

DAFTAR PUSTAKA

- Adeoye, M. A., Wirawan, K. A. S. I., Pradnyani, M. S. S., & Septiarini, N. I. (2024). Revolutionizing Education: Unleashing the Power of the ADDIE Model for Effective Teaching and Learning. *JPI (Jurnal Pendidikan Indonesia)*, 13(1), 202–209. <https://doi.org/10.23887/jpiundiksha.v13i1.68624>
- Allen, M. S., Robson, D. A., & Iliescu, D. (2023). Face Validity. *European Journal of Psychological Assessment*, 39(3), 153–156. <https://doi.org/10.1027/1015-5759/a000777>
- Amran, A., Suherman, W. S., Graha, A. S., Auliana, R., Riyana, A., Astuti, A. T., Utami, D. Y., Pratama, K. W., Sonjaya, A. R., Permadi, A. A., Arifin, Z., Karakauki, M., Ali, S. K. S., Trisnadi, R. A., Asmuddin, A., & Utami, D. (2023). Desarrollo de medios de aprendizaje para un gran juego de pelota basado en el aprendizaje en línea para estudiantes de secundaria vocacional de clase XI: viabilidad y eficacia (Developing Learning Media for an Online Learning-Based Big Ball Game at Class XI Vocational High School Students: Feasibility and Efficacy). *Retos*, 50, 724–736. <https://doi.org/10.47197/retos.v50.99235>
- Andika, W. D., Berliani, R., Sumarni, S., Nusantara, D. S., Cahyani, F. I., Soleha, D. A., Felisha, M., & Maharani. (2024). ESTABICAH: Relay of Cacah Numbers Games for Mathematics Skills in Early Elementary School. *Mimbar PGSD Undiksha*, 12(2), 302–311. <https://doi.org/10.23887/jjpgsd.v12i2.71599>
- Andrade, C. (2019). The P Value and Statistical Significance: Misunderstandings, Explanations, Challenges, and Alternatives. *Indian Journal of Psychological Medicine*, 41(3), 210–215. https://doi.org/10.4103/IJPSYM.IJPSYM_193_19
- Andrini, V. S., & Pratama, H. (2021). Implementasi Quiz Interaktif dengan Software Mentimeter dalam Meningkatkan Hasil Belajar. *Mimbar Ilmu*, 26(2), 287. <https://doi.org/10.23887/mi.v26i2.36923>
- Arifannisa, & dkk. (2023). *Sumber dan Pengembangan Media Pembelajaran (Teori dan Penerapan)*. Sonpedia Publishing Indonesia.
- Aulia, E. T., & Prahmana, R. C. I. (2022). Developing Interactive E-module Based on Realistic Mathematics Education Approach and Mathematical Literacy Ability. *Jurnal Elemen*, 8(1), 231–249. <https://doi.org/10.29408/jel.v8i1.4569>
- Besekar, S., Jogdand, S., & Naqvi, W. (2024). Navigating Sample Size Determination in Educational Research: A Rapid Review Unveiling Strategies, Challenges, and Recommendations. *F1000Research*, 12, 1291. <https://doi.org/10.12688/f1000research.141173.2>
- Borden, V., & Torstrick, R. (2025). Strategic Academic Research and Development: Definitions and Defining Case. *Education Sciences*, 15(3), 276. <https://doi.org/10.3390/educsci15030276>
- Branch, R. M. (2009). *Instructional Design: The ADDIE Approach*. Springer Science Business Media.
- Brown, B. (2019). Rational Number Understanding: The Big Picture, Not the Essence. *South African Journal of Childhood Education*, 9(1). <https://doi.org/10.4102/sajce.v9i1.561>

