

## DAFTAR PUSTAKA

- Abidin, Z. (2020). Universitas Bhayangkara Jakarta 3) Mathematical Reasoning Abilities In Elementary Schools. *Dkk JMIE : Journal of Madrasah Ibtidaiyah Education*, 4(1), 2020. <http://e-journal.adpgmiindonesia.com/index.php/jmie>
- Aggarwal, A., Gardner-Mccune, C., & Touretzky, D. S. (2017). Evaluating the effect of using physical manipulatives to foster computational thinking in elementary school. *Proceedings of the Conference on Integrating Technology into Computer Science Education, ITiCSE*, 9–14. <https://doi.org/10.1145/3017680.3017791>
- Aho, A. V. (2012). Computation and computational thinking. *Computer Journal*, 55(7), 833–835. <https://doi.org/10.1093/comjnl/bxs074>
- Andrews, J. D. W. (1984). Discovery and expository learning compared: Their effects on independent and dependent students. *Journal of Educational Research*, 78(2), 80–89. <https://doi.org/10.1080/00220671.1984.10885578>
- Arends, Dick., & Kilcher, A. (2010). Teaching for Student Learning: Becoming an Accomplished Teacher - Dick Arends, Ann Kilcher - Google Buku. In *Routledge*.
- Arends, Richard. I. (2012). *Learning to Teach*. Mc Graw-hill.
- Arikunto, S. (2015). Dasar-dasar Evaluasi Pendidikan Edisi 3. In *Bumi Aksara* (Vol. 3, Issue 2). Bumi Aksara.
- Artemenko, C., Daroczy, G., & Nuerk, H. C. (2015). Neural correlates of math anxiety – an overview and implications. *Frontiers in Psychology*, 6(September). <https://doi.org/10.3389/fpsyg.2015.01333>
- Ashcraft, M. H., & Kirk, E. P. (2001). The relationships among working memory, math anxiety, and performance. *Journal of Experimental Psychology: General*, 130(2), 224–237. <https://doi.org/10.1037/0096-3445.130.2.224>
- Ashcraft, M., & Krause, J. (2007). What is a question? Crowdsourcing tweet categorization. *Psychonomic Bulletin & Review*, 14(2), 243–248.
- Ballu, M., & Zelhart, P. F. (2007). Psychometric Properties of the Revised Mathematics. In *Comparative and General Pharmacology* (Vol. 57, Issue 4, pp. 593–611).

- Barr, D., Harrison, J., & Conery, L. (2011). Computational Thinking: A Digital Age Skill for Everyone. *Learning and Leading with Technology*, 38(6), 20–23.
- Barrows, H. S. (2000). *Practice-Based Learning: Problem-Based Learning Applied to Medical Education*. Southern Illinois Univ., Carbondale. School of Medicin.
- Barrows, H. S., & Tamblyn, R. (1980). *Problem-Based Learning: An Approach to Medical Education*. Springer US.
- Basri, H. (2007). *Pembelajaran Efektif*. Pustaka Pelajar.
- Bers, M. U., Flannery, L., Kazakoff, E. R., & Sullivan, A. (2014). Computational thinking and tinkering: Exploration of an early childhood robotics curriculum. *Computers and Education*, 72, 145–157. <https://doi.org/10.1016/j.compedu.2013.10.020>
- Bieg, M., Goetz, T., Sticca, F., Brunner, E., Becker, E., Morger, V., & Hubbard, K. (2017). Teaching methods and their impact on students' emotions in mathematics: an experience-sampling approach. *ZDM - Mathematics Education*, 49(3), 411–422. <https://doi.org/10.1007/s11858-017-0840-1>
- Blazer, C. (2021). Strategies for reducing math anxiety. *Information Capsule*, 1102(September), 1–8.
- Bora, A., & Ahmed, S. (2019). Mathematical Modeling: An Important Tool for Mathematics Teaching. *International Journal of Research and Analytical Reviews*, 6(2), 252–256.
- Brennan, K., & Resnick, M. (2012). New frameworks for studying and assessing the development of computational thinking. *Annual American Educational Research Association Meeting, Vancouver, BC, Canada, February*, 1–25. [http://web.media.mit.edu/~kbrennan/files/Brennan\\_Resnick\\_AERA2012\\_CT.pdf](http://web.media.mit.edu/~kbrennan/files/Brennan_Resnick_AERA2012_CT.pdf)
- Carey, E., Hill, F., Devine, A., & Szűcs, D. (2016). The chicken or the egg? The direction of the relationship between mathematics anxiety and mathematics performance. *Frontiers in Psychology*, 6(JAN), 1–6. <https://doi.org/10.3389/fpsyg.2015.01987>
- Carvalho, T., Andrade, D., Silveira, J., Auler, V., Cavalheiro, S., Aguiar, M., Foss, L., Pernas, A., & Reiser, R. (2013). Discussing the challenges related to

