

DAFTAR PUSTAKA

- Adillia, F., & Salimi, M. (2025). Inovasi pembelajaran: penerapan model game based learning (gbl) dengan wordwall untuk meningkatkan hasil belajar siswa kelas v sd. *Jurnal Ilmiah Kependidikan*, 13(3), 1989–1996.
- Afiyah, K. N., & Sutriyani, W. (2024). Efektivitas metode game-based learning berbantuan media flashcard pecahan terhadap hasil belajar matematika siswa. *LINEAR: Journal of Mathematics Education*, 5(2), 171–180. <https://doi.org/10.32332/xmy86j91>
- Alifah, A. H., & Widodo, S. (2024). Membuka kemampuan computational thinking sebagai 21 century skills disiplin stem. *Jurnal Ilmiah Kependidikan*, 11(1), 100–108.
- Amelia, N. D., & Purbanyati, H. S. (2025). Pengaruh model problem based learning berbasis game based learning untuk meningkatkan keterampilan berpikir kritis matematika. *Jurnal Pendidikan Matematika Undiksha*, 16(2), 75–86. <https://doi.org/10.23887/jjpm.v16i2.100003>
- Anistyasari, Y., Ekohariadi, E., & Munoto. (2020). Strategi pembelajaran untuk meningkatkan keterampilan pemrograman dan berpikir komputasi: sebuah studi literatur. *Journal of Vocational and Technical Education (JVTE)*, 2(2), 37–44. <https://doi.org/10.26740/jvte.v2n2.p37-44>
- Ansori, M. (2020). Pemikiran komputasi (computational thinking) dalam pemecahan masalah. *Dirasah : Jurnal Studi Ilmu dan Manajemen Pendidikan Islam*, 3(1), 111–126. <https://doi.org/10.29062/dirasah.v3i1.83>
- Arifin, C., Fedora, & Sulthony, M. M. M. (2025). Panduan guru koding dan kecerdasan artifisial untuk sd/mi kelas v. Pusat perbukuan badan standar, kurikulum, dan asesmen pendidikan kementerian pendidikan dasar dan menengah.
- Arvi, M., Chandra, & Syam, S. S. (2025). Kemampuan berpikir komputasional di sekolah dasar kelas 4 pembelajaran matematika. *Algoritma : Jurnal Matematika, Ilmu pengetahuan Alam, Kebumihan dan Angkasa*, 3(3), 108–121. <https://doi.org/10.62383/algoritma.v3i3.511>
- Baker, R. S., Richey, J. E., Zhang, J., Karumbaiah, S., Andres-Bray, J. M., Nguyen, H. A., Andres, J. M. A. L., & McLaren, B. M. (2025). Gaming the system mediates the relationship between gender and learning outcomes in a digital learning game. *Instructional Science*, 53(2), 203–238. <https://doi.org/10.1007/s11251-024-09679-3>
- Bang, H. J., Li, L., & Flynn, K. (2023). Efficacy of an adaptive game-based math learning app to support personalized learning and improve early elementary school students' learning. *Early Childhood Education Journal*, 51(4), 717–732. <https://doi.org/10.1007/s10643-022-01332-3>