- Chirove, M., & Ogbonnaya, U. I. (2021). The Relationship between Grade 11 Learners' Procedural and Conceptual Knowledge of Algebra. *JRAMathEdu (Journal of Research and Advances in Mathematics Education)*, 368–387. <https://doi.org/10.23917/jramathedu.v6i4.14785>
- Dewanti, S. S., Rahmawati, & Sumardi. (2025). Problem-Based Learning with Manipulative Media: Enhancing Elementary Students' Conceptual Understanding in Area and Volume. *Jurnal Ilmiah Sekolah Dasar*, 8(3), 487–499. <https://doi.org/10.23887/jisd.v8i3.80221>
- Ding, Y., & Toran, H. (2025). Application of ADDIE as an Instructional Design Model in the Teaching and Rehabilitation of Children with Autism: A Review. *International Journal of Learning, Teaching and Educational Research*, 24(1), 87–115. <https://doi.org/10.26803/ijlter.24.1.5>
- Fadhilla, R. N., & Azhari, S. (2024). Analisis Perbandingan Penggunaan Media Pembelajaran Digital Powerpoint dan Queizzi dalam Meningkatkan Interaksi Belajar Siswa dalam Pembelajaran Bahasa Arab. *Jurnal Ihtimam*, 7(02), 39–49. <https://doi.org/10.36668/jih.v7i02.1010>
- Faradina, R., Kurniawati, D., Oktavia, B., & Alizar. (2025). Development of an Acid–Base Module Based on Problem-Based Learning Integrated with TPACK to Improve Senior High School Students' Learning Outcomes. *Jurnal Penelitian Pendidikan IPA*, 11(9), 871–878. <https://doi.org/10.29303/jppipa.v11i9.12535>
- Febriyanti, R., Mustadi, A., & Jerusalem, M. A. (2021). Students' Learning Difficulties in Mathematics: How Do Teachers Diagnose and How Do Teachers Solve Them? *Jurnal Pendidikan Matematika*, 15(1), 23–36. <https://doi.org/10.22342/jpm.15.1.10564.23-36>
- González-Estrada, E., & Cosmes, W. (2019). Shapiro–Wilk Test for Skew Normal Distributions Based on Data Transformations. *Journal of Statistical Computation and Simulation*, 89(17), 3258–3272. <https://doi.org/10.1080/00949655.2019.1658763>
- González-Forte, J. M., Fernández, C., Van Hoof, J., & Van Dooren, W. (2022). Profiles in Understanding Operations with Rational Numbers. *Mathematical Thinking and Learning*, 24(3), 230–247. <https://doi.org/10.1080/10986065.2021.1882287>
- Hada, K. L. (2023). *Board Game “Magic Shop” Sebagai Media dalam Setting Pembelajaran Problem Based Learning Untuk terbatasnya kemampuan Pemecahan Masalah Siswa pada Materi Aritmatika Sosial Kelas VII di MTs Negeri 2 Kota Blitar*. IAIN Kediri.
- Hake, R. R. (1998). Interactive-Engagement Versus Traditional Methods: A Six-Thousand-Student Survey of Mechanics Test Data for Introductory Physics Courses. *American Journal of Physics*, 66(1), 64–74. <https://doi.org/10.1119/1.18809>
- Hidayat, F., & Nizar, M. (2021). Model ADDIE (Analisis, Desain, Pengembangan, Implementasi dan Evaluasi) Dalam Pembelajaran Pendidikan Agama Islam. *Jurnal Inovasi Pendidikan Agama Islam (JIPAI)*, 1(1), 28–38. <https://doi.org/10.15575/jipai.v1i1.11042>
- Ichsan, I. Z., Dewi, A. K., Hermawati, F. M., & Iriani, E. (2018). Pembelajaran IPA dan Lingkungan: Analisis Kebutuhan Media Pembelajaran pada SD, SMP, SMA di Tambun Selatan, Bekasi. *JIPVA (Jurnal Pendidikan IPA Veteran)*, 2(2), 131. <https://doi.org/10.31331/jipva.v2i2.682>