- deployment of computational thinking in brazilian basic education. *Proceedings - 2013 Workshop-School on Theoretical Computer Science, WEIT 2013*, 111–115. <https://doi.org/10.1109/WEIT.2013.27>
- Cassady, J. C., & Johnson, R. E. (2002). Cognitive test anxiety and academic performance. *Contemporary Educational Psychology*, 27(2), 270–295. <https://doi.org/10.1006/ceps.2001.1094>
- Cates, G. L., & Rhymer, K. N. (2003). Examining the Relationship Between Mathematics Anxiety and Mathematics Performance: An Instructional Hierarchy Perspective. *Journal of Behavioral Education*, 12(1), 23–34.
- Cengiz, S., & Eğmir, E. (2022). The Effect of Realistic Mathematics Education on Academic Achievement, Motivation and Retention of Fifth Grade Students. *Universal Journal of Educational Research*, 10(3), 225–239. <https://doi.org/10.13189/ujer.2022.100305>
- 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>
- Chevalier, M., Giang, C., El-Hamamsy, L., Bonnet, E., Papaspyros, V., Pellet, J. P., Audrin, C., Romero, M., Baumberger, B., & Mondada, F. (2022). The role of feedback and guidance as intervention methods to foster computational thinking in educational robotics learning activities for primary school. *Computers and Education*, 180(January), 104431. <https://doi.org/10.1016/j.compedu.2022.104431>
- Chinn. (2017). Mathematics anxiety in secondary students in England. *Dyslexia*, 239(December 2008), 234–239. <https://doi.org/10.1002/dys>
- Cipora, K., Szczygiel, M., Willmes, K., & Nuerk, H. C. (2015). Math anxiety assessment with the Abbreviated Math Anxiety Scale: Applicability and usefulness: Insights from the polish adaptation. *Frontiers in Psychology*, 6(NOV). <https://doi.org/10.3389/fpsyg.2015.01833>
- Collins, A., Brown, J. S., & Newman, S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In *Knowing*,

- Learning, and Instruction: Essays in Honor of Robert Glaser* (pp. 453–494).  
<https://doi.org/10.4324/9781315044408-14>
- 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. *Proceedings - Frontiers in Education Conference, FIE, 2017-Octob*(October 2017), 1–8. <https://doi.org/10.1109/FIE.2017.8190655>
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson.
- Csizmadia, A., Curzon, P., Dorling, M., Humphreys, S., Ng, T., Selby, C., & Woppard, J. (2015). Computational Thinking: A Guide for Teachers. *Computing At School, October 2018*, 18.
- Cuder, A., Živković, M., Doz, E., Pellizzoni, S., & Passolunghi, M. C. (2023). The relationship between math anxiety and math performance: The moderating role of visuospatial working memory. *Journal of Experimental Child Psychology*, 233. <https://doi.org/10.1016/j.jecp.2023.105688>
- Curzon, P., Dorling, M., Ng, T., Selby, C., & Woppard, J. (2014). Developing computational thinking in the classroom: a framework. *Computing at School, June*, 1–6.
- Curzon, P., & McOwan, P. W. (2017). The Power of Computational Thinking: Games, Magic and Puzzles to Help You Become a Computational Thinker. In *Nature Climate Change* (Vol. 9, Issue 5). <https://doi.org/10.1038/s41558-019-0477-x>
- Dahar, R. W. (2011). *Teori-teori Belajar dan Pembelajaran*. Erlangga.
- del Olmo-Muñoz, J., Cózar-Gutiérrez, R., & González-Calero, J. A. (2020). Computational thinking through unplugged activities in early years of Primary Education. *Computers and Education*, 150(January). <https://doi.org/10.1016/j.compedu.2020.103832>
- Denner, J., Coulter, B., Allan, W., Werner, J. M. L., Nouri, J., Zhang, L., Mannila, L., & Norén, E. (2011). Computational thinking for youth in practice. *Education Inquiry*, 2(1), 32–37.
- Dignath, C., & Veenman, M. V. J. (2021). The Role of Direct Strategy Instruction and Indirect Activation of Self-Regulated Learning—Evidence from

