

DAFTAR PUSTAKA

- Alifariki, L. O. (2019). Faktor Risiko Kejadian Bronkitis di Puskesmas Mekar Kota Kendari. *Ilmu Kesehatan*, 8(1), 1–9.
- Álvarez-Huerta, P., Muela, A., & Larrea, I. (2026). Exploring Student Engagement, Creativity, and Critical Thinking in Higher Education. *Active Learning in Higher Education*. <https://doi.org/10.1177/14697874261457089>
- Arikunto, S. (2019). *Prosedur Penelitian: Suatu Pendekatan Praktik* (Edisi revi). Rineka Cipta.
- Arikunto, S. (2021). *Dasar-dasar evaluasi pendidikan* (R. Damayanti (ed.); Edisi revi). Bumi Aksara.
- Azrai, E. P., Suryanda, A., Wulaningsih, R. D., & Sumiyati, U. K. (2020). Kemampuan Berpikir Kritis dan Literasi Sains Siswa SMA di Jakarta Timur. *EDUSAINS*, 12(1), 89–97.
- Bahri, Raharjo, M., & Suhartono. (2021). Dampak Polusi Udara Dalam Ruangan Pada Kejadian Kasus Pneumonia: Sebuah Review. *Jurnal LINK*, 17(2), 99–104. <https://doi.org/10.31983/link.v17i2.6833>
- Baskara, F. X. R. (2025). ChatGPT and Google Gemini in EFL Education : A Qualitative Exploration of Pedagogical Efficacy Among Indonesian Sophomores. *JOLLT Journal of Languages and Language Teaching*, 13(1), 436–447.
- Bayer, H., Ince Araci, F. G., & Gurkan, G. (2024). ChatGPT-4o, ChatGPT-4 and Google Gemini are compared with Students: A Study in Higher Education. *International Journal of Technology in Education and Science*, 8(4), 627–644. <https://doi.org/10.46328/ijtes.585>
- Campbell, D. T., & Stanley, J. C. (2015). *Experimental and Quasi-Experimental Designs for Research* (Reprint Ed). Ravenio Books.
- Chalik, R. (2016). *Anatomi Fisiologi Manusia*. Pusdik SDM Kesehatan.
- Cheih, C. W. C., & Aun, W. T. (2025). Unleashing AI in Education: A Comparative Analysis of Malaysian University Student Engagement and Learning Support between Google Gemini and ChatGPT. *Journal of Educational Technology Systems*, 54(2), 310–325. <https://doi.org/10.1177/00472395251380292>
- Costa, A. R., Lima, N., Viegas, C., & Caldeira, A. (2024). Critical minds: enhancing education with ChatGPT. *Cogent Education*, 11(1), 13. <https://doi.org/10.1080/2331186X.2024.2415286>
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publications.
- Facione, P., & Gittens, C. A. (2016). *Think Critically* (3rd Editio). Pearson

Education.

- Faldi, M. R. R., Prafitasari, A. N., & Soelfiah, A. (2023). Chat Gpt : Improving Biology Learning Outcomes Problem-Based Learning Assisted Artificial Intelligence. *Biosfer: Jurnal Tadris Biologi*, 14(2), 217–225. <https://doi.org/10.24042/b>
- Field, A. (2018). Discovering Statistics Using IBM SPSS Statistics. In J. Seaman (Ed.), *Sage Publications Ltd* (5th ed.).
- Firdaus, T., Aminatus Sholeha, S., Jannah, M., & Setiawan, A. R. (2024). Comparison of ChatGPT and Gemini AI in Answering Higher-Order Thinking Skill Biology Questions: Accuracy and Evaluation. *International Journal of Science Education and Teaching*, 3(3), 126–138. <http://doi.org/10.14456/ijset.2024.11>
- Gemini Team, G. (2025). Gemini: A Family of Highly Capable Multimodal Models. *Google Research*, 1–90.
- Ghozali, I. (2018). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25* (9th ed.). Badan Penerbit Universitas Diponegoro, Semarang.
- Guo, J., Qichao, Y., & Malik, Z. bin A. (2026). A network meta-analysis of pedagogical models in physical education: evaluating multidimensional learning outcomes and instructional duration effects. *Frontiers in Psychology*, 17(1766890), 1–12. <https://doi.org/10.3389/fpsyg.2026.1766890>
- Guo, Y., Huang, L., Zhang, C., Li, Q., & Chen, M. (2026). ChatGPT in education: A systematic review of its impact on critical thinking skills and dispositions. *Thinking Skills and Creativity*, 60(102106), 1–19. <https://doi.org/10.1016/j.tsc.2025.102106>
- Hadarmawandi, Rompegading, A. B., Sir, P., Anita, Y., & Irfandi, R. (2025). Pengaruh Penerapan ChatGPT dalam Pembelajaran Biologi terhadap Kemampuan Berpikir Kritis Siswa. *Journal of Sustainable Innovation on Education, Mathematics and Natural Sciences*, 4(3), 131–138.
- Hake, R. R. (1999). *Analyzing Change/Gain Scores*. <https://web.physics.indiana.edu/sdi/AnalyzingChange-Gain.pdf>
- Haya, F., Nisa, K., Ladipasa, R. F., Suriani, A., & Media, A. (2025). Dampak Polusi Udara terhadap Kesehatan Manusia. *WISSEN: Jurnal Ilmu Sosial Dan Humaniora*, 3(2), 180–190.
- Heim, A. B., Esparza, D., Holmes, N. G., & Smith, M. K. (2023). Comparing study features is easy but identifying next steps is hard : Evaluating critical thinking through the Biology Lab Inventory of Critical Thinking in Ecology. *Academic Practice in Ecology and Evolution*, 13(February), 1–23. <https://doi.org/10.1002/ece3.10071>
- Hidayatullah, R., Hayati, R. M., Pratiwi, W., Saputra, E. E., & Alfani, A. K. (2025).

