F. (2017). Pengembangan Media Gambar Dalam Meningkatkan Pembelajaran Matematika. *Jurnal Pendidikan Dan Keguruan*, 3(1), 312–320.
- Katili, A. S. (2009). Struktur Dan Fungsi Protein Kolagen. *Jurnal Pelangi Ilmu*, 2(5), 19–29.
- Khasanah, K. (2019). Peta Konsep sebagai Strategi Meningkatkan Hasil Belajar Siswa Sekolah Dasar. *Jurnal Edutained : Jurnal Pendidikan Dan Pelatihan*, 3(2), 152–164. <https://doi.org/10.37730/edutrained.v3i2.8>
- Kim, K. H. (2006). Can We Trust Creativity Tests? A Review of the Torrance Tests of Creative Thinking (TTCT). *Creativity Research Journal*, 18(1), 3–14. https://doi.org/10.1207/s15326934crj1801_2
- Kusumawati, N. P. Y. S., Jayanta, I. N. L., & Sukmana, A. I. W. I. Y. (2021). Learning Video: Efforts to Improve the Quality of Natural Resource Learning for Elementary School Students. *International Journal of Elementary Education*, 5(3), 461–470. <https://doi.org/10.23887/ijee.v5i3.35548>
- Leasa, M., Batlolona, J. R., & Talakua, M. (2021). Elementary students' creative thinking skills in science in the Maluku islands, Indonesia. *Vilnius Tech: Vilnius Gediminas Technical University*, 14(1), 74–89. <https://doi.org/10.3846/cs.2021.11244>
- Leonard. (2012). Peran Kemampuan Berpikir Dalam Proses Pembelajaran Matematika. *Pasundan Journal of Mathematics Education : Jurnal Pendidikan Matematika*, 2(1), 1–16. <https://doi.org/10.23969/pjme.v2i1.2457>
- Lin, C. S., & Wu, R. Y. W. (2016). Effects of Web-Based Creative Thinking Teaching on Students' Creativity and Learning Outcome. *Eurasia Journal of Mathematics, Science and Technology Education*, 12(6), 1675–1684. <https://doi.org/10.12973/eurasia.2016.1558a>
- Madhakomala, R., Hakim, M. A., & Syifauzzuhrah, N. (2022). Problems of Education in Indonesia and Alternative Solutions. *International Journal of Business, Law, and Education*, 3(2), 135–144. <https://doi.org/10.56442/ijble.v3i3.64>
- Manurung, A. S., Fahrurrozi, Utomo, E., & Gumelar, G. (2023). Implementasi Berpikir Kritis dalam Upaya Mengembangkan Kemampuan Berpikir Kreatif Mahasiswa. *Jurnal Papeda: Jurnal Publikasi Pendidikan Dasar*, 5(2), 120–132. <https://doi.org/10.36232/jurnalpendidikandasar.v5i2.3965>
- Maryani, I., Estriningrum, U., & Nuryana, Z. (2023). Self-Regulated Learning and Creative Thinking Skills of Elementary School Students in the Distance Education During the Covid-19 Pandemic. *Vilnius Tech: Vilnius Gediminas Technical University*, 16(2), 496–508. <https://doi.org/10.3846/cs.2023.15278>

- Maryanti, R., Nandiyanto, A. B. D., Hufad, A., & Sunardi, S. (2021). Science Education for Students with Special Needs in Indonesia: From Definition, Systematic Review, Education System, to Curriculum. *Indonesian Journal of Community and Special Needs Education*, 1(1), 1–8. <https://doi.org/10.17509/ijcsne.v1i1.32653>
- Matondang, S. E. (2024). Web Media in Combined Guided Inquiry Learning Lesson Study Creative Thinking and Student Learning Outcomes. *LAVOISIER: Chemistry Education Journal*, 3(1), 91–103. <https://doi.org/10.24952/lavoisier.v3i1.10785>
- Mawadah, N. V., Ikhsan, J., Suyanta, Nurohman, S., & Rejeki, S. (2023). 3D Visualization Trends in Science Learning: Content Analysis. *Jurnal Penelitian Pendidikan IPA (JPPIPA)*, 9(8), 397–403. <https://doi.org/10.29303/jppipa.v9i8.3864>
- Maxwell, J. C. (2004). *Berpikir Lain Dari yang Biasanya (Thinking For A Change)*. Batam: Karisma Press.