- Classroom Observation Studies. *Educational Psychology Review*, 33(2), 489–533. <https://doi.org/10.1007/s10648-020-09534-0>
- DiStefano, M., Retanal, F., Bureau, J. F., Hunt, T. E., Lafay, A., Osana, H. P., Skwarchuk, S. L., Trepiak, P., Xu, C., LeFevre, J. A., & Maloney, E. A. (2023). Relations between Math Achievement, Math Anxiety, and the Quality of Parent–Child Interactions While Solving Math Problems. *Education Sciences*, 13(3). <https://doi.org/10.3390/educsci13030307>
- Duch, B. J., Groh, S. E., & Allen, D. E. (2001). *The power of problem-based learning: a practical “how to” for teaching undergraduate courses in any discipline*. Sterling, Va. : Stylus.
- Eggen, P., & Kauchak, D. (2012). Strategies and Models for Teachers. *Pearson*, 72(508), 343.
- Fajri, M., Yurniawati, & Utomo, E. (2019). Computational Thinking, Mathematical Thinking Berorientasi Gaya Kognitif Pada Pembelajaran Matematika Di Sekolah Dasar. *Dinamika Sekolah Dasar*, 1(1), 1–18.
- Ganley, C. M., & McGraw, A. L. (2016). The development and validation of a revised version of the math anxiety scale for young children. *Frontiers in Psychology*, 7(AUG). <https://doi.org/10.3389/fpsyg.2016.01181>
- Gao, X., & Hew, K. F. (2022). Toward a 5E-Based Flipped Classroom Model for Teaching Computational Thinking in Elementary School: Effects on Student Computational Thinking and Problem-Solving Performance. *Journal of Educational Computing Research*, 60(2), 512–543. <https://doi.org/10.1177/07356331211037757>
- Gerlach, V. S., & Ely, D. P. (1980). *Teaching & Media: A Systematic Approach* (2nd ed.). Prentice-Hall Incorporated.
- Gravemeijer, K. (2004). Local Instruction Theories as Means of Support for Teachers in Reform Mathematics Education. *Mathematical Thinking and Learning*, 6(2), 105–128. [https://doi.org/10.1207/s15327833mtl0602\\_3](https://doi.org/10.1207/s15327833mtl0602_3)
- Gravemeijer, K., & Doorman, M. (1999). Context problems in realistic mathematics education: A calculus course as an example. *Educational Studies in Mathematics*, 39(1–3), 111–129. <https://doi.org/10.1023/a:1003749919816>

- Greeno, J. G., Collins, A. M., & Resnick, L. B. (1996). *Cognition and learning*. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology*. Prentice Hall International.
- Güler, H. K. (2018). Activities Written by Prospective Primary Teachers on Realistic Mathematics Education. *International Journal of Evaluation and Research in Education (IJERE)*, 7(3), 229. <https://doi.org/10.11591/ijere.v7i3.14267>
- Hamdayama, J. (2011). *Metodologi Pengajaran*. Bumi Aksara.
- Hamdi, S., Suganda, I. A., & Hayati, N. (2018). Developing higher-order thinking skill (HOTS) test instrument using Lombok local cultures as contexts for junior secondary school mathematics. *Research and Evaluation in Education*, 4(2), 126–135. <https://doi.org/10.21831/reid.v4i2.22089>
- Hancock, C. L. (1995). Implementing the Assessment Standards for School Mathematics: Enhancing Mathematics Learning with Open-Ended Questions. *The Mathematics Teacher*, 88(6), 496–499.
- Hanum, L., & Amini, R. (2023). Pengembangan E-LKPD Berbasis Problem Based Learning Menggunakan Aplikasi Book Creator di Kelas III Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6(4), 2183–2194. <https://doi.org/10.31949/jee.v6i4.7963>
- Harel, G., & Sowder, L. (2013). Advanced mathematical-thinking at any age: Its nature and its development. *Advanced Mathematical Thinking: A Special Issue of Mathematical Thinking and Learning*, May 2014, 27–50. <https://doi.org/10.4324/9781315045955>
- Heuvel-Panhuizen, M. Van Den. (2000). Mathematics education in the Netherlands: A guided tour. *Freudenthal Institute CD-Rom for ...*, 2(March 1999), 26–27.
- Hopko, D. R., Mahadevan, R., Bare, R. L., & Hunt, M. K. (2013). The Abbreviated Math Anxiety Scale (AMAS): Construction, validity, and reliability. *Assessment*, 10(2), 178–182. <https://doi.org/10.1177/1073191103010002008>
- I Wayan, W. (2017). *HIGHER ORDER THINKING SKILLS ASSESSMENT (HOTS)* I Wayan Widana. 3(1), 32–44.