- Jääskä, E., & Aaltonen, K. (2022). Teachers' Experiences of Using Game-Based Learning Methods in Project Management Higher Education. *Project Leadership and Society*, 3, 100041. <https://doi.org/10.1016/j.plas.2022.100041>
- Jayadi, Y. D., Lestari, F., Tejamaya, M., Prasetyo, S., Fikawati, S., -, S., Astono, S., Mayawati, H., Noor, I. H., Sulistiyorini, D., & Modjo, R. (2026). Impact of Occupational Health and Safety Education Intervention on the Knowledge, Attitudes, and Practices Among Palm Oil Plantation Workers in Indonesia. *Journal of Public Health and Development*, 24(1), 215–228. <https://doi.org/10.55131/jphd/2026/240116>
- Jhang, J.-N., Lin, Y.-C., & Lin, Y.-T. (2025). A Study on the Effectiveness of a Hybrid Digital-Physical Board Game Incorporating the Sustainable Development Goals in Elementary School Sustainability Education. *Sustainability*, 17(15), 6775. <https://doi.org/10.3390/su17156775>
- Judijanto, L., Muhammadiyah, M., Utami, R. N., Suhirman, L., Laka, L., Boari, Y., Lembang, S. T., Wattimena, F. Y., Astriawati, N., Laksono, R. D., & Yunus, M. (2024). *Metodologi Research and Development: Teori dan Penerapan Metodologi RnD*. PT. Sonpedia Publishing Indonesia.
- Kamid, & Anwar, K. (2025). Enhancing Learning Experiences and Outcomes Using Virtual Media for Children with Autism Spectrum Disorders. *Jurnal Pendidikan Matematika*, 19(2), 197–216. <https://doi.org/10.22342/mej.v19i2.pp197-216>
- Karisma, C. D., Yuniawatika, & Ahdhianto, E. (2023). Analisis Kebutuhan Media Pembelajaran Matematika Bangun Ruang Pada Siswa Kelas V Sekolah Dasar. *Jurnal Pemikiran dan Pengembangan Sekolah Dasar (JP2SD)*, 11(2), 265–276. <https://doi.org/10.22219/jp2sd.v11i2.28175>
- Kemendikbud RI. (2025). *Panduan Pembelajaran dan Asesmen Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, dan Jenjang Pendidikan Menengah Edisi Revisi Tahun 2025*. Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia.
- Kemendikbudristek. (2022). *Matematika SMP/MTs Kelas VII*. Pusat Perbukuan Badan Standar, Kurikulum, dan Asesmen Pendidikan. <https://buku.kemdikbud.go.id>
- Laari, L. (2025). Inductive-Deductive Qualitative Data Analysis Logic in Health Sciences Research: A Framework for Analysing Qualitative Data. *International Journal of Qualitative Methods*, 24. <https://doi.org/10.1177/16094069251381706>
- Ma'firah, M., & Zainul, R. (2022). Effectiveness of Guided Discovery-Based Worksheets to Improve Learning Outcomes in Acid-Base Concept. *Jurnal Pendidikan MIPA*, 23(4), 1347–1357. <https://doi.org/10.23960/jpmipa/v23i4.pp1347-1357>
- Marpanaji, E., Mahali, M. I., & Putra, R. A. S. (2018). Survey on How to Select and Develop Learning Media Conducted by Teacher Professional Education Participants. *Journal of Physics: Conference Series*, 1140, 012014. <https://doi.org/10.1088/1742-6596/1140/1/012014>
- Masyihtoh S., R., Suparni, & Amir, A. (2025). Pengembangan Media Pembelajaran Flipbook Berbantuan Canva Untuk Meningkatkan Kemampuan Literasi Matematika Siswa Kelas VII di MTs 1 Tapanuli Selatan. *EKSAKTA : Jurnal Penelitian dan Pembelajaran MIPA*.

- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive Statistics and Normality Tests for Statistical Data. *Annals of Cardiac Anaesthesia*, 22(1), 67–72. https://doi.org/10.4103/aca.ACA_157_18
- Mwita, K. (2022). Factors to Consider When Choosing Data Collection Methods. *International Journal of Research in Business and Social Science (2147- 4478)*, 11(5), 532–538. <https://doi.org/10.20525/ijrbs.v11i5.1842>
- Nainggolan, B. V. H., & Listiani, T. (2024). Pentingnya Pemberian Umpan Balik untuk Memperbaiki Kesalahan Siswa dalam Menyelesaikan Soal Matematika. *Plusminus: Jurnal Pendidikan Matematika*, 4(1), 55–68. <https://doi.org/10.31980/plusminus.v4i1.1460>
- Nanda, A., & Rani, R. (2025). Exploring the Proficiency of Basic Mathematical Facts among Primary Mathematics Teachers. *Asian Journal for Mathematics Education*, 4(1), 31–55. <https://doi.org/10.1177/27527263241307975>
- Nieveen, N. (1999). Prototyping to Reach Product Quality. Dalam *Design Approaches and Tools in Education and Training* (hlm. 125–135). Springer Netherlands. https://doi.org/10.1007/978-94-011-4255-7_10
- Nilsen, P., Kirk, J. W., Gunnarsson, K. U., & Thomas, K. (2025). Tempering Implementation Optimism: Distinguishing between Efficacy and Effectiveness in Implementation Research. *Implementation Science Communications*, 6(1), 90. <https://doi.org/10.1186/s43058-025-00781-2>
- Ningtyas, Y. D. W. K. (2019). *Media Pembelajaran Matematika (Dilengkapi Contoh Alat Peraga Manipulatif Untuk Tingkat SMP dan SMA)*. Mahameru Press.
- Pagarra, H., Syawaluddin, A., Krismanto, W., & Sayidiman. (2022). *Media Pembelajaran*. Badan Penerbit UNM.
- Pamungkas, M. D., Waluya, S. B., Mariani, S., Isnarto, I., Rahmawati, F., Noor Kholid, M., & Laksmiwati, P. A. (2024). Enhancing Complex Problem-Solving Skills through STEM-Based Spatial Geometry E-Modules. *Qubahan Academic Journal*, 4(3), 541–556. <https://doi.org/10.48161/qaj.v4n3a794>
- Poskart, R. (2014). A Definition of the Concept of Economic Effectiveness. *Central Eastern European Journal of Management and Economics*, 2(3), 179–187.
- Purvis, A., & Beckingham, S. (2024). A Decade of Social Media for Learning: A Systematic Review. *Journal of University Teaching and Learning Practice*, 21(05). <https://doi.org/10.53761/vvvccy83>
- Rachmawati, D. A., Erita, Taihuttu, S. M., Lekitoo, J. N., Annisa, Sarmidi, Marzuki, Permana, R., Sa'diyah, H., Mindaudah, & Yulianti, A. (2025). *Media Pembelajaran*.
- Ramachandran, K. M., & Tsokos, C. P. (2021). Nonparametric Statistics. Dalam *Mathematical Statistics with Applications in R* (hlm. 491–530). Elsevier. <https://doi.org/10.1016/B978-0-12-817815-7.00012-9>
- Retnawati, H. (2016). *Analisis Kuantitatif Instrumen Penelitian (Panduan Peneliti, Mahasiswa dan Psikometrian)*. Parama Publishing.