- Pengembangan Model Pembelajaran Bahasa Berbasis AI Gemini untuk Meningkatkan Keterampilan Berpikir Kritis Mahasiswa. *Adjektiva: Educational Languages and Literature Studies*, 8(2), 92–101. <https://doi.org/10.30872/adjektiva.v8i2.5492>
- Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education. In *Data Ethics: Building Trust* (pp. 151–180). Globethics Publications. <https://doi.org/10.4018/978-1-6684-3595-3.ch012>
- Holmes, W., Porayska-Pomsta, K., Holstein, K., Sutherland, E., Baker, T., Shum, S. B., Santos, O. C., Rodrigo, M. T., Cukurova, M., Bittencourt, I. I., & Koedinger, K. R. (2022). Ethics of AI in Education: Towards a Community-Wide Framework. *International Journal of Artificial Intelligence in Education*, 32(3), 504–526. <https://doi.org/10.1007/s40593-021-00239-1>
- Iba, Z., & Wardhana, A. (2023). *Metode Penelitian* (M. Pradana (ed.)). CV.Eureka Media Aksara.
- Imran, M., & Almusharraf, N. (2024). Google Gemini as a next generation AI educational tool: a review of emerging educational technology. *Smart Learning Environments*, 11(22), 8. <https://doi.org/10.1186/s40561-024-00310-z>
- Jinan, R. S. (2024). *Fungsi laring dan strukturnya pada manusia*. Tirto.Id – Edusains. <https://tirto.id/fungsi-laring-dan-struktur-laring-gWPU>
- Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., ... Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103(March), 9. <https://doi.org/10.1016/j.lindif.2023.102274>
- Kazlaris, G. C., Keramopoulos, E., Bratsas, C., & Kokkonis, G. (2025). Augmented Reality in Education Through Collaborative Learning: A Systematic Literature Review. *Multimodal Technologies and Interaction*, 9(94), 33.
- Kinsella, C., Putwain, D. W., & Kaye, L. K. (2016). Learner Engagement: A Review of Approaches in the Psychology of Education and Art Education. *Review of Education*, 4(3), 266–289. <https://doi.org/10.1002/rev3.3063>
- Kurniawan, A. W., & Puspitaningtyas, Z. (2023). *Metode Penelitian Kuantitatif (Edisi Revisi)* (Mardia (ed.); Issue March). Yayasan Kita Menulis.
- LadyOfHats. (2017). *An alveolus is an anatomical structure that has the form of a hollow cavity (diagram)*. Wikimedia Commons. [https://www.physio-pedia.com/File:An_alveolus_is_an_anatomical_structure_that_has_the_form_of_a_hollow_cavity._Mainly_found_in_the_lung,_the_pulmonary_alveoli_are_spherical_outcroppings_of_the_respiratory_bronchioles\).png](https://www.physio-pedia.com/File:An_alveolus_is_an_anatomical_structure_that_has_the_form_of_a_hollow_cavity._Mainly_found_in_the_lung,_the_pulmonary_alveoli_are_spherical_outcroppings_of_the_respiratory_bronchioles).png)
- Landry, J. (2026). *Trachea: Overview, anatomy, and function*. Respiratory Therapy

