

DAFTAR PUSTAKA

- Abdulrahaman, M. D., Faruk, N., Oloyede, A. A., Surajudeen-Bakinde, N. T., Olawoyin, L. A., Mejabi, O. V., ... & Azeez, A. L. (2020). Multimedia tools in the teaching and learning processes: A systematic review. *Heliyon*, 6(11).
- Abelson, H. (2008). Computational thinking. *Communications of the ACM*, 51(7), 9-17.
- Aho, A. V. (2012). Computation and Computational Thinking. *The Computer Journal*, 55(7), 832–835.
- Akinoso, O. (2018). Effect of the use of multimedia on students performance in secondary school mathematics. *Global Media Journal*, 16(30), 1-8.
- Akrim, M. (2018). Media Learning in Digital Era. Advances in Social Science, Education and Humanities Research, 231(Amca), 458–460. <https://doi.org/10.2991/amca-18.2018.127>
- Angraini, L. M. (2022). Improvement of Computational Thinking through Interactive Multimedia Learning Based on Initial Mathematical Ability. *International Journal of Contemporary Studies in Education (IJ-CSE)*, 1(1), 19-29.
- APFC. (2017). *Preparing students for South Korea's creative economy: The successes and challenges of educational reform*. Retrieved February 13, 2017, from <http://www.asiapacific.ca/research-report/preparing-students-south-koreas-creative-economy-successes>
- Arifin, Z. (2011). Evaluasi Pembelajaran. Bandung: PT Remaja Rosda Karya.
- Ariyadi, Wijaya (2012) *Pendidikan Matematika Realistik. Suatu Alternatif Pendekatan Pembelajaran Matematika*. Yogyakarta: Graha Ilmu
- Ausubel, D Novak J and Hanesian H. (1978). *Educational Psychology: A Cognitive View*, Rinehart and Winston. New York.
- OECD. (2018). PISA 2021 mathematics framework (second draft).
- Bacca, Jorge., Silvia Baldiris, Ramon Fabregat, Sabine Graf, & Kinshuk. (2014). Augmented Reality Trends in Education: A Systematic Review of Research and Applications. *Journal of Educational Technology & Society*, 17(4), 133–149. <http://www.jstor.org/stable/jeduchtechsoci.17.4.133>
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Barcelos, T. S., & Silveira, I. F. (2012). Teaching computational thinking in initial series an analysis of the confluence among mathematics and computer sciences in elementary education and its implications for higher education. In *2012 XXXVIII Conferencia Latinoamericana En Informatica (CLEI)* (pp. 1-8). IEEE.

- Barr, D., Harrison, J., & Conery, L. (2011). Computational thinking: A digital age skill for everyone. *Learning & Leading with Technology* 38 (6), 20-23. Diambil dari <https://eric.ed.gov/?id=EJ918910>
- BBC. (2018). BBC—Introduction to computational thinking. Retrieved from <https://www.bbc.co.uk/education/guides/zp92mp3/revision/1>
- Bescherer, C., & Fest, A. (2018). *Computational thinking in primary schools: Theory and casual model*. In A. Tatnall & M. Webb (Eds.), Tomorrow's learning: Involving everyone. IFIP advances in information and communication technology. Springer.
- Bito, N., & Masaong, A. K. (2023). Peran Media Pembelajaran Matematika sebagai Teknologi dan Solusi dalam Pendidikan Di Era Digitalisasi dan Disruption. *Jambura Journal of Mathematics Education*, 4(1), 88-97.
- Blevins, B. (2018). Teaching digital literacy composing concepts: focusing on the layers of augmented reality in an era of changing technology. *Computers and Composition*, 50, 21-38.
- Bocconi, S., Chiocciello, A., et al.l. (2016). *Developing Computational Thinking in compulsory education, Implications for policy and practice* (P. Kampylis & Y. Punie, eds.). Luxembourg: Publications Office of the European Union.
- Bocconi, S., Chiocciello, A., & Earp, J. (2018). *The Nordic approach to introducing computational thinking and programming in compulsory education*. Report prepared for the Nordic@BETT2018 Steering Group. <https://doi.org/10.17471/54007>.
- Bozkurt, Aras., dan Mujgan Bozkaya. (2015). Evaluation Criteria for Interactive E-Books for Open and Distance Learning. *International Review of Research in Open and Distributed Learning*. 16(5). 58-82
- Branch, Robert. (2009). Instructional design: The ADDIE approach. USA: Springer.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (2000). *How people learn: Brain, mind, experience, and school*. National Academies Press
- Cahyadi, Rahmat Arofah Hari. (2019). Pengembangan Bahan Ajar Berbasis ADDIE Model. *Education Journal*. E-ISSN: 2503 – 5045. 3(1). 35-43
- Cairncross, Sandra & Mike Mannion. (2001). Interactive Multimedia and Learning: Realizing the Benefits. *Innovations in Education and Teaching International*. 38:2, 156-164.
<http://dx.doi.org/10.1080/14703290110035428>
- Chang, T. S., et al.l. (2021). Use of an interactive multimedia e-book to improve nursing students' sexual harassment prevention knowledge, prevention strategies, coping behavior, and learning motivation: A randomized controlled study. *Nurse Education Today*, 105, 104883. <https://doi.org/10.1016/j.nedt.2021.104883>