- Intan, R., Rejeki, R., Panggabean, R. R., & ... (2022). Application Of The M-Apos Learning Model (Modification-Action, Process, Object, Scheme) To Improve Mathematics Outcomes In Class IV State Elementary School .... *Indonesian Journal of ...*, 5(3), 236–249. <https://doi.org/10.56313/ijobe.v5i3.631>
- Isoda, M. (2010). Lesson study: Problem Solving Approaches in mathematics education as a Japanese experience. *Procedia - Social and Behavioral Sciences*, 8(5), 17–27. <https://doi.org/10.1016/j.sbspro.2010.12.003>
- Jacob, S., Nguyen, H., Tofel-Grehl, C., Richardson, D., & Warschauer, M. (2018). Teaching Computational Thinking to Elglish Leanrers. *NYS Tesol Journal*, 5(2), 12–24.
- Jarolimek, J. (1976). *Teaching and learning in the elementary school*. Macmillan. <https://doi.org/10.1177/194277861500800108>
- Jiang, B., & Li, Z. (2021). Effect of Scratch on computational thinking skills of Chinese primary school students. *Journal of Computers in Education*, 8(4), 505–525. <https://doi.org/10.1007/s40692-021-00190-z>
- Jun, S. J., Han, S. K., & Kim, S. H. (2017). Effect of design-based learning on improving computational thinking. *Behaviour and Information Technology*, 36(1), 43–53. <https://doi.org/10.1080/0144929X.2016.1188415>
- Kemendikbudristek. (2021). *Panduan Pengembangan Projek Penguatan Profil Pelajar Pancasila*.
- Khoumsi, A., & Chakib, H. (2008). A multi-decision approach for decentralized diagnosis of the presence and absence of faults in discrete event systems. *2008 Mediterranean Conference on Control and Automation - Conference Proceedings*, MED'08, March 2006, 406–412. <https://doi.org/10.1109/MED.2008.4602144>
- Kollosche, D., Marcone, R., Knigge, M., Penteado, M. G., & Skovsmose, O. (2019a). Inclusive Mathematics Education: State-of-the-Art Research from Brazil and Germany. *Inclusive Mathematics Education: State-of-the-Art Research from Brazil and Germany*, 1–652. <https://doi.org/10.1007/978-3-030-11518-0>
- Kollosche, D., Marcone, R., Knigge, M., Penteado, M. G., & Skovsmose, O. (2019b). Inclusive Mathematics Education: State-of-the-Art Research from

- Brazil and Germany. *Inclusive Mathematics Education: State-of-the-Art Research from Brazil and Germany*, 1–652. <https://doi.org/10.1007/978-3-030-11518-0>
- Kong, S.-C., Abelson, H., & Kwok, W.-Y. (2022). Introduction to Computational Thinking Education in K–12. In *Computational Thinking Education in K–12*. <https://doi.org/10.7551/mitpress/13375.003.0002>
- Kosyvas, G. (2016). Levels of arithmetic reasoning in solving an open-ended problem. *International Journal of Mathematical Education in Science and Technology*, 47(3), 356–372. <https://doi.org/10.1080/0020739X.2015.1072880>
- Kusumastuti, A. N., Budiyono, & Indriati, D. (2021). Students' Mathematical External Connection Ability Based on Personality Types of Sensing Intuition. *IOP Conference Series: Earth and Environmental Science*, 1808(1). <https://doi.org/10.1088/1742-6596/1808/1/012051>
- Kwon, K., Ottenbreit-Leftwich, A. T., Brush, T. A., Jeon, M., & Yan, G. (2021a). Integration of problem-based learning in elementary computer science education: effects on computational thinking and attitudes. *Educational Technology Research and Development*, 69(5), 2761–2787. <https://doi.org/10.1007/s11423-021-10034-3>
- Kwon, K., Ottenbreit-Leftwich, A. T., Brush, T. A., Jeon, M., & Yan, G. (2021b). Integration of problem-based learning in elementary computer science education: effects on computational thinking and attitudes. *Educational Technology Research and Development*, 69(5), 2761–2787. <https://doi.org/10.1007/s11423-021-10034-3>
- Kwon, O. N., Park, J. S., & Park, J. H. (2006). Cultivating divergent thinking in mathematics through an open-ended approach. *Asia Pacific Education Review*, 7(1), 51–61. <https://doi.org/10.1007/BF03036784>
- Li, Q., Cho, H., Cocco, J., & Maeda, Y. (2021). Relations Between Students' Mathematics Anxiety and Motivation to Learn Mathematics: a Meta-Analysis. *Educational Psychology Review*, 33(3), 1017–1049. <https://doi.org/10.1007/s10648-020-09589-z>