Zone. <https://www.respiratorytherapyzone.com/trachea/>

- Lestari, F., Alim, J. A., & Noviyanti, M. (2024). Implementation of Differentiated Learning to Enhance Elementary School Students' Mathematical Critical and Creative Thinking Skills. *International Journal of Elementary Education*, 8(1), 178–187. <https://doi.org/10.23887/ijee.v8i1.64295>
- Li, C., Cui, H., & Serra, L. (2026). Computers and Education : Artificial Intelligence The cognitive impact of ChatGPT in higher education : A systematic review of critical and creative thinking outcomes. *Computers and Education: Artificial Intelligence*, 10(100571), 1–15. <https://doi.org/10.1016/j.caeai.2026.100571>
- Listiyani, A. A., & Yudhastuti, R. (2025). Hubungan Pencapaian dan Ventilasi Terhadap Kejadian Tuberculosis Pulmonum : Literatur Riview. *Jurnal Kesehatan Masyarakat*, 9(1), 1834–1843.
- Liu, Y., Wang, W., & Xu, E. (2025). The Effectiveness of Learning Analytics-Based Interventions in Enhancing Students ' Learning Effect : A Meta-Analysis of Empirical Studies. *SAGE Publications*, 15(2), 1–22. <https://doi.org/10.1177/21582440251336707>
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence Unleashed: An Argument for AI in Education*. Pearson. <https://www.pearson.com/content/dam/one-dot-com/one-dot-com / global / Files/about-pearson/innovation/Intelligence-Unleashed-Publication.pdf>
- Muhammad, G. R., Allenidekania, & Rustina, Y. (2024). Terapi Nebulasi pada Pasien Anak Dengan Bronkiolitis. *Journal of Telenursing (JOTING)*, 6(February), 8.
- Munawir. (2020). *Modul Biologi Kelas XI KD 3.8: Sistem Pernafasan*. Direktorat SMA, Ditjen PAUD, DIKDAS dan DIKMEN.
- Mustofa, S., & Patongai, F. M. R. (2023). Bronkitis Akibat Kerja : Patogenesis , Diagnosis , Penatalaksanaan dan Pencegahan. *Jurnal Agromedicine Unila*, 10(2), 27–38.
- Naila, I. (2020). The Effectiveness of Science Project Learning based on Entrepreneurship Model to Improve Elementary Students' Collaborative Skills. *Mimbar Sekolah Dasar (Elementary School Forum)*, 7(3), 348–361.
- Nasution, I. S., Ringo, H., Putri, D. A., Siregar, Sa. R., Siregar, N. A., & Sirait, N. H. (2025). Hubungan Antara Emfisema , Kanker Paru dan Pentingnya Udara Bersih. *HELIUM - Journal of Health Education Law Information and Humanities*, 2(1), 307–311.
- Neil, C. O. (2016). Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy. In *College & Research Libraries* (Vol. 78, Issue 3). Crown Publishing. <https://doi.org/10.5860/crl.78.3.16599>

- Nugraha, R. A. D. (2021). *Materi struktur dan fungsi organ pernafasan*. Bospedia. <https://www.bospedia.com/2021/07/materi-struktur-fungsi-organ-pernafasan>.
- Oates, A., & Johnson, D. (2025). ChatGPT in the Classroom : Evaluating its Role in Fostering Critical Evaluation Skills. *International Journal of Artificial Intelligence in Education*, 35, 1793–1824.
- OpenAI. (2022). *Introducing ChatGPT*. <https://openai.com/blog/chatgpt>
- OpenAI. (2023). *GPT-4 Technical Report* (Vol. 4). <https://cdn.openai.com/papers/gpt-4.pdf>
- Paul, R., & Elder, L. (2021). *Critical Thinking: Tools for Taking Charge of Your Learning and Your Life* (4th ed.). Bloomsbury Publishing. <https://books.google.co.id/books?id=MXZPEAAAQBAJ&printsec>
- Perera, P., & Lankathilake, M. (2023). Preparing to Revolutionize Education with the Multi-Model GenAI Tool Google Gemini? A Journey towards Effective Policy Making. *Journal of Advances in Education and Philosophy*, 7(08), 246–253. <https://doi.org/10.36348/jaep.2023.v07i08.001>
- Putra, P. (2020). *Statistik untuk Penelitian Pendidikan*. Deepublish.
- Putri, D. H., Medriati, R., Ahda, N. V., & Utama, T. H. (2025). Efektivitas Model Pembelajaran Tarl Berbantuan AI Gemini terhadap Kemampuan Berpikir Kritis dan Pemecahan Masalah pada Mata Kuliah Hidrodinamika. *Jurnal Kumparan Fisika*, 8(3), 105–116. <https://doi.org/10.30872/adjektiva.v8i2.5492>
- Rahman, A., Mahir, S. H., Tashrif, T. A., Aishi, A. A., & Karim, A. (2025). Comparative Analysis Based on DeepSeek , ChatGPT , and Google Gemini : Features , Techniques , Performance , Future Prospects. *ArXiv*, 03(04), 1–20. <https://arxiv.org/pdf/2503.04783>
- Ramadhan, M. F., Siroj, R. A., & Afgani, M. W. (2024). Validitas and Reliabilitas. *Journal on Education*, 6(2), 10967–10975. <https://doi.org/10.31004/joe.v6i2.4885>
- Ramadhani, R., Yogica, R., Zulyusri, & Rahmi, F. O. (2025). Pengaruh Penggunaan Gemini AI pada Perencanaan Proyek Biologi terhadap Kreativitas Peserta Didik di SMA. *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan*, 4(1), 2313–2319. <https://doi.org/10.31004/jerkin.v4i1.1762>
- Ramelina, A. S., Sari, R., Ilmu, B., Paru, P., Kedokteran, F., Muhammadiyah, U., Anida, K., & Ramelina, S. (2022). Pneumonia pada Perempuan Usia 56 Tahun: Laporan Kasus. *Continuing Medical Education*, September, 712–719.
- Rensburg, J. J. Van. (2024). Artificial human thinking : ChatGPT ' s capacity to be a model for critical thinking when prompted with problem - based writing activities. *Discover Education*, 3(42), 1–12. <https://doi.org/10.1007/s44217-024-00113-x>