- Muhaimin, Asrial, Habibi, A., Mukminin, A., & Hadisaputra, P. (2020). Science teachers' integration of digital resources in education: A survey in rural areas of one Indonesian province. *Heliyon*, 6(8), 1–8. <https://doi.org/10.1016/j.heliyon.2020.e04631>
- Muhibbin, & Hidayatullah, M. A. (2020). Implementasi Teori Belajar Konstruktivisme Vygotsky Pada Mata Pelajaran Pai Di SMA Sains Qur'an Yogyakata. *Belajea; Jurnal Pendidikan Islam*, 5(1), 113–130. <https://doi.org/10.29240/belajea.v5i1.1423>
- Munandar, U. (2009). *Pengembangan Kreativitas Anak Berbakat*. Jakarta: Rineka cipta.
- Nuraeni, & Walahe, D. (2023). The Evolution of Science Education : Trends and Challenges in the 21st Century. *Journal of Training, Education, Science and Technology*, 1(1), 25–30.
- Nurfadhillah, S. (2021). Media Pembelajaran: Pengertian media Pembelajaran, Landasan, Fungsi, Manfaat, Jenis-Jenis Media Pembelajaran, dan Cara Penggunaan Kedudukan Media Pembelajaran. Sukabumi: CV Jejak.
- Nurhasnah, Sepriyanti, N., & Kustati, M. (2024). Learning Theories According to Constructivism Theory. *Journal International Inspire Education Technology (JIET)*, 3(1), 19–30. <https://doi.org/10.55849/jiet.v3i1.577>
- Nurjan, S. (2018). Pengembangan Berpikir Kreatif. *AL-ASASIYYA: Journal Basic Of Education*, 3(1), 105–116.
- Pangestu, N. S., & Yunianta, T. N. H. (2019). Proses Berpikir Kreatif Matematis Siswa Extrovert dan Introvert SMP Kelas VIII Berdasarkan Tahapan Wallas. *Mosharafa: Jurnal Pendidikan Matematika*, 8(2), 215–226. <https://doi.org/10.31980/mosharafa.v8i2.554>
- Patel, S., Lee, J., Mohamed, N., Yang, C., House, J., Patterson, R., & Nyachoti, M.

- (2024). Determination of standardized total tract phosphorus digestibility in expeller-pressed Canadian prairie grown soybean meal fed to growing pigs. *Journal of Animal Science*, 102(2), 285–286. <https://doi.org/https://doi.org/10.1093/jas/skae102.324>
- Pratomo, A., & Irawan, A. (2015). Pengembangan Media Pembelajaran Interaktif Berbasis Web Menggunakan Metode Hannafin dan Peck. *Jurnal Positif*, 1(1), 14–28.
- Purwati, S., & Alberida, H. (2022). Profile of Students' Creative Thinking Skills in High School. *Thinking Skills and Creativity Journal*, 5(1), 22–27. <https://doi.org/10.23887/tscj.v5i1.45432>
- Putra, A. N., & Mardainis. (2017). Sistem Deteksi Kondisi Supply dan Kebutuhan Mineral Pada Tubuh. *SATIN: Sains Dan Teknologi Informasi*, 3(2), 46–55.
- Rahmadoni, J. (2018). Perancangan Simulasi Pembelajaran Kriptografi Klasik Menggunakan Metode Web Based Learning. *Journal of Information Technology and Computer Science (INTECOMS)*, 1(1), 34–43.
- Rahmawati, I. Y. (2016). Analisis Teks Dan Konteks Pada Kolom Opini "Latihan Bersama Al Komodo 2014" Kompas. *Jurnal Dimensi Pendidikan Dan Pembelajaran*, 5(1), 49–57. <https://doi.org/10.24269/dpp.v4i1.53>
- Raida, S. A. (2018). Identifikasi Materi Biologi SMA Sulit Menurut Pandangan Siswa Dan Guru SMA Se-Kota Salatiga. *Journal of Biology Education*, 1(2), 209–222.
- Ramadhani, D. H., Jumadi, & Sandi, G. (2024). Implementasi Algoritma K-Nearest Neighbors (KNN) untuk Prediksi Gizi Buruk. *SMATIKA : STIKI Informatika Jurnal*, 14(2), 326–336. <https://doi.org/https://doi.org/10.32664/smatika.v14i02.1360>
- Ramdani, A., Artayasa, I. P., Yustiqvar, M., & Nisrina, N. (2021). Enhancing Prospective Teachers' Creative Thinking Skills: a Study of the Transition From Structured To Open Inquiry Classes. *Cakrawala Pendidikan*, 40(3), 637–649. <https://doi.org/10.21831/cp.v40i3.41758>
- Rivera, C. (2019). Essentials of recurrent aphthous stomatitis. *Biomedical Reports*, 11(2), 47–50. <https://doi.org/10.3892/br.2019.1221>
- Rizaldi, D. R., Jufri, A. W., & Jamaluddin. (2020). Phet: Simulasi Interaktif Dalam Proses Pembelajaran Fisika. *Jurnal Ilmiah Profesi Pendidikan*, 5(1), 10–14. <https://doi.org/10.29303/jipp.v5i1.103>
- Romdhon, J., Masrifah, M., Shiyama, N. M., & Suharyati, H. (2024). Applying Constructivist Learning Theory to Enhance Student Learning Outcomes in Elementary Schools. *International Journal of Sustainable Development & Future Society*, 2(2), 62–69.