- Bauermeister, T., Janßen, N., & Engler, J.-O. (2025). Conventional teaching vs. e-learning: A case study of German undergraduate biology students. *Education and Information Technologies*, 30(8), 10979–10995. <https://doi.org/10.1007/s10639-024-13261-2>
- Budiarti, H., Wibowo, T., & Puji Nugraheni. (2022). Analisis berpikir komputasional siswa dalam menyelesaikan masalah matematika. *JURNAL PENDIDIKAN MIPA*, 12(4), 1102–1107. <https://doi.org/10.37630/jpm.v12i4.752>
- Elnourani, M., Skärin, F., & Wlazlak, P. (2026). Enhancing interdisciplinary engineering courses through game-based learning. *European Journal of Engineering Education*, 51(3), 676–697. <https://doi.org/10.1080/03043797.2025.2562032>
- Ervina, Silfia, A., Ulfa, D., & Basir, A. (2025). Penerapan strategi game-based learning sebagai inovasi pembelajaran dalam meningkatkan kualitas pendidikan di era globalisasi. *Jurnal Pendidikan Tambusai*, 9(2), 15851–15856.
- Fatqurhohman, Huda, H., Disma, E. H. L., & Lestari, M. C. A. (2023). Implementasi media pembelajaran berbasis game edukasi math playground di smp iv-7 siliragung banyuwangi. *JURNAL PENGABDIAN MASYARAKAT MANAGE*, 4(2), 103–112.
- Handayani, P., & Rahmi, U. (2025). Efektivitas penerapan model game based learning dalam meningkatkan kompetensi literasi numerasi siswa kelas v sd di desa pauh barat pariaman. *Jurnal Ilmiah PGSD FKIP Universitas Mandiri*, 11(3), 299–308.
- Hofifah, U. & Mislan Mislan. (2025). Penerapan model game based learning (gbl) berbasis wordwall untuk meningkatkan keterampilan berpikir kreatif siswa kelas iii sekolah dasar negeri 116/X lambur II. *Ikhlas : Jurnal Ilmiah Pendidikan Islam*, 2(2), 41–56. <https://doi.org/10.61132/ikhlas.v2i2.720>
- Hsu, T.-C., & Hsu, T.-P. (2025). Teaching AI with games: The impact of generative AI drawing on computational thinking skills. *Education and Information Technologies*, 30(15), 21499–21518. <https://doi.org/10.1007/s10639-025-13624-3>
- Ion, T.-C., & Popescu, E. (2025). An innovative distance learning platform for mathematics education in secondary schools: Design, development and preliminary studies. *Education and Information Technologies*, 30(5), 5529–5560. <https://doi.org/10.1007/s10639-024-13040-z>
- Jacobs, E., Garbrecht, O., Kneer, R., & Rohlf, W. (2023). Game-based learning apps in engineering education: Requirements, design and reception among students. *European Journal of Engineering Education*, 48(3), 448–481. <https://doi.org/10.1080/03043797.2023.2169106>

- Juldial, T. U. H., & Haryadi, R. (2024). Analisis keterampilan berpikir komputasional dalam proses pembelajaran. *Jurnal Basicedu*, 8(1), 136–144. <https://doi.org/10.31004/basicedu.v8i1.6992>
- Karimah, V. H., & Prastowo, A. (2023). Penerapan math playground sebagai penunjang karakteristik pendidikan di era revolusi industri 4.0. *Ideguru: Jurnal Karya Ilmiah Guru*, 8(3), 816–825. <https://doi.org/10.51169/ideguru.v8i3.637>
- Lin, C.-H., Kuo, B.-C., & Chang, F. T. Y. (2026). The impact of taiwan adaptive learning platform (TALP) on self-regulated learning and mathematics achievement. *Educational Psychology*, 46(3), 458–479. <https://doi.org/10.1080/01443410.2025.2561028>
- Lutfia, A. H., Kusumaningsih, W., & Suneki, S. (2023). Analisis pemanfaatan media math playground dalam pembelajaran matematika kelas 1 materi pengurangan. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, 9(2), 3676–3684. <https://doi.org/10.36989/didaktik.v9i2.1220>
- Lutfiyah, N., Zakiah, L., & Sakmal, J. (2025). Analisis literatur: penerapan model games based learning berbasis digital dalam pembelajaran bahasa indonesia di sekolah dasar. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 10(3), 320–334.
- Marhadi, A., Darmansyah, & Fitria, Y. (2023). Keterampilan berpikir komputasi bagi siswa: tinjauan pustaka. *Jurnal Cendikia Pendidikan Dasar*, 1(2), 48–52.
- Marom, S., Lestari, S., & Rochmad, R. (2022). Pembentukan media pembelajaran berbasis computational thinking melalui pendekatan filsafat matematika. *Jurnal Ilmiah Pendidikan Matematika*, 7(1), 81–89. <https://doi.org/10.26877/jipmat.v7i1.11745>
- Maryam, M., Amrulloh, H., & Fadilah, L. (2025). Application of game based learning media to improve learning outcomes of mathematics subjects for flat shape material for grade 2 students at mis al yazier rawajitu utara. *Journal of Research in Islamic Education*, 7(2), 723–746. <https://doi.org/10.25217/jrie.v7i2.6741>
- Murti, R. D. K., Adina, M., & Aprinastuti, C. (2023). Penerapan computational thinking dalam pembelajaran matematika kelas 1 di sd negeri kentungan. *PEDADIDAKTIKA: Jurnal Ilmiah Pendidikan Guru Sekolah Dasar*, 10(2), 290–297. <https://doi.org/10.17509/pedadidaktika.v10i2.62882>
- Nakamura, K. W., Miyajima, K., Fujiwara, A., & Saito, K. (2023). Development of a web application for flowering phenology observation and its applicability to climate-related learning in elementary schools. *Cogent Education*, 10(2), 1–16. <https://doi.org/10.1080/2331186X.2023.2277045>
- Ningsih, T. Z., Aman, A., Nasrulloh, A., Ofianto, O., Erniwati, E., Asri, Z., Judijanto, L., & Firza, F. (2025). Enhancing communication and collaboration skills through discovery, cooperative and problem-based