- Li, X., Xie, K., Vongkulluksn, V., Stein, D., & Zhang, Y. (2021). Developing and Testing a Design-Based Learning Approach to Enhance Elementary Students' Self-Perceived Computational Thinking. *Journal of Research on Technology in Education*, 55(2), 344–368.
- Lodi, M., & Martini, S. (2021). Computational Thinking, Between Papert and Wing. *Science and Education*, 30(4), 883–908. <https://doi.org/10.1007/s11191-021-00202-5>
- Luttenberger, S., Wimmer, S., & Paechter, M. (2018). Spotlight on math anxiety. *Psychology Research and Behavior Management*, 11, 311–322. <https://doi.org/10.2147/PRBM.S141421>
- Macher, D., Paechter, M., Papousek, I., & Ruggeri, K. (2012a). Statistics anxiety, trait anxiety, learning behavior, and academic performance. *European Journal of Psychology of Education*, 27(4), 483–498. <https://doi.org/10.1007/s10212-011-0090-5>
- Macher, D., Paechter, M., Papousek, I., & Ruggeri, K. (2012b). Statistics anxiety, trait anxiety, learning behavior, and academic performance. *European Journal of Psychology of Education*, 27(4), 483–498. <https://doi.org/10.1007/s10212-011-0090-5>
- Majid, A. (2004). *Guru dalam Proses Mengajar*. Sinar Baru.
- Malik, S., Prabawa, H. W., & Rusnayati, H. (2019). Peningkatan Kemampuan Berpikir Komputasi Siswa melalui Multimedia Interaktif Berbasis Model Quantum Teaching and Learning. *International Journal of Computer Science Education in Schools*, 8(November), 41. <https://doi.org/10.13140/RG.2.2.34438.83526>
- Mark, H. A., & Michael, W. F. (2018). Mathematics Anxiety And Mental Arithmetic Performance: An Exploratory Investigation. *Cognition and Emotion*, 8(2), 97–125. <https://doi.org/10.1080/02699939408408931>
- Mohaghegh, M., & McCauley, M. (2016). Computational Thinking: The Skill Set of the 21st Century. *International Journal of Computer Science and Information Technologies*, 7(3), 1524–1530.

- Monalisa, M. (2023). Analisis Berpikir Komputasional Siswa SMP pada Kurikulum Merdeka Mata Pelajaran Informatika. *DIAJAR: Jurnal Pendidikan Dan Pembelajaran*, 2(3), 298–304. <https://doi.org/10.54259/diajar.v2i3.1596>
- Munoz, R., Barcelos, T. S., Villarroel, R., & Silveira, I. F. (2016). Game design workshop to develop computational thinking skills in teenagers with Autism Spectrum Disorders. *Iberian Conference on Information Systems and Technologies, CISTI, 2016-July*. <https://doi.org/10.1109/CISTI.2016.7521416>
- Munroe, L. (2015). The Open-Ended Approach Framework. *European Journal of Educational Research*, 4(3), 97–104. <https://doi.org/10.12973/eu-jer.4.3.97>
- Murni. (2013). Open-Ended Approach in Learning to Improve Students Thinking Skills in Banda Aceh. *International Journal of Independent Research and Studies*, 2(2), 95–101.
- Mutlu, Y. (2019). Math anxiety in students with and without math learning difficulties. *International Electronic Journal of Elementary Education*, 11(5), 471–475. <https://doi.org/10.26822/iejee.2019553343>
- Mutlu, Y., Söylemez, İ., & Yasul, A. F. (2017). Examining of the relationship between math anxiety and math achievement of elementary school students<p>İlkokul öğrencilerinin matematik kaygısı ile matematik başarıları arasındaki ilişkinin incelenmesi. *Journal of Human Sciences*, 14(4), 4425. <https://doi.org/10.14687/jhs.v14i4.5019>
- Nasution, W. N. (2020). Expository Learning Strategy: Definition, Goal, Profit and Procedure. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, 25(5), 7–10. <https://doi.org/10.9790/0837-2505080710>
- Nohda, N. (2000a). Teaching by open-approach method in Japanese mathematics classroom. *Proceedings of the 24th Conference of the International Group for the Psychology of Mathematics Education*, 1, 39–53.
- Nohda, N. (2000b). Teaching by open-approach method in Japanese mathematics classroom. *Proceedings of the 24th Conference of the International Group for the Psychology of Mathematics Education*, 1, 39–53.
- NRC. (2010). *Report of a Workshop on the Scope and Nature of Computational Thinking*. National Academy of Sciences.