- Chen, Y. C. (2019). Effect of mobile augmented reality on learning performance, motivation, and math anxiety in a math course. *Journal of Educational Computing Research*, 57(7), 1695-1722.
<https://doi.org/10.1177/0735633119854036>
- Chen, Y. L. (2019). The relationship between learning motivation and learning performance: A study of Taiwanese students. *Journal of Education and Practice*, 10(14), 64-73.
- Costa, E. J. F., Campos, L. M. R. S., & Guerrero, D. D. S. (2017). Computational thinking in mathematics education: A joint approach to encourage problem-solving ability. *IEEE Frontiers in Education Conference (FIE)* (pp. 1-8). IEEE.
- Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual review of psychology*, 51(1), 171-200.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. Harper & Row.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry*, 11(4), 227-268.
- Denning, P. J., & Winslow, A. R. (2016). Teaching computational thinking. *Communications of the ACM*, 59(8), 34-36.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109-132.
- Elliot, A. J., & McGregor, H. A. (2001). A 2× 2 achievement goal framework. *Journal of Personality and Social Psychology*, 80(3), 501-519.
- Filgona, Jacob et al.l. (2020). Motivation in Learning. *Asian Journal of Education and Social Studies*. ISSN: 2581-6268. 10(4): 16-37
<https://www.academia.edu/download/76817884/56776.pdf>
- Feurzeig, W., & Papert, S. A. (2011). Programming-languages as a conceptual framework for teaching mathematics. *Interactive Learning Environments*, 19(5), 487-501. <https://doi.org/10.1080/10494820903520040>
- Furdu, Iulian & Tomozei, Cosmin & Köse, Utku. (2017). Pros and Cons Gamification and Gaming in Classroom. Broad Research in Artificial Intelligence and Neuroscience. 8. 56-62.
- González González, Carina & Navarro-Adelantado, Vicente. (2020). The limits of gamification. *Convergence*. 27. 10.1177/1354856520984743.
- Google. (2018). Google for education: Exploring computational thinking. Retrieved April 8, 2023, from

<https://edu.google.com/resources/programs/exploring-computational-thinking/#!ct-overview>

- Grover, S., & Pea, R. (2013). Computational thinking in K–12: A review of the state of the field. *Educational Researcher*, 42(1), 38-43.
- Guzdial, Mark. (2006). Computing and education. *Communications of the ACM*, 49(8), 25-27
- Hamid, et al. (2020). *Media pembelajaran*. Yayasan Kita Menulis.
- Hasan, Muhammad et al. (2021). *Media Pembelajaran*. Tahta Media Group: Klaten
- Hasratuddin. (2018). *Mengapa Harus Belajar Matematika?*. Medan: Perdana Publishing.
- Höffler, T. N., & Leutner, D. (2007). Instructional animation versus static pictures: A meta-analysis. *Learning and Instruction*, 17, 722–738.
- Hidayatullah. (2019). *Penelitian Tindak Kelas*. Setia Budhi: Banten.
- Hwang, W. Y., Wang, C. Y., & Sharples, M. (2007). A study of multimedia annotation of Web-based materials. *Computers & Education*, 48(4), 680-699.
- IEA (2016). The IEA's international computer and information literacy study (ICILS) 2018. What's next for IEA's ICILS in 2018? Retrieved December 12, 2017, from
http://www.iea.nl/fileadmin/user_upload/Studies/ICILS_2018/IEA_ICILS_2018_Computational_Thinking_Leaflet.pdf.
- Iyer, S. (2019). Teaching-Learning of Computational thinking in K-12 Schools in India. In: Kong, SC., Abelson, H. (eds) Computational thinking Education. Springer, Singapore. https://doi.org/10.1007/978-981-13-6528-7_20
- Jamna, N. D., et al. (2022). Analisis Kemampuan berpikir Komputasi Matematis Siswa SMP pada Materi Persamaan Kuadrat. *Jurnal Pendidikan Guru Matematika*, 2(3).
- Jaokar, A. (2013). Evolving the definition of Computational thinking, from
<http://www.opengardensblog.futuretext.com/archives/2013/07/evolving-the-definition-of-computational-thinking.html>
- Japan Times. (2017). Computer programming seen as key to Japan's place in 'fourth industrial revolution'. Retrieved February 13, 2017, from
http://www.japantimes.co.jp/news/2016/06/10/business/tech/computer-programming-industry-seen-key-japans-place-fourth-industrial-revolution/#.WKG2P_197b0.
- Jeong, H., Choi, J., & Lee, J. (2018). Developing computational thinking through project-based learning in elementary school. *International Journal of Engineering Education*, 34(1), 320-330.