- learning models in social studies education. *Cogent Education*, 12(1), 1–17. <https://doi.org/10.1080/2331186X.2025.2500110>
- Nor, M. J. M., & Nasri, N. M. (2025). Teacher views on the advantages and challenges of implementing game-based learning methods: a systematic literature review. *International Journal of Academic Research in Progressive Education and Development*, 14(2), 2120–2130. <https://doi.org/10.6007/IJARPED/v14-i2/25588>
- Nugraha, G. N. S., Tegeh, I. M., & Sudarma, I. K. (2019). Pengembangan multimedia interaktif matematika berorientasi kearifan lokal kelas 3 sekolah dasar negeri 1 paket agung. *Jurnal EDUTECH Universitas Pendidikan Ganesha*, 7(1), 12–22.
- Nuraini, F., Agustiani, N., & Mulyanti, Y. (2023). Analisis kemampuan berpikir komputasi ditinjau dari kemandirian belajar siswa kelas x smk. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 7(3), 3067–3082. <https://doi.org/10.31004/cendekia.v7i3.2672>
- Ogegbo, A. A., & Ramnarain, U. (2022). A systematic review of computational thinking in science classrooms. *Studies in Science Education*, 58(2), 203–230. <https://doi.org/10.1080/03057267.2021.1963580>
- Okasha, A. S. (2025). Non-digital game-based learning: A powerful tool to teach theories of architecture. *Journal of Engineering and Applied Science*, 72(1), 1–22. <https://doi.org/10.1186/s44147-025-00693-x>
- Palupi, S. R., & Suaedi, H. (2025). Model pembelajaran berbasis game-based learning untuk meningkatkan motivasi belajar dan memfasilitasi pembelajaran aktif siswa kelas xi sma negeri 5 jember pada materi unsur intrinsik cerita pendek. *Jurnal Pendidikan Tambusai*, 9(2), 13123–13131.
- Pan, Y., Adams, E. L., Ketterlin-Geller, L. R., Larson, E. C., & Clark, C. (2024). Enhancing middle school students' computational thinking competency through game-based learning. *Educational Technology Research and Development*, 72(6), 3391–3419. <https://doi.org/10.1007/s11423-024-10400-x>
- Pan, Z., Wang, K., Zhu, J., & Smith, M. (2026). Levels, stickers, and strategies: How gamified math tasks foster elementary student engagement. *Education and Information Technologies*, 31(6), 1687–1709. <https://doi.org/10.1007/s10639-025-13866-1>
- Pangestu, Y., Amri, M. A., & Putra, A. (2025). Pengaruh game based learning terhadap hasil belajar matematika siswa sd. *Jurnal Polinomial*, 4(2), 289–296.
- Paulina, C., Rokmanah, S., & Syachruraji, A. (2023). Efektivitas penggunaan model game based learning dalam pembelajaran matematika di sd. *Jurnal Pendidikan Tambusai*, 7(3), 31348–31354.