- Rochaendi, E., Fuadi, A., & Sholihah, D. A. (2024). *Pengembangan Media Pembelajaran*. ITERA Press.
- Sagita, L. (2024). *Pendesainan Lingkungan Belajar Literasi Finansial pada Konten Bilangan Bagi Guru Sekolah Menengah Pertama*. Universitas Sriwijaya.
- Salmia, Sukmawati, & Sudarmin. (2023). Development of Quality Instruments and Data Collection Techniques. *Jurnal Pendidikan dan Pengajaran Guru Sekolah Dasar (JPPGuseda)*, 6(1), 119–124. <https://doi.org/10.55215/jppguseda.v6i1.7527>
- Sari, D. R. (2025). *Pengembangan Multimedia Interaktif Berbasis Game Based Learning (GBL) untuk Meningkatkan Motivasi Belajar Statistika di MTsN 2 Kota Kediri Kelas VIII*. IAIN Kediri.
- Schalock, R. L. (2002). Effectiveness Evaluation. Dalam *Outcome-Based Evaluation* (hlm. 41–64). Springer US. https://doi.org/10.1007/0-306-47620-7_3
- Sinaga, C., Amin Fauzi, KMS., & Dewi, I. (2019). The Development Instrument Test of PISA and Student Worksheet with Shape and Space Content Using RME Approach to Improve the Mathematic Representation Ability of High School Students. *American Journal of Educational Research*, 7(12), 957–965. <https://doi.org/10.12691/education-7-12-10>
- Slater, P., & Hasson, F. (2025). Quantitative Data Quality Assurance, Analysis and Presentation. *Journal of psychiatric and mental health nursing*, 32(3), 723–727. <https://doi.org/10.1111/jpm.13143>
- Smaldino, S. E. ., Lowther, D. L. ., Mims, Clif., & Russell, J. D. . (2019). *Instructional Technology and Media for Learning*. Pearson Education, Inc.
- Sukazi, N. A. D., Nisa, K., & Angga, P. D. (2025). “Tegodek-Godek dait Tetuntel-Tuntel”: Development of Digital Books to Strengthen Character Education for Elementary School Children. *Journal of General Education and Humanities*, 4(2), 549–560. <https://doi.org/10.58421/gehu.v4i2.449>
- Tsagris, M., & Pandis, N. (2021). Normality Test: Is It Really Necessary? *American Journal of Orthodontics and Dentofacial Orthopedics*, 159(4), 548–549. <https://doi.org/10.1016/j.ajodo.2021.01.003>
- Ulusoy, Ç. A., & Sahiner, Y. (2023). Analysis of Different Rational Number Definitions Used in the Literature. *Ankara Universitesi Egitim Bilimleri Fakultesi Dergisi*, 123–172. <https://doi.org/10.30964/auebfd.1150640>
- Usman, P. M., & Puspapratwi, D. (2024). *Matematika Terapan*.
- Welsch, D., & Neuhäuser, M. (2025). Wilcoxon-Signed-Rank Test. Dalam *International Encyclopedia of Statistical Science* (hlm. 2898–2900). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-69359-9_722
- Wulandari, U., Syarifuddin, Chotimah, U., Sumarni, S., & Yanzi, H. (2024). Analysis of Pancasila Students Profile Media Needs for History Learning at Senior High School Number 1 in Indralaya. *Criksetra: Jurnal Pendidikan Sejarah*, 13(2), 141–154. <https://doi.org/10.36706/jc.v13i2.15>

- Yusoff, M. S. B. (2019). ABC of Content Validation and Content Validity Index Calculation. *Education in Medicine Journal*, 11(2), 49–54. <https://doi.org/10.21315/eimj2019.11.2.6>
- Zamsiswaya, Z., Syawaluddin, S., & Syahrizul, S. (2024). Pengembangan Model ADDIE (Analisis, Desain, Pengembangan, Implementasi, Evaluasi). *Jurnal Pendidikan Tambusai*.
- Zsoldos-Marchis, L., & Juhász, A. (2020). Board-Games in the Primary Classroom: Teachers' Practice and Opinion. *INTED2020 Proceedings*, 7573–7582. <https://doi.org/10.21125/inted.2020.2041>