

DAFTAR PUSTAKA

- Abimbade, A., & Udousoro, U. J. (1997). The place of computer-assisted instruction in mathematics education. *Proceeding of Ajumogbobia Memoria Conference 1997 (40th Annual Conference of STAN) UNESCO*, 238-243.
- Abubakar, M. N., Hassan, A. A., Gimba, R. W., & Ahmed, M. A. (2023). Effects of Realistic Mathematics Education and Mathematical Modelling Approaches on Geometric Achievement and Attitude Among Senior Secondary School Student in North Central, Nigeria. *Federal University of Technology, Minna*, 561-569.
- Adjetey, A. B., & Endurance, T. (2024). Challenges in Teaching and Learning Analytical Geometry: A Review of Key Issues, Misconceptions and Proposed Solutions.
- Arikunto, & Suharsimi. (2009). Dasar-dasar Evaluasi Pendidikan. *Jakarta Bumi Aksara*.
- Asrar, A., Arnawa, M., & Permana, D. (2023). Pengembangan Lembar Kerja Peserta Didik Elektronik Berbasis Problem Based Learning dalam Meningkatkan Kemampuan Pemecahan Masalah Matematis Peserta Didik Kelas X SMA Negeri 1 Panti. *Jurnal Edukasi Matematika dan Sains*, 182-190. Retrieved from <https://doi.org/10.25273/jems.v11i1.14361>
- Azwar, S. (2005). *Dasar-Dasar Psikometri*. Yogyakarta: Pustaka Belajar.
- Batterton, K. A., & Hale, K. N. (2017). The Likert Scale What It Is and How to use It. *Phalanx*, 50(2), 32-39.
- Bellis, M., & Leuci, a. (2022). Using Manim to Create Instructional Videos for Introductory Physics Student. *APS April Meeting Abstracts, 2022*, F01-031.
- Brown, H. D. (2001). *Teaching by Principles: An Interactive Approach to Language Pedagogy (2nd ed.)*. Longman.

- Citrawathi, D. M., Adnyana, P. B., & Santiasa, M. P. (2016). Analisis Kebutuhan untuk Pengembangan Modul Inkuiri Berbasis Pertanyaan (MIBP) di SMP. *JPI (Jurnal Pendidikan Indonesia)*, 5(1), 1-11. Retrieved from <https://doi.org/10.23887/jpi-undiksha.v5i1.8289>
- Coluci, V. R. (2021). Animations of Concepts of the Error Theory Using Manim/Python. *Revista Brasileira de Ensino de Fisica*, 44.
- Costa. (2014). *Choosing The Right Assessment Method Pre-Test/Post-Test Evaluation*. Boston University.
- Devi, A. R. (2024). Hubungan Pemahaman Konsep dengan Kemampuan Representasi Matematis Peserta Didik Kelas V SD Negeri 2 Way Huwi (Doctoral dissertation, UIN RADEN INTAN LAMPUNG).
- Dewi, M. S. (2022). Student and School Factor's Influencing the Mathematics Achievement: An HLM Analysis of Indonesian Data in TIMSS 2015. *TAZKIYA Journal of Psychology*. doi:10.15408/tazkiya.v10i1.24890
- Febrianti, N., Sariyasa, & Astawa, I. (2024). Pengembangan E-Modul Interaktif Materi Bangun Ruang Sisi Datar Berbasis Problem-Based Learning untuk Meningkatkan Kemampuan Berpikir Kritis Siswa. *Jurnal Pendidikan dan Pembelajaran Matematika Indonesia*, 13. doi:<https://doi.org/10.23887/jppmi.v13i1.3162>
- Gambari, A. I., Falode, O. C., & Adegbenro, D. A. (2014). Effectiveness of Computer Animation and Geometrical Instructional Model on Mathematics Achievement and Retention Among Junior Secondary School Students. *European Journal of Science and Mathematics Education*, 2, 127-146. Retrieved from <http://repository.futminna.edu.ng:8080/jspui/handle/123456789/2928>
- Hake, R. R. (1998). *Analizing Change/Gain Score*. USA: Dept: Of Physics, Indiana University.
- Hakim, A., Liliyasi, & Kadarohman, A. (2012). Student Concept Understanding of

Natural Products Chemistry in Primary and Secondary Metabolites Using the Data Collecting Technique of Modified CRI. *International Online Journal of Educational Sciences*, 544-553.