- Pratiwi, G. L., & Akbar, B. (2022). Pengaruh model problem based learning terhadap keterampilan computational thinking matematis siswa kelas iv sdn kebon bawang 03 jakarta. *Didaktik : Jurnal Ilmiah PGSD STKIP Subang*, 8(1), 375–385. <https://doi.org/10.36989/didaktik.v8i1.302>
- Rahma, F. L., Putri, I. A., Tanjung, M. S., & Siregar, R. (2024). Studi literatur: pentingnya berpikir komputasional dalam meningkatkan kemampuan pemecahan masalah matematis peserta didik. *Bilangan : Jurnal Ilmiah Matematika, Kebumian dan Angkasa*, 2(2), 23–33. <https://doi.org/10.62383/bilangan.v2i2.36>
- Rahmah, A., Suriansyah, A., Harsono, A. M. B., Prastitasari, H., & Sari, E. C. (2024). Implementasi media pembelajaran math playground terhadap motivasi belajar siswa. *Jurnal Teknologi Pendidikan Dan Pembelajaran (JTPP)*, 02(02), 698–703.
- Rahmatyas, S. (2024). Pengaruh penggunaan media digital interaktif terhadap pemahaman konsep matematika siswa. *DIKMAT: Jurnal Pendidikan Matematika*, 05(01), 19–23.
- Rizki, I. A., & Yates, A. (2026). Factors affecting the implementation of digital game-based learning in high school science education: A systematic review (2014–2024). *Educational Media International*, 1–21. <https://doi.org/10.1080/09523987.2026.2683334>
- Rottenhofer, M., Kuka, L., Leitner, S., & Sabitzer, S. (2022). Using computational thinking to facilitate language learning: a survey of students' strategy use in austrian secondary schools. *IAFOR Journal of Education*, 10(2), 51–70. <https://doi.org/10.22492/ije.10.2.03>
- Russo, J. A., Roche, A., Russo, T., & Kalogeropoulos, P. (2025). Examining primary school educators' preferences for using digital versus non-digital games to support mathematics instruction. *International Journal of Mathematical Education in Science and Technology*, 56(9), 1778–1803. <https://doi.org/10.1080/0020739X.2024.2361699>
- Salsabila, A. & Yahfizham Yahfizham. (2024). Studi literatur: analisis berpikir komputasi pada guru dan siswa dalam konteks implementasi kurikulum merdeka. *Bilangan : Jurnal Ilmiah Matematika, Kebumian dan Angkasa*, 2(3), 129–141. <https://doi.org/10.62383/bilangan.v2i3.72>
- Scholes, L., Rowe, L., Mills, K. A., Gutierrez, A., & Pink, E. (2024). Video gaming and digital competence among elementary school students. *Learning, Media and Technology*, 49(2), 200–215. <https://doi.org/10.1080/17439884.2022.2156537>
- Sun, L., Kangas, M., & Ruokamo, H. (2024). Game-based features in intelligent game-based learning environments: A systematic literature review. *Interactive Learning Environments*, 32(7), 3431–3447. <https://doi.org/10.1080/10494820.2023.2179638>

- Supardi, R., Setialaksana, W., Anwar, A. R. A., & Abeng, T. (2026). Pelatihan computational thinking pada anak sekolah dasar (sd). *Jurnal Pengabdian Masyarakat Bangsa*, 3(11), 6620–6625.
- Thai, K.-P., Bang, H. J., & Li, L. (2022). Accelerating early math learning with research-based personalized learning games: A cluster randomized controlled trial. *Journal of Research on Educational Effectiveness*, 15(1), 28–51. <https://doi.org/10.1080/19345747.2021.1969710>
- Wahyuning, S. (2022). Pembelajaran ipa interaktif dengan game based learning. *Jurnal Sains Edukatika Indonesia (JSEI)*, 4(2), 1–5.
- Weinhandl, R., Andic, B., Baldinger, S., Mayrhofer, J., & Helm, C. (2025). The icap model in the context of employing digital technologies for teaching mathematics: an analysis of teachers' strategies to stimulate students' cognitive engagement moderated by age, gender and experience. *Computers in the Schools*, 1–25. <https://doi.org/10.1080/07380569.2025.2544051>
- Wibawa, A. C. P., Mumtaziah, H. Q., Sholaihah, L. A., & Hikmawan, R. (2020). Game-based learning (gbl) sebagai inovasi dan solusi percepatan adaptasi belajar pada masa new normal. *INTEGRATED (Journal of Information Technology and Vocational Education)*, 2(1), 49–54. <https://doi.org/10.17509/integrated.v3i1.32729>
- Widiana, I. W. (2022). Game based learning dan dampaknya terhadap peningkatan minat belajar dan pemahaman konsep siswa dalam pembelajaran sains di sekolah dasar. *Jurnal Edutech Undiksha*, 10(1), 1–10.
- Yustina, A. F., & Yahfizham, Y. (2023). Game based learning matematika dengan metode squid game dan among us. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, 7(1), 615–630. <https://doi.org/10.31004/cendekia.v7i1.1946>
- Yusup, F. (2018). Uji validitas dan reliabilitas instrumen penelitian kuantitatif. *Jurnal Tarbiyah : Jurnal Ilmiah Kependidikan*, 7(1), 17–23. <https://doi.org/10.18592/tarbiyah.v7i1.2100>