- O'Grady, G., Yew, E. H. J., Goh, K. P. L., & Schmidt, H. G. (2014). One-day, one-problem: An approach to problem-based learning. *One-Day, One-Problem: An Approach to Problem-Based Learning*, 1–298. <https://doi.org/10.1007/978-981-4021-75-3>
- Özkaya, A., & Yetim Karaca, S. (2017). The effects of Realistic Mathematics Education on students' achievements and attitudes in fifth grades mathematics courses. *International Online Journal of Education and Teaching (IOJET)*, 2017(2), 185–197.
- Palts, T., & Pedaste, M. (2020a). A model for developing computational thinking skills. *Informatics in Education*, 19(1), 113–128. <https://doi.org/10.15388/INFEDU.2020.06>
- Palts, T., & Pedaste, M. (2020b). A model for developing computational thinking skills. *Informatics in Education*, 19(1), 113–128. <https://doi.org/10.15388/INFEDU.2020.06>
- Pantoja, N., Schaeffer, M. W., Rozek, C. S., Beilock, S. L., & Levine, S. C. (2020a). Children's Math Anxiety Predicts Their Math Achievement Over and Above a Key Foundational Math Skill. *Journal of Cognition and Development*, 21(5), 709–728. <https://doi.org/10.1080/15248372.2020.1832098>
- Pantoja, N., Schaeffer, M. W., Rozek, C. S., Beilock, S. L., & Levine, S. C. (2020b). Children's Math Anxiety Predicts Their Math Achievement Over and Above a Key Foundational Math Skill. *Journal of Cognition and Development*, 21(5), 709–728. <https://doi.org/10.1080/15248372.2020.1832098>
- Piedade, J., & Dorotea, N. (2022). Effects of Scratch-based activities on 4th-grade students' computational thinking skills. *Informatics in Education*, 22(3), 499–523. <https://doi.org/10.15388/infedu.2023.19>
- Purnawanto, A. T. (2022). Perencanaan Pembelajaran Bermakna dan Asesmen Kurikulum Merdeka. *Jurnal Pedagogy*, 20(1), 75–94.
- Rachmawati, D., & Rukmi, A. S. (2014). Penerapan Model Pembelajaran Langsung Untuk Meningkatkan Keterampilan Membaca Permulaan Siswa. *Jpgsd*, 02(03), 1–11.
- Ramirez, G., Chang, H., Maloney, E. A., Levine, S. C., & Beilock, S. L. (2016a). On the relationship between math anxiety and math achievement in early

- elementary school: The role of problem solving strategies. *Journal of Experimental Child Psychology*, 141, 83–100.  
<https://doi.org/10.1016/j.jecp.2015.07.014>
- Ramirez, G., Chang, H., Maloney, E. A., Levine, S. C., & Beilock, S. L. (2016b). On the relationship between math anxiety and math achievement in early elementary school: The role of problem solving strategies. *Journal of Experimental Child Psychology*, 141, 83–100.  
<https://doi.org/10.1016/j.jecp.2015.07.014>
- Ramirez, G., Shaw, S. T., & Maloney, E. A. (2018). Math Anxiety: Past Research, Promising Interventions, and a New Interpretation Framework. *Educational Psychologist*, 53(3), 145–164.  
<https://doi.org/10.1080/00461520.2018.1447384>
- Richardson, F. C., & Suinn, R. M. (1972). The Mathematics Anxiety Rating Scale: Psychometric data. *Journal of Counseling Psychology*, 19(6), 551–554.  
<https://doi.org/10.1037/h0033456>
- Romiszowski, A. J. (1984). *Producing instructional systems : lesson planning for individualized and group learning activities*. Kogan Page.
- Rusmono. (2010). *Metode Pembelajaran*. Pustaka Pelajar.
- Savery, J. R. (2006a). Overview Of Problem-based Learning : Devinition and Distinction Interdisciplinary. *Journal Problem-Based Learning*, 1(1), 9–20.
- Savery, J. R. (2006b). Overview Of Problem-based Learning : Devinition and Distinction Interdisciplinary. *Journal Problem-Based Learning*, 1(1), 9–20.  
<https://doi.org/10.7771/1541-5015.1002>
- Schmidt, H. G., De Volder, M. L., De Grave, W. S., Moust, J. H. C., & Patel, V. L. (1989). Explanatory Models in the Processing of Science Text: The Role of Prior Knowledge Activation Through Small-Group Discussion. *Journal of Educational Psychology*, 81(4), 610–619. <https://doi.org/10.1037/0022-0663.81.4.610>
- Selby, C., Dorling, M., & Woollard, J. (2015a). Evidence of assessing computational thinking. *IFIP TC3 Working Conference: A New Culture of Learning: Computing and Next Generations*, 232–242.  
[http://www.ifip2015.mii.vu.lt/file/repository/IFIP\\_Proceedings.pdf](http://www.ifip2015.mii.vu.lt/file/repository/IFIP_Proceedings.pdf)