- Kamil, M. R., et al.l. (2021). Analisis kemampuan computational thinking matematis Siswa Kelas IX SMP Negeri 1 Cikampek pada materi pola bilangan. *AKSIOMA: Jurnal Matematika dan Pendidikan Matematika*, 12(2), 259-270.
- Kong, SC. (2019). Components and Methods of Evaluating Computational thinking for Fostering Creative Problem-Solvers in Senior Primary School Education. In: Kong, SC., Abelson, H. (eds) Computational thinking Education. Springer, Singapore. https://doi.org/10.1007/978-981-13-6528-7_8
- Kwek, K. S., Goh, D. H. L., Toh, Y., & Chen, Y. (2018). Computational thinking in mathematics education: A literature review. *Journal of Educational Technology & Society*, 21(3), 74-84.
- Lauc, T., Jagodić, G. K., & Bistrović, J. (2020). Effects of Multimedia Instructional Message on Motivation and Academic Performance of Elementary School Students in Croatia. *International Journal of Instruction*, 13(4), 491-508. <https://doi.org/10.29333/iji.2020.13431a>
- Lee, CS & Chan, PY. (2019). Mathematics Learning: Perceptions Toward the Design of a Website Based on a Fun Computational Thinking-Based Knowledge Management Framework. In: Kong, SC., Abelson, H. (eds) Computational thinking Education. Springer, Singapore. https://doi.org/10.1007/978-981-13-6528-7_11
- Lee, T. Y., Mauriello, M. L., Ahn, J., & Bederson, B. B. (2014). CTArcade: Computational thinking with games in school age children. *International Journal of Child-Computer Interaction*, 2(1), 26–33.
- Lestari, S., & Roesdiana, L. (2023). Analisis Kemampuan Computational thinking Matematis Siswa Pada Materi Program Linear. *RANGE: Jurnal Pendidikan Matematika*, 4(2), 178-188.
- Malone, T. W., & Lepper, M. R. (1987). Making learning fun. A taxonomy of intrinsic motivations for learning. *Aptitude, learning, and instruction*, 3, 223-253.
- Mamik, M. (2014). *Metodologi Kualitatif*. Sidoarjo: Zifatama Publisher.
- Mamik. (2020). *Pengembangan Instrumen Penelitian dan Evaluasi*. Pekalongan: Nasya Expanding Management.
- Maria, Kallia., Sylvia Patricia van Borkulo, Paul Drijvers, Erik Barendsen & Jos Tolboom. (2021). Characterising computational thinking in mathematics education: a literature informed Delphi study, *Research in Mathematics Education*. <https://doi.org/10.1080/14794802.2020.1852104>
- Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement*. Alexandria, VA: ASCD.

- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370-396.
- Maslow, A. H. (1954). *Motivation and Personality*. New York: Harper.
- Matt, G. J., & Dale, S. B. (2002). Extrinsic Motivation in Students: Antecedents, Consequences, and Implications for School Psychologists. *Psychology in the Schools*, 39(3), 259-267.
- Maxfield, M. G., & Babbie, E. R. (2014). *Research methods for criminal justice and criminology*. Cengage Learning.
- Mayer, R. E. (2002). Multimedia learning. *Psychology of learning and motivation* (Vol. 41, pp. 85-139). Academic Press.
- Mayer, R. E. (2009). Multimedia learning 2nd Edition. Cambridge: Cambridge University Press.
- Mayer, R. E., Mathias, A., & Wetzell, K. (2002). Fostering understanding of multimedia messages through pretraining: Evidence for a two-stage theory of mental model construction. *Journal of Experimental Psychology: Applied*, 8, 147–154.
- Mayer. (2014). *The Cambridge Handbook of Multimedia Learning* (second edition). America: Cambridge University Press
- McCombs, B. L. (2014). *Motivation and learning strategies for college success: A focus on self-regulated learning*. Routledge.
- McKwon, K. A., & Roberts, T. G. (2013). Key considerations when designing online instruction: media, student engagement, and active learning. *Journal of Online Learning and Teaching*, 9(2), 173-184.
- Miftah. (2013). Fungsi dan Peran Media Pembelajaran Sebagai Upaya Peningkatan Kemampuan Belajar. *Kwangsant*. 1(2), 95-105.
- Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63(2), 81-97.
- Miller, L. M., Chang, C. I., Wang, S., Beier, M. E., & Klisch, Y. (2011). Learning and motivational impacts of a multimedia science game. *Computers & Education*, 57(1), 1425-1433.
<https://doi.org/10.1016/j.compedu.2011.01.016>
- Mirnani, et al. (2020). *Kemampuan Berpikir Matematis dan Aspek Afektif Siswa*. Medan: Harapan Cerdas Publisher.
- Mohaghegh, M., & McCauley, M. (2016). Computational Thinking: The Skill Set of the 21st Century. *International Journal of Computer Science and Information Technologies (IJCSIT)*, 7(3) ISSN: 0975-9646, pp.1524-1530.
<https://hdl.handle.net/10652/3422>

- Moreno, R., & Mayer, R. E. (1999) Cognitive principles of multimedia learning: The role of modality and contiguity. *Journal of Educational Psychology*, 91, 358–368.
- Moreno, R., & Mayer, R. E. (2000). Engaging students in active learning: The case for personalized multimedia messages. *Journal of Educational Psychology*, 92, 724–733.
- Newell, A., & Simon, H. A. (1972). *Human problem solving*. Englewood Cliffs, NJ: Prentice-Hall.
- Pakpahan, et al.l. (2020). *Pengembangan media pembelajaran*. Yayasan Kita Menulis.
- Papert, Seymour. (1980). *Mindstorms: Children, computers, and powerful ideas*. Basic Books.
- Piaget, J (1972). *The Psychology of Intelligence*. Littlefield Adams. NJ
- Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. *Handbook of self-regulation*, 451-502.
- Ramli, M. (2012). *Media dan Teknologi Pembelajaran*. IAIN Antasari Press: Banjarmasin.
- Reddi, U. V. (2003). Multimedia as an educational tool. In U. V. Reddi, & S. Mishra (Eds.), *Educational multimedia: A handbook for teacher-developers* (pp. 3–7). New Delhi: CEMCA
- Reeve, J. (2013). *Understanding motivation and emotion*. John Wiley & Sons.
- Reilly, J.M., Dede, C. (2019). Augmented Reality in Education. In: Zhang, Y., Cristol, D. (eds) *Handbook of Mobile Teaching and Learning*. Springer, Singapore. https://doi.org/10.1007/978-981-13-2766-7_126
- Royal Society. (2012). *Shut down or restart: The way forward for computing in UK schools*. Retrieved from <http://royalsociety.org/education/policy/computing-in-schools/report/>
- Rumelhart, D. E., & Norman, D. A. (1983). Representation in memory. In J. L. Anderson (Ed.), *Cognitive psychology and its implications* (pp. 211-248). New York: Freeman.
- Sartono, E., Sekarwangi, T., & Herwin, H. (2022). Interactive Multimedia Based on Cultural Diversity to Improve the Understanding of Civic Concepts and Learning Motivation. *World Journal on Educational Technology: Current Issues*, 14(2), 356-368. <https://doi.org/10.18844/wjet.v14i2.6909>
- Schunk, D. H. (2012). *Learning theories: An educational perspective*. Pearson.
- Sengupta P, Kinnebrew JS, Basu S, Biswas G, Clark D. (2013) Integrating computational thinking with K-12 science education using agent-based computation: a theoretical framework. *Educ Inf Technol.* 18(2): 351–380