- Rosengrant, D., Etkina, E., & Heuvelen, A. Van. (2007). An overview of recent research on multiple representations. *AIP Conference Proceedings*, 883, 149–152. <https://doi.org/10.1063/1.2508714>

- Rosliawati, L., Yuliyanto, A., Daminah, & Fujiarti, A. (2024). Pictorial Riddle Learning Model to Improve Critical Thinking Skills of Fifth-Grade Elementary School Students in Mathematics Learning. *Jurnal Pendidikan*, 5(2), 59–70. <https://doi.org/10.33830/jp.v25i2.8412.2024>
- Rusman. 2013. *Belajar dan Pembelajaran Berbasis Komputer*. Bandung: Alfabeta.
- Safitri, E. I., Haka, N. B., & Supriyadi. (2021). Model Multipel Representasi Solusi Peningkatan Kemampuan Berpikir Kreatif Dan Self Efficacy Kelas X Mata Pelajaran Biologi. *Prosiding Seminar Nasional Pendidikan IPA Tahun 2021*, Bandung 16 Oktober 2021.
- Sani, Y., Sari, N. F., & Harahap, R. D. (2022). Analisis Kesulitan Belajar Siswa Pada Materi Biologi Di Kelas Xi Sma Muhammadiyah-10 Rantauprapat. *Jurnal Mahasiswa Pendidikan*, 3(1), 13–20. <https://doi.org/10.36987/jmapen.v3i1.1712>
- Sari, L. N., & Bintang, P. (2022). Konsep Sistem Pencernaan pada Manusia berdasarkan Al-quran dan Hadits. *Jurnal Penelitian, Pendidikan Dan Pengajaran: JPPP*, 3(3), 244–251. <https://doi.org/10.30596/jppp.v3i3.13222>
- Sastroamidjojo, & Hardjono. (2005). *Kima Organik Stereokimia, Karbohidrat, Lemak, dan Protein*. Gadjah Mada University Press.
- Saufi, M., & Riadi, A. (2017). Mengembangkan Berpikir Kreatif Siswa Melalui Efektivitas Pembelajaran Matematika Menggunakan Peta Konsep. *Lentera: Jurnal Ilmiah Kependidikan*, 12(1), 51–61. <https://doi.org/10.33654/jpl.v12i1.404>
- Schaal, S., Bogner, F.X. & Girwidz, R. (2010). Concept Mapping Assessment of Media Assisted Learning in Interdisciplinary Science Education. *Res Sci Educ*, 40, 339–352. <https://doi.org/10.1007/s11165-009-9123-3>
- Schroeder, N.L., Nesbit, J.C., Anguiano, C.J. et al. (2018). Studying and Constructing Concept Maps: a Meta-Analysis. *Educ Psychol Rev*, 30, 431–455. <https://doi.org/10.1007/s10648-017-9403-9>
- Setiawan, A., Nugroho, W., & Widyaningtyas, D. (2023). Development of Interactive Powerpoint Learning Media Based on Information and Communication Technologies to Improve Student Learning Outcomes. *Jurnal Pendidikan Dasar Nusantara*, 9(1), 75–86. <https://doi.org/10.29407/jpdn.v9i1.20056>
- Setiawan, H. C., Nugroho, W., & Rofi, H. A. (2022). The Importance Of Video As Learning Media According To Principle Of Media Production “Visuals.” *Injury: Interdisciplinary Journal and Humanity*, 1(3), 92–97. <https://doi.org/10.58631/injury.v1i3.24>
- Silén, C., Wirell, S., Kvist, J., Nylander, E., & Smedby, Ö. (2008). Advanced 3D visualization in student-centred medical education. *Medical Teacher*, 30(5), 115–124. <https://doi.org/10.1080/01421590801932228>

- Sitoresmi, W. E., & Alicia, V. (2024). Improving Students' Reading Skill Through the Report Texts. *Journal Puan Indonesia*, 5(2), 547–551. <https://doi.org/10.37296/jpi.v5i2.216>
- Smith, G., Najwa, N. A., Kuncoro, T., & Alfan, M. (2023). Creative Thinking Ability of Elementary School Students Based on Learning Models. *KnE Social Sciences*, 8(10), 197–203. <https://doi.org/10.18502/kss.v8i10.13446>
- Suantini, I. G. A. K. A., Antara, P. A., & Trisna, G. A. P. S. (2022). Illustrated Electronic Module to Improve Elementary School Students' Creative Thinking Skills. *Thinking Skills and Creativity Journal*, 5(2), 62–71. <https://doi.org/10.23887/tscj.v5i2.57064>
- Sucilestari, R., Ramdani, A., Susilawati, Sukarso, A., & Rokhmat, J. (2023). Project-Based Learning Supports Students' Creative Thinking in Science Education. *Jurnal Penelitian Pendidikan IPA (JPPIPA)*, 9(11), 1038–1044. <https://doi.org/10.29303/jppipa.v9i11.5054>
- Sugiyono. (2024). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Sukasni, A., & Efendy, H. (2017). The Problematic of Education System in Indonesia and Reform Agenda. *International Journal of Education*, 9(3), 183–199. <https://doi.org/10.5296/ije.v9i3.11705>
- Sundayana, R. (2020). *Statistika Penelitian Pendidikan*. Bandung: Alfabeta.