Hamalik, O. (1994). *Media Pendidikan*. Bandung: PT. Citra Aditya Bakti.

Hamalik, O. (2011). *Proses Belajar Mengajar*. Jakarta: Bumi Aksara.

Hamzah, A. M. (2023). Trends in International Mathematics and Science Study (TIMSS) as A Measurement for Students Mathematics Assessment Development. *12 Waiheru*, 9(2), 189-196.

Hanipah, S. (2023). Analisis Kurikulum Merdeka Belajar dalam Memfasilitasi Pembelajaran Abad Ke-21 pada Siswa Menengah Atas. *Jurnal Bintang Pendidikan Indonesia (JUBPI)*, 1(2), 264-275.

Haynes, S. N., Richard, D. C., & Kubany, E. S. (1995). Content Validity in Psychological Assessment: A Functional Approach to Concepts and Methods. *Psychological Assessment*, 7, 238-247.

Hidayana, A. F. (2022). Pengaruh Motivasi Belajar Terhadap Kemampuan Pemahaman Konsep Matematika Siswa Kelas IV MI Nurul Ulum Madiun. *Jurnal Paradigma*, 14(01), 195-210.

Karacop, A., & Doymus, K. (2013, April). Effects of Jigsaw Cooperative Learning and Animation Techniques on Students Understanding of Chemical Bonding and Their Conceptions of the Particulate Nature of Matter. *Journal of Science Education and Technology*, 22. doi:10.1007/s10956-012-9385-9

Ke, F., Shan, H., Ching, Y.-H., & Dwyer, F. (2006). Effects of Animation on Multi-Level Learning Outcomes for Learners with Different Characteristic: A Meta-Analytic Assessment and Interpretation. *Journal of Visual Literacy*, 26, 15-40. doi:10.1080/23796529.2006.11674630

Kurniawan, & Deny. (2015). Development of Interactive Modules Using Learning Content Development System on Dynamic Electrical Materials. *Journal of*

Physics Learning.

- Laili. (2019). The Effectiveness of Development of Project-Based Learning E-Modules in Electrical Motor Installation Subjects. *Scientific Journal of Education and Learning*.
- Lee, W. W., & Owens, D. L. (2004). *Mutimedia-Based Instructional Design*. San Fransisco: Pfeiffer.
- Lynn, M. (1986). Determination and Quantification of Content Validity. *Nursing Research*, 35(6), 382-385.
- Maharani, A., Intan, B., & Susilo, S. T. (2021). Analisis User Experience Pada Website SMK Negeri Tugumulyo Berbasis User Experience Questionnaire. *JUSIM (Jurnal Sist. Inf. Musirawas)*, 6, 169-177. doi:10.32767/jusim.v6i2.1479
- Manim Community. (2023). Retrieved from Manim - A community maintained Pyhon library for creating mathematical animations: <https://www.manim.community/>
- Mardapi, D. (2008). *Teknik Penyusunan Instrumen Tes dan Non Tes*. Yogyakarta: Mitra Cendikia Offset.
- Markovic, M., & Kastelan, M. (2024). Demonstrating the Potential of Visualitation in Education with the Manim Python Library: Examples from Algorithms and Data Structures. In *2024 47th MIPRO ICT and Electronics Convention (MIPRO)*, 625-629.
- Marlena, N., Patrikha, F., & Dwijayanti, R. (2022, 08). Electronic Modules in an Indonesia Higher Education: Conceptualisation, Development and Application. *AH-ISHLAH: Jurnal Pendidikan*, 14, 3943-3954. doi:10.35445/alishlah.v14i3.1473
- Ma'ruf, A. S. (2024). Analysis of Physics Misconceptions Elasticity and Hooke's Law in High School Student with Certainly of Response Index Method.