- Setyosari, Punaji. (2016). Metode Penelitian Pendidikan dan Pengembangan. Jakarta: Prenadamedia.
- Seow, P., Looi, CK., How, ML., Wadhwa, B., Wu, LK. (2019). Educational Policy and Implementation of Computational thinking and Programming: Case Study of Singapore. In: Kong, SC., Abelson, H. (eds) Computational thinking Education. Springer, Singapore. https://doi.org/10.1007/978-981-13-6528-7_19
- Shrestha, P. (2018). Impact of student motivation on teachers' motivation to teach: A case study of Nepal. *Journal of NELTA*, 23(1-2), 1-12.
- Selby, C., & Woppard, J. (2013). Computational thinking: the developing definition. *Proceedings of the 14th International Conference on Informatics and Semiotics in Organisations* (pp. 1-12). Springer.
- Shoufan, A. (2019). Estimating the cognitive value of YouTube's educational videos: A learning analytics approach. *Computers in Human Behavior*, 92, 450-458.
- Sukardi, H. M. (2015). *Evaluasi Pendidikan: Prinsip dan Operasionalnya*. Jakarta: Bumi Aksara.
- Sukmadinata, Nana Syaodih. (2017). *Metode Penelitian Pendidikan*. Bandung: Remaja Rosdakarya
- Surjono, Hamid Dwi. (2017). *Multimedia Pembelajaran Interaktif (Konsep dan Pengembangan)*. UNY Press: Yogyakarta.
- Susanti, Reni Dwi & Marhan Taufik. (2021). Analysis of Student Computational thinking in Solving Social Statistics Problems. *Supremum Journal of Mathematics Education*. 5(1): 22-31. ISSN: 2549-3639. <https://doi.org/10.35706/sjme.v5i1.4376>
- Sutarti, Tatik dan Edi Irawan. (2017). *Kiat Sukses Meraih Hibah Penelitian Pengembangan*. Yogyakarta: Deepublish
- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12, 257-285.
- Trianto. (2009). *Mendesain Model Pembelajaran Inovatif-Progresif*. Jakarta: Kencana Prenada Media Group
- Uno, H.B. (2011). *Teori Motivasi dan Pengukurannya*. Jakarta: Bumi Aksara.
- Vaughan, Tay. (2011). *Multimedia: Making It Work* (Eighth Edition). McGraw-Hill: New York.
- Vero, E., & Puka, E. (2017). The Importance of Motivation in an Educational Environment L'importanza della motivazione in un ambiente educativo. *Formazione & insegnamento XV*, 57-66.

- Voogt, J., Fisser, P., Good, J., Mishra, P., & Yadav, A. (2015). Computational thinking in compulsory education: Towards an agenda for research and practice. *Education and Information Technologies*, 20(4), 715-728.
- Vourletsis, I., Politis, P., Karasavvidis, I. (2021). The Effect of a Computational Thinking Instructional Intervention on Students' Debugging Proficiency Level and Strategy Use. In: Tsatsos, T., Demetriadis, S., Mikropoulos, A., Dagdilelis, V. (eds) *Research on E-Learning and ICT in Education*. Springer, Cham. https://doi.org/10.1007/978-3-030-64363-8_2
- Wardani, K. W., & Danang Setyadi. (2020). Pengembangan media pembelajaran matematika berbasis macromedia flash materi luas dan keliling untuk meningkatkan motivasi belajar siswa. Scholaria: Jurnal Pendidikan Dan Kebudayaan, 10(1), 73-84.
- Weintrop, D., Wilensky, U., & Resnick, M. (2016). Integrating computational thinking in STEM education. *Communications of the ACM*, 59(9), 34-36.
- Widodo, Sugeng., dan Dian Utami. (2018). *Belajar dan Pembelajaran*. Yogyakarta: Graha Ilmu
- Wing, J. M. (2006). Computational thinking. *Communications of the ACM*, 49(3), 33–35. <https://doi.org/10.1145/1118178.1118215>
- Wing, J.M. (2017). Computational thinking's influence on research and education for all. *Italian Journal of Educational Technology*, 25(2), 7-14. doi: 10.17471/2499-4324/922
- Winkel, W.S. (2004). *Psikologi Pengajaran*. Yogyakarta: Media Abadi
- Wong, G. K., & Li, J. (2018). Applying computational thinking in mathematics education. *International Journal of STEM Education*, 5(1), 1-12.
- Wu, T. T., & Chen, A. C. (2018). Combining e-books with mind mapping in a reciprocal teaching strategy for a classical Chinese course. *Computers & Education*, 116, 64-80.
- Xiao, J. (2022, June). Potential Negative Impact of Gamification Education: A Review of Gamification Research. In 2022 8th International Conference on Humanities and Social Science Research (ICHSSR 2022) (pp. 2179-2182). Atlantis Press.
- Zhang, F. (2012). Significances of multimedia technologies training. *Physics Procedia*, 33, 2005-2010.