- Russel, S. J., & Norvig, P. (2022). *Artificial Intelligence: A Modern Approach* (4th ed.). Pearson Education Limited.
- Saharjo, B. H., & Ramadhania, D. (2019). Hubungan Antara Hotspot dan Kebakaran Terhadap Timbulnya Penyakit Infeksi Saluran Pernapasan Akut (ISPA) di Kabupaten Kubu Raya, Kalimantan Barat. *Jurnal Silvikultur*, 10(03), 133–139.
- Santoso, S. (2014). *Panduan Lengkap SPSS Versi 22*. Elex Media Komputindo.
- Santoso, S. (2018). *Menguasai Statistik dengan SPSS 25 : Cara Praktis dan Cepat Menguasai Statistik di Era Teknologi Informasi*. PT Elex Media Komputindo.
- Selwyn, N. (2019). *Should Robots Replace Teachers? AI and the Future of Education*. Polity Press.
- Septiana, T. (2024). *Struktur Anatomi Hidung Manusia dan Fungsi Setiap Bagianannya*. Kontan Lifestyle. <https://lifestyle.kontan.co.id/news/struktur-anatomi-hidung-manusia-dan-fungsi-setiap-bagiannya>
- Shukor, N. A. F., & Osman, K. (2025). The Role of Artificial Intelligence in Developing Critical Thinking among Science Students: A Systematic Literature Review. *International Journal of Academic Research in Progressive Education and Development*, 14(3), 164–176. <https://doi.org/10.6007/ijarped/v14-i3/25576>
- Subarkah, A. (2022a). *Bronkus: definisi, anatomi, fisiologi, patofisiologi & farmakologi*. KlinikIndonesia.Com. <https://www.klinikindonesia.com/bronkus>
- Subarkah, A. (2022b). *Faring: Definisi, anatomi, fisiologi, patofisiologi & farmakologi*. KlinikIndonesia.Com. <https://www.klinikindonesia.com/f/faring>.
- Sugiyono. (2019). *Metode penelitian pendidikan: Kuantitatif, kualitatif, kombinasi, R&D dan penelitian tindakan*. Alfabeta.
- Sugiyono. (2021). *Metode penelitian kuantitatif, kualitatif, dan R&D* (Edisi ke-2). Alfabeta.
- Sugiyono. (2023). *Statistika Untuk Penelitian* (Cetakan ke). Alfabeta.
- Sunarto, Wisnu, N., & Ngestingrum, A. H. (2019). *Modul Ajar Anatomi Fisiologi* (N.Surtinah (ed.)). Prodi Kebidanan Magetan Poltekkes Kemenkes Surabaya.
- Suryaningrum, S., Kahar, S. R., & Latupeirissa, L. N. (2025). Persepsi Guru Terhadap Pemanfaatan Chatgpt Dan Gemini Dalam Proses Pembelajaran. *Journal of Innovative and Creativity*, 5(3), 30630–30635.
- Tinoca, L., & Brazao, P. (2025). Artificial intelligence and critical thinking : a case study with educational chatbots. *Frontiers in Education (Frontiers)*, September, 1–12. <https://doi.org/10.3389/educ.2025.1630493>
- Tombeng, J. A., & Porajow, Z. C. (2022). Diagnostik holistik pasien faringitis