- Mayer, R. E. (2005). *The Cambridge Handbook of Multimedia Learning*. Cambridge University Press.
- Mernisa, M., & Djukri. (2018). The Influences of Outdoor Learning Process (OLP) on Conceptual Understanding and Enviromental Concern: Implementations on the Ecosystem Subject. *Journal of Pyhsics: Conference Series*, 1097(1-7).
- Moreno, R., & Mayer, R. E. (2007). Interactive Multimodal Learning Enviroments. *Educationa Psychology Review*, 19(3), 309-326. doi:<https://doi.org/10.1007/s10648-007-9047-2>
- Mulyantiningsih, E. (2011). *Metode Penelitian Terapan Bidang Pendidikan*. Bandung: Alfabeta.
- Mulyasa. (2005). *Menjadi Guru Profesional*. Bandung: Remaja Rosdakarya.
- Mulyono, B., & Hapizah, H. (2018). Pemahaman Konsep Dalam Pembelajaran Matematika. *Kalamatika: Jurnal Pendidikan Matematika*, 3(2), 103-122.
- NCTM. (2000). *Mathematics Assesment: A Practical Handbook for Grades 6-8*. USA: LCC.
- Nesbit, J., Belfer, K., & Leacock, T. (2007). *Learning Object Review Instrument (LORI) User Manual*.
- Ngalim, P. (2006). *Psikologi Pendidikan*. Bandung: Remaja Rosdakarya.
- Norstrand, O. J. (2024). Exploring the Efficacy of Python-Based Visualizations for Enhanced Learning Outcome and Engagement (Master's Thesis).
- Nugraha, & Ikmanda. (2023, 12). Unearthing the Academic Time Capsule: Delving into the Evolution of Science Education Among Indonesian Students. *Journal of Science Learning*, 6, 465-476. doi:10.17509/jsl.v6i4.60828
- Nurhasanah, Y., Khairunisa, Y., & Kuswoyo, D. (2022). *Develompment of Interactive Digital Learning Multimedia Applications as Independent*

Learning Module in 2-Dimensional Game Programming Courses (Vol. 24(3)). JTP-Jurnal Teknologi Pendidikan.

Oscarson, A. D. (1989). Self-assessment of language proficiency: Rationale and applications. *Language Testing*, 6(1), 1-13.

Presmeg, N. (2006). Research on Visualization in Learning and Teaching Mathematics.

Priyanto, N., Arnawa, M., & Bakar, N. (2021, January). The Develop of Mathematics Learning Device Based On Problem Based Learning and Geogebra-Assisted for Junior High School Students. *Journal of Physics: Conferences Series*, 1742, 012004. doi:10.1088/1742-6596/1742/1/012004

Purwanto, N. (2009). *Prinsip-prinsip Teknik Evaluasi Pengajaran*. Bandung: Remaja Rosdakarya.

Putri, M., & Padma, M. (2012). Pemahaman Konsep Matematika pada Materi Turunan Melalui Pembelajaran Teknik ProbingI. *Jurnal Pendidikan Matematika, Part 2, 1*, 68-72.

Rahmi, L. (2018). Perancangan E-Module Perakitan dan Instalasi Personal Komputer Sebagai Media Pembelajaran Siswa SMK. *21(1)*, 105-111. Retrieved from <http://ecampus.iainbatusangkar.ac.id/ojs/index.php/takdib/index>. ISSN 2580-2771

Ramadhani, F. F. (2016). Efektivitas Penggunaan Modul Elektronik Interaktif Terhadap Kemandirian Belajar Peserta Pelatihan Mata Latih Bahasa Jepang Di Balai Latihan Tenaga Kerja Luar Negeri Provinsi Jawa Barat.

Rau, M. A. (2017). Conditions for the effectiveness of multiple visual representations in enhancing STEM learning. *Educational Psychology Review*, 29, 717-761.

Rolheiser, C. (1996). Self-evaluation...Helping students get better at it! . *Ajax, ON*:

Visuntronx.

- Rolheiser, C., & Ross, J. (2001). Student self evaluation: What research says and what practice shows. Retrieved from http://www.cdl.org/resource-library/articles/self_eval.php
- Saabith, A. S., Vinothraj, T., & Fareez, M. (2020). Popular Python Libraries and Their Application Domains. *International Journal of Advance Engineering and Research Development*, 7(11).
- Sagala, & Syaiful. (2010). Supervisi Pembelajaran dalam Profesi Pendidikan. *Bandung: Alfabeta.*
- Salsabila, Z., Putri, V. E., Salsabila, R., Wismanto, W., & Pahrudin, P. (2024). Analisis Pengembangan Media Pembelajaran Sederhana Pada Sekolah Dasar. *CENDEKIA: Jurnal Ilmu Sosial, Bahasa dan Pendidikan*, 4(2), 26-36.
- Sanchez Rull, M. (2023). Making Didactic Videos for Mathematics Contents at the GETI Degree (Bachelor's Thesis, Universitat Politècnica de Catalunya).
- Sari, F. R. (2018). Penerapan Pembelajaran Example non Example Berbantu Video Animasi Matematika untuk Meningkatkan Pemahaman Konsep Siswa. *EKUIVALEN Pendidikan Matematika*, 31(1), 1-3.
- Savitri, M. D., Sudiarta, I. G., & Sariyasa. (2022). Pengaruh MEAs Berbantuan GeoGebra Terhadap Kemampuan Pemahaman Konsep dan Disposisi Matematika Siswa. *Jurnal Ilmiah Pendidikan Matematika*. doi:<https://doi.org/10.25273/jipm.v10i2.9240>
- Schrepp, M. (2023). User Experience Questionnaire Handbook. doi:10.13140/RG.2.1.2815.0245
- So, S., Schwerin, B., Rowlands, D., Espinosa, H., Tadj, T., & Busch, A. (2023, December). A pilot study into developing animations for electrical and electronic engineering curriculum. *Australasian Association for*