- Supriadi, G. (2021). *Statistik Penelitian Pendidikan*. Yogyakarta: UNY Press.
- Surahman, E., & Surjono, H. D. (2017). Pengembangan Adaptive Mobile Learning Pada Mata Pelajaran Biologi SMA Sebagai Upaya Mendukung Proses Blended Learning. *Jurnal Inovasi Teknologi Pendidikan*, 4(1), 26–37. <https://doi.org/10.21831/jitp.v4i1.9723>
- Susanto, A. M., Epriliyana, N. N., & Utama, H. H. (2024). Implementation of Learning Innovations in Society 5.0 to Stimulate Creative Thinking Skills at Higher Education. *Jurnal Dimensi Pendidikan Dan Pembelajaran (JDPP)*, 12(1), 25–36. <https://doi.org/10.24269/dpp.v12i1.8282>
- Tapia, R. R., Fernández, I., Pinilla, J. B., & Iglesias, J. D. (2023). Teaching Digestive System: Spanish Pre-service Teacher's Learning Difficulties and Alternative Conceptions. *Eurasia Journal of Mathematics, Science and Technology Education*, 19(4), 1–14. <https://doi.org/10.29333/EJMSTE/13037>
- Tarigan, R. A., Saptono, A., & Muchtar, S. (2023). Enhancing Indonesia's Education Quality: Identifying and Addressing Key Challenges. *1st International Students Conference on Business, Education, Economics, Accounting, and Management (ISC-BEAM)*, 659–670. <https://journal.unj.ac.id/unj/index.php/isc-beam/article/download/42700/16818/>

- Togas, P. V., Naharia, O., Manggopa, H., Rompas, P. D. ., & Oroh, R. (2021). Development of Web-Based Digital System Learning Media. *Asia Pacific Journal of Management and Education*, 4(3), 22–34. <https://doi.org/10.32535/apjme.v4i3.1263>
- Tohari, B., & Rahman, A. (2024). Konstruktivisme Lev Semonovich Vygotsky dan JeromeBruner: Model Pembelajaran Aktif dalam Pengembangan Kemampuan Kognitif Anak. *Nusantara: Jurnal Pendidikan Indonesia*, 4(1), 209–228.
- Treagust, D., Chittleborough, G., & Mamiala, T. (2003). The role of submicroscopic and symbolic representations in chemical explanations. *International Journal of Science Education*, 25(11), 1353–1368. <https://doi.org/10.1080/0950069032000070306>
- Treagust, D. F., & Tsui, C. Y. (2013). Multiple Representations in Biological Education, Models and Modeling in Science Education. In *Springer* (Vol. 7, Issue 1).
- Tresnaasih, I. (2020). Modul Pembelajaran Biologi Sistem Pencernaan Manusia SMA Kelas XI. In *Direktorat SMA, Direktorat Jenderal PAUD, DIKDAS dan DIKMEN*.