- dengan hipertensi di Puskesmas Bahu. *Kedokteran Komunitas Dan Tropik*, 10(1), 393–398.
- Troussas, C., Krouska, A., Kabassi, K., Sgouropoulou, C., & Cristea, A. I. (2022). Editorial : Artificial intelligence techniques for personalized educational software. *Frontiers in Artificial Intelligence*, 5, 1–3.
- Uzun, L. (2023). ChatGPT and Academic Integrity Concerns: Detecting Artificial Intelligence Generated Content. *Language Education and Technology*, 3(1), 45–54. <https://www.langedutech.com/letjournal/index.php/let/article/view/49>
- Verge, T. (2025, June 30). *Google is opening its NotebookLM AI tools to students under 18*. <https://www.theverge.com/news/694917/google-classroom-gemini-ai-notebooklm-education-chromeos-updates>
- Wahyuningsih, H. P., & Kusmiyati, Y. (2017). *Anatomi Fisiologi*. Pusdik SDM Kesehatan.
- Wang, J., & Fan, W. (2025). The effect of ChatGPT on Students' Learning Performance, Learning Perception, and Higher-Order Thinking: Insights from a Meta-Analysis. *Humanities and Social Sciences Communications*, 12(621), 1–21. <https://doi.org/10.1057/s41599-025-04787-y>
- Wang, S., Wang, F., Zhu, Z., Wang, J., Tran, T., & Du, Z. (2024). Artificial intelligence in education : A systematic literature review. *Expert Systems With Applications*, 252(PA), 124167. <https://doi.org/10.1016/j.eswa.2024.124167>
- Wardani, I. S., & Fiorintina, E. (2023). Building Critical Thinking Skills of 21st Century Students through Problem Based Learning Model. *Jurnal Pendidikan Indonesia*, 12(3), 461–470.
- Wei, X., Wang, L., & Lee, L. (2025). The effects of generative AI on collaborative problem-solving and team creativity performance in digital story creation : an experimental study. *International Journal of Educational Technology in Higher Education*, 22(23), 27.
- Wellid, I., Simbolon, L. M., Falahuddin, M. A., Nurfitriani, N., Sumeru, K., Sukri, M. F. bin, & Yuningsih, N. (2024). Evaluasi Polusi Udara PM2 . 5 dan PM10 di Kota Bandung serta Kaitannya dengan Infeksi Saluran Pernafasan Akut. *Jurnal Kesehatan Lingkungan Indonesia*, 23(2), 128–136.
- Wu, X., Zhu, P., Zhang, J., Yin, M., & Wang, Y. (2026). ChatGPT's impact on student learning outcomes: a meta-analysis of 35 experimental studies. *Humanities and Social Sciences Communications.*, 13(684), 1–17.
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education*, 16(1). <https://doi.org/10.1186/s41239-019-0171-0>
- Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI

dialogue systems on students' cognitive abilities: a systematic review. *Smart Learning Environments*, 11(28), 37. <https://doi.org/10.1186/s40561-024-00316-7>

Zhai, X., Chu, X., Chai, C. S., Jong, M. S. Y., Istenic, A., Spector, M., Liu, J. B., Yuan, J., & Li, Y. (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity*, 2021, 1–81. <https://doi.org/10.1155/2021/8812542>

Zhang, Y., & Aryadoust, V. (2022). A Systematic Review of the Validity of Questionnaires in Second Language Research. *Education Sciences*, 12(10), 32. https://www.researchgate.net/publication/364367562_A_Systematic_Review_of_the_Validity_of_Questionnaires_in_Second_Language_Research

Zhao, W. X., Zhou, K., Li, J., Tang, T., Wang, X., Hou, Y., Min, Y., Zhang, J., Dong, Z., Du, Y., Yang, C., Chen, Y., Chen, Z., & Jiang, J. (2026). A Survey of Large Language Models.

Zhao, Y., Yue, Y., Sun, Z., Jiang, Q., & Li, G. (2025). Does Generative Artificial Intelligence Improve Students' Higher-Order Thinking? A Meta-Analysis Based on 29 Experiments and Quasi-Experiments. *Journal of Intelligence*, 13(12), 1–21. <https://doi.org/10.3390/jintelligence13120160>

Zhou, X., Teng, D., & Al-samarraie, H. (2024). The Mediating Role of Generative AI Self-Regulation on Students' Critical Thinking and Problem-Solving. *Education Sciences*, 14(1302), 1–14. <https://doi.org/10.3390/educsci14121302>