Engineering Education Conference. Retrieved from https://www.aace2023.org/fullpapers/AAEE_2023_final_paper_175.pdf

Suarsana, I. M., & Mahayukti, G. A. (2013). Pengembangan E-Modul Berorientasi Pemecahan Masalah untuk Meningkatkan Keterampilan Berpikir Kritis Mahasiswa. *JPI (Jurnal Pendidikan Indonesia)*, 2(2).

Sudjana, N., & Rivai, A. (2011). Meida Pengajaran. *Sinar Baru Algensindo*.

Sugianto, D., Abdullah, A. G., Elvyanti, S., & Muladi, Y. (2017). Modul Virtual: Multimedia Flipbook Dasar Teknik Digital. *Innovation of Vocational Technology Education*, 101-116.

Sugiyono. (2014). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.

Susanto, & Ahmad. (2013). Teori Belajar dan Pembelajaran di Sekolah Dasar. *Jakarta: Prenadamedia Group*.

Tegeh, I. M., & Kirna, I. M. (2013). *Pengembangan Bahan Ajar Metode Penelitian Pendidikan Dengan Addie Model*.

ten Voorde, A., Piroi, M., & Bos, R. (2023). Dynamic Visualization in Animated Mathematics Videos I: a Classification of Didactic Roles.

Tran, T., Nguyen, T. T., & Nguyen, B. N. (2024). Analysis of Factors Influencing Poor Performance in Mathematics of High School Students: Case Study in Vietnam. *Proceedings of the 15th International Conference on Society and Information Technologies: ICSIT 2024*, 122-129. doi:10.54808/ICSIT2024.01.122

Trouche, L., Gueudet, G., & Pepin, B. (2019). *The "Resource" approach to mathematics education*. doi:<https://doi.org/10.1007/978-3-030-20393-1>

Tversky, B., Morrison, J. B., & Betrancourt, M. (2002). Animation: Can it facilitate? *International Journal of Human-Computer Studies*, 57(4), 247-262. doi:<https://doi.org/10.1006/ijhc.2002.1017>

- Umriani, F., Suparman, Y. H., & Sari, D. P. (2020). *Analysis and Design of Mathematics Student Worksheets Based on PBL Learning Models to Improve Creative Thinking* (Vol. 29(7)). International Journal of Advanced Science and Technology.
- Utami, D. (2011). Animasi dalam pembelajaran. *Majalah Ilmiah Pembelajaran*, 7(1).
- Van Hiele, P. M. (1986). *Structure and Insight: A Theory of Mathematics Education*. Orlando: Academic Press.
- Wahyuni, R., & Prihatiningtyas, N. C. (2020). Kemampuan Pemahaman Konsep Matematika terhadap Kemampuan Koneksi Matematika Siswa pada Materi Perbandingan. *Variabel*, 3(2), 66.
- Widiantari, N., Suparta, I., & Sariyasa. (2022). Meningkatkan Literasi Numerasi dan Pendidikan Karakter dengan E-Modul Bermuatan Etnomatematika di Era Pandemi COVID-19. *Jurnal Ilmiah Pendidikan Matematika*. doi:<https://doi.org/10.25273/jipm.v10i2.10218>
- Widoyoko, E. P. (2009). *Evaluasi Program Pembelajaran*. Yogyakarta: Pustaka Belajar.
- Zhu, L., & Grabowski, B. (2004, January). The Effects of Various Animation Strategies in Facilitating the Achievement of Studentn on Tests Measuring Different Educational Objectives. *Association for Educational Communications and Technology*.