- Selby, C., Dorling, M., & Woollard, J. (2015b). Evidence of assessing computational thinking. *IFIP TC3 Working Conference: A New Culture of Learning: Computing and Next Generations*, 232–242.
- Seo, Y. H., & Kim, J. H. (2016). Analyzing the effects of coding education through pair programming for the computational thinking and creativity of elementary school students. *Indian Journal of Science and Technology*, 9(46), 1–5. <https://doi.org/10.17485/ijst/2016/v9i46/107837>
- Septianingsih, R., & Irwan, I. (2020). An Analysis of student's improvement learning outcome and student's errors based on new man using M-APOS learning approach. *Journal of Physics: Conference Series*, 1554(1). <https://doi.org/10.1088/1742-6596/1554/1/012057>
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). Experimental and Designs for Generalized Causal Inference. *Experimental and Quasi-Experimental Design for Causal Inference*, 814, 1–643.
- Sheffield, D., & Hunt, T. (2016). How Does Anxiety Influence Maths Performance and What Can We do About It? *MSOR Connections*, 6(4), 19–23. <https://doi.org/10.11120/msor.2006.06040019>
- Shute, V. J., Sun, C., & Asbell-Clarke, J. (2017a). Demystifying computational thinking. *Educational Research Review*, 22, 142–158. <https://doi.org/10.1016/j.edurev.2017.09.003>
- Shute, V. J., Sun, C., & Asbell-Clarke, J. (2017b). Demystifying computational thinking. *Educational Research Review*, 22, 142–158. <https://doi.org/10.1016/j.edurev.2017.09.003>
- Silver, A. M., Elliott, L., & Libertus, M. E. (2021). When beliefs matter most: Examining children's math achievement in the context of parental math anxiety. *Journal of Experimental Child Psychology*, 201, 104992. <https://doi.org/10.1016/j.jecp.2020.104992>
- Silver-Hmelo, C. E. (2004). Problem-Based Learning: What and How Do Students Learn? *Educational Psychology Review*, 16(3), 235–266.
- Simbolon, R., & Koeswanti, H. D. (2020). Comparison Of Pbl (Project Based Learning) Models With Pbl (Problem Based Learning) Models To Determine Student Learning Outcomes And Motivation. *International Journal of*

- Elementary Education*, 4(4), 519–529.  
<https://ejournal.undiksha.ac.id/index.php/IJEE>
- Streetland, L. (1993). The design of a mathematics course. A theoretical reflection. *Educational Studies in Mathematics*, 25(1–2), 109–135.  
<https://doi.org/10.1007/BF01274105>
- Suarjana, I. M., Nanci Riastini, N. P., & Yudha Pustika, I. G. N. (2017). Penerapan Pendekatan Kontekstual Berbantuan Media Konkret Untuk Meningkatkan Aktivitas Dan Hasil Belajar. *International Journal of Elementary Education*, 1(2), 103–114. [https://doi.org/https://doi.org/10.23887/ijee.v1i2.11601](https://doi.org/10.23887/ijee.v1i2.11601)
- Sugiyono. (2017). *Metode Penelitian dan Pengembangan*. Alfabeta.
- Supardi. (2017). *Statistik Penelitian Pendidikan*. Rajawali Pers.
- Suriyah, P., Waluya, S. T. B., & Dwijanto, I. R. (2022). Construction Of Mathematics Problem-Based On APOS Theory To Encourage Reflective Abstraction Viewed From Students' Creative Thinking Profile. *Journal of Positive School* ..., 6(9), 1290–1309.
- Syah, M. (2011). *Psikologi Belajar*. Gema Insani.
- Szczygieł, M., & Pieronkiewicz, B. (2022). Exploring the nature of math anxiety in young children: Intensity, prevalence, reasons. In *Mathematical Thinking and Learning* (Vol. 24, Issue 3, pp. 248–266).  
<https://doi.org/10.1080/10986065.2021.1882363>
- Tamur, M., Juandi, D., & Adem, A. M. G. (2020). Realistic Mathematics Education in Indonesia and Recommendations for Future Implementation: A Meta-Analysis Study. *JTAM / Jurnal Teori Dan Aplikasi Matematika*, 4(1), 17.  
<https://doi.org/10.31764/jtam.v4i1.1786>
- Tan, O.-S. (2003). *Problem-Based Learning Innovation: Using problems to power learning in the 21st century*. Cengage Learning.
- Taslibeyaz, E., Kursun, E., & Karaman, S. (2020). How to Develop Computational Thinking: A Systematic Review of Empirical Studies. *Informatics in Education*, 19(4), 701–719. <https://doi.org/10.15388/INFEDU.2020.30>
- The Royal Society. (2012). Shut down or restart? The way forward for computing in UK Schools. In *British Journal of Educational Technology* (Issue January).