- Tristina, A., Rifqiawati, I., Mahrawi, M., Hendriyani, M. E., & Khastini, R. O. (2024). Revealing Obstacles: Examining High School Students' Difficulties in Understanding Digestive System Concepts in Class XI MIPA. *Jurnal Penelitian Pendidikan IPA (JPPIPA)*, 10(6), 3342–3350. <https://doi.org/10.29303/jppipa.v10i6.6860>
- Tsai, C. A., Song, M. Y. W., Lo, Y. F., & Lo, C. C. (2023). Design thinking with constructivist learning increases the learning motivation and wicked problem-solving capability—An empirical research in Taiwan. *Thinking Skills and Creativity*, 50, 1–10. <https://doi.org/10.1016/j.tsc.2023.101385>
- Umaru, I. J., Mary, E., Umaru, K. I., Yakubu, O. E., Umaru, H., Godwin, E. G., Mmesoma, M. P., Sunday, S. O., Faith, O. E., & Chizaram, B. C. (2023). Peptic Ulcer Disease and Its Implications. *Research of Gastric Management and Hepatology*, 1(1), 1–15. <https://doi.org/10.58489/2836-6204/004>
- Utami, F. N. (2020). Peranan Guru dalam Mengatasi Kesulitan Belajar Siswa Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, 2(1), 93–101. <https://doi.org/10.31004/edukatif.v2i1.91>
- Vasconcelos, L. A., Neroni, M. A., Cardoso, C., & Crilly, N. (2018). Idea representation and elaboration in design inspiration and fixation experiments. *International Journal of Design Creativity and Innovation*, 6(1–2), 93–113. <https://doi.org/10.1080/21650349.2017.1362360>
- Vogt, A., Babel, F., Hock, P., Baumann, M., & Seufert, T. (2021). Immersive virtual reality or auditory text first? Effects of adequate sequencing and prompting on learning outcome. *British Journal of Educational*

- Technology*, 52(5), 2058–2076. <https://doi.org/10.1111/bjet.13104>
- Wahid, A. H., Muali, C., & Dhuyufallah. (2018). Media dan Motivasi Belajar; Kritik Eksplanasi Konstruktif dalam Implementasi Strategi Pembelajaran. *An-Nuha*, 5(1), 17–33.
- Wang, H., Chang, C., & Li, T. (2007). The comparative efficacy of 2D- versus 3D-based media design for influencing spatial visualization skills. *Comput. Hum. Behav.*, 23, 1943–1957. <https://doi.org/10.1016/j.chb.2006.02.004>.
- Wibowo, S., Wangid, M. N., & Firdaus, F. M. (2025). The relevance of Vygotsky's constructivism learning theory with the differentiated learning primary schools. *Journal of Education and Learning*, 19(1), 431–440. <https://doi.org/10.11591/edulearn.v19i1.21197>
- Wilhelmj, C. M. (2011). Physiology of the digestive system. *Clinical Drug Therapy for Canadian Practice: Second Edition*, 14, 177–204. <https://doi.org/10.1016/b978-1-4831-6821-0.50056-6>
- Wulandari, A. P., Salsabila, A. A., Cahyani, K., Nurazizah, T. S., & Ulfiah, Z. (2023). Pentingnya Media Pembelajaran dalam Proses Belajar Mengajar. *Journal on Education*, 5(2), 3928–3936. <https://doi.org/10.31004/joe.v5i2.1074>
- Wulandari, D., & Kurnianingsih, W. (2018). Pengaruh Usia, Stres, dan Diet Tinggi Karbohidrat Terhadap Kadar Glukosa Darah. *Jurnal Ilmiah Rekam Medis Dan Informatika Kesehatan*, 8(1), 16–25. <http://ojs.udb.ac.id/index.php/infokes/article/view/192>
- Yang, F. Y., & Wang, H. Y. (2023). Tracking visual attention during learning of complex science concepts with augmented 3D visualizations. *Computers and Education*, 193, 1–18. <https://doi.org/10.1016/j.compedu.2022.104659>
- Yusa & Maniam. (2016). *Advanced Learning Biology*. Bandung: Grafindo Media Pratama.
- Zhang, Z., Tanaka, I., Pan, Z., Ernst, P. B., Kiyono, H., & Kurashima, Y. (2022). Intestinal homeostasis and inflammation: Gut microbiota at the crossroads of pancreas–intestinal barrier axis. *European Journal of Immunology*, 52(7), 1035–1046. <https://doi.org/10.1002/eji.202149532>
- Zuhri, R. S., Wilujeng, I., & Haryanto. (2023). Multiple Representation Approach in Elementary School Science Learning: A Systematic Literature Review. *International Journal of Learning, Teaching and Educational Research*, 22(3), 51–73. <https://doi.org/10.26803/ijlter.22.3.4>
- Zukswert, J. M., Barker, M. K., & McDonnell, L. (2019). Identifying troublesome jargon in biology: Discrepancies between student performance and perceived understanding. *CBE Life Sciences Education*, 18, 1–12. <https://doi.org/10.1187/cbe.17-07-0118>