- Thili, A., & Chang, M. (2019). *Data Analytics Approaches in Educational Games and Gamification Systems: Summary, Challenges, and Future Insights*. [https://doi.org/10.1007/978-981-32-9335-9\\_13](https://doi.org/10.1007/978-981-32-9335-9_13)
- Torp, L., & Sage, S. (2000). *Problems as Possibilities: Problem-Based Learning for K-12 Education*. Association for Supervision and Curriculum Development, Alexandria, VA.
- Trianto. (2011). *Mendesain Model Pembelajaran Inovatif Progresif*. Penerbit Kencana.
- Turgut, S., & Turgut, İ. G. (2020). Me while i am learning mathematics: Reflections to elementary school students' drawings. *International Electronic Journal of Elementary Education*, 13(1), 139–154. <https://doi.org/10.26822/iejee.2020.179>
- Ueda, A., Baba, T., & Matsuura, T. (2014). Values in Japanese Mathematics Education from the Perspective of Open-ended Approach. *Teaching Innovation*, 27(3), 69–82.
- Umar, S. (2012). *Desain Pembelajaran*. Raja Grafindo Persada.
- Usmadi. (2017). Uji Tukey dan Uji Scheffee : Uji Lanjut (Post Hoc Test). *Jurnal of Information and Computer Technology Education*, 3(2), 1–9.
- Van den Heuvel-Panhuizen, M., & Drijvers, P. (2014). Realistic Mathematics Education. *Encyclopedia of Mathematics Education*, 521–525. [https://doi.org/10.1007/978-94-007-4978-8\\_170](https://doi.org/10.1007/978-94-007-4978-8_170)
- Wang, C.-Y., Gao, B.-L., & Chen, S.-J. (2023). The effects of metacognitive scaffolding of project-based learning environments on students' metacognitive ability and computational thinking. *Education and Information Technologies*.
- Wena, M. (2011). *Strategi Pembelajaran Inovatif Kontemporer*. Bumi Aksara.
- Widana, I. W. (2017). Higher Order Thinking Skills Assessment (HOTS). *Jisae: Journal of Indonesian Student Assesment and Evaluation*, 3(1), 32–44. <https://doi.org/https://doi.org/10.21009/jisae.031.04>
- Widiyatmoko, A., Utaminingsih, S., & Santoso. (2021). Android-based math learning to improve critical thinking. *Journal of Physics: Conference Series*, 1823(1). <https://doi.org/10.1088/1742-6596/1823/1/012091>
- Wing, J. M. (2006). Computational thinking. *Concurrences*, 3, 22–24.

- Wing, J. M. (2008). Computational thinking and thinking about computing. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 366(1881), 3717–3725. <https://doi.org/10.1098/rsta.2008.0118>
- Womack, S. T. (1989). Modes of Instruction. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 62(5), 205–210. <https://doi.org/10.1080/00098655.1989.10114051>
- Young, C. B., Wu, S. S., & Menon, V. (2012). The Neurodevelopmental Basis of Math Anxiety. *Psychological Science*, March. <https://doi.org/10.1177/0956797611429134>
- Zakaria, E., & Syamaun, M. (2017). The Effect of Realistic Mathematics Education Approach on Students' Achievement And Attitudes Towards Mathematics. *Mathematics Education Trends and Research*, 2017(1), 32–40. <https://doi.org/10.5899/2017/metr-00093>
- Zapata-Caceres, M., Martin-Barroso, E., & Roman-Gonzalez, M. (2020). Computational thinking test for beginners: Design and content validation. *IEEE Global Engineering Education Conference, EDUCON*, 2020-April, 1905–1914. <https://doi.org/10.1109/EDUCON45650.2020.9125368>