

## DAFTAR PUSTAKA

- Alghadari, F. (2013). *Pembelajaran Berbasis Masalah untuk Meningkatkan Kemampuan dan Disposisi Berpikir Kritis Matematik Siswa SMA*. Tesis SPS UPI Bandung: tidak diterbitkan.
- Amri. (2009). *Peningkatan Kemampuan Representasi Matematik Siswa SMP melalui Pembelajaran dengan Pendekatan Induktif-Deduktif*. Tesis SPS UPI Bandung: tidak diterbitkan.
- Anitah, S. (2009). Teknologi Pembelajaran. Surakarta: Yurna Pustaka.
- Ariani, N. (2017). Peningkatan Kemampuan Representasi Matematis Dan Motivasi Belajar Siswa Melalui Model Pembelajaran Berbasis Proyek (Project Based Learning) Di Kelas VII SMP Negeri 1 Torgamba Tahun Pelajaran 2016/2017. *Jurnal Pembelajaran dan Matematika Sigma*. 3(1), 38-47.
- Arifin, Z. (2013). *Evaluasi Pembelajaran*. Bandung: PT. Remaja Rosdakarya.
- Arikunto, S. (2002). *Dasar-dasar Evaluasi Pendidikan*. Jakarta: Rajagrafindo Persada.
- Arikunto, S. (2010). *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Artzt, A.F., Armour-Thomas, E., & Curcio, F. R. (2008). *Becoming a reflective mathematics Teacher: A Guide for observations and self-assessment (Studies in mathematical thinking and learning series)*. New York: Lawrence Erlbaum Associates.
- Baroody, A. J. (1993). *Problem Solving, Reasoning and Communicating, K-8: Helping Children Think*. New York: Macmillan Publishing Company.
- Bloom, B. S., Engelhart, M. D., Furst, F. J., Hill, W. H., & Krathwohl, D. R. (1956). Taxonomy of educational objectives: Cognitive domain. New York: McKay.
- Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational psychologist*, 26(3-4), 369-398.

- Boaler, J., & Selling, S. K. (2017). Psychological Imprisonment or Intellectual Freedom? A Longitudinal Study of Contrasting School Mathematics Approaches and Their Impact on Adults' Lives. *Journal for Research in Mathematics Education*, 48(1), 78-105.
- Bonwell, C. C., & Eison, J. A. (1991). Active learning: Creating excitement in the classroom (ASHE-ERIC Higher Education Rep. No. 1). Washington, DC: The George Washington University, School of Education and Human Development.
- Bonwell, C. C. (1998). Active Learning: Energizing the Classroom. Green Mountain Falls, CO: Active Learning Workshops
- Cai, J., Lane, S., dan Jakabcsin, M.S. (1996). The Role of Open-Ended Tasks and Holistic Scoring Rubrics: Assessing Student's Mathematical Reasoning and Communication. Dalam P.C Elliot dan M.J Kenney (Eds). Yearbook Communication in Mathematics K-12 and Beyond. Reston, VA: The National Council of Teachers of Mathematics.
- Castranova, J. A. (2002). Discovery learning for the 21st century: What is it and how does it compare to traditional learning in effectiveness in the 21st century. *Action research exchange*, 1(1), 1-12.
- Creswell, J.W. (2017). *Research Design Pendekatan Kualitatif, Kuantitatif, dan Campuran*. Yogyakarta: Pustaka Pelajar.
- Cockcroft, W.H. (Ed.). (1982). *Mathematics Counts: Report of the Committee of Inquiry into the Teaching of Mathematics in Schools*. London: Her Majesty's Stationery Office.
- Cohen, L., Manion, L. dan Morrison, K. (2007). *Research Method in Education*. New York: Routledge.
- Cuoco, A. A., and Curcio, F. R. (2001). The Roles of Representation in School Mathematics, *NTCM*.
- De Jong, T., & Van Joolingen, W. R. (1998). Scientific discovery learning with computer simulations of conceptual domains. *Review of educational research*, 68(2), 179-201.

- Du, X. Y., & Kolmos, A. (2006). Process competencies in a problem and project based learning environment. In 35th SEFI annual conference: Engineering education and active students.
- English, L. D., & Kirshner, D. (Eds.). (2015). Handbook of international research in mathematics education. Routledge.
- Fitriani, R. (2015). *Pengaruh Pembelajaran Project-Based Learning terhadap Kemampuan Pemecahan Masalah Matematis Dan Kemandirian Belajar Siswa Kelas X*. Skripsi pada FPMIPA UPI. Bandung: Tidak Diterbitkan.
- Fraenkel, dkk. (2012). *How to Design and Evaluate Research in Education*. United States (New York): McGraw-Hill Companies. Inc.
- Foshay, R dan Kirkley, J. (2003). *Principles for Teaching Problem Solving*. Indiana: Plato Learning, Inc.
- Garderen, D. V., Scheuermann, A., dan Jackson, C. (2012). In Mathematics for Students With Learn. Disabil. Q. 35 24–38
- Garderen, D. V., Scheuermann, A., Poch, A., dan Murray, M. M. (2016). Visual Representation in Mathematics : Special Education Teachers ' Knowledge and Emphasis for Instruction.
- Goldin, G. A. (2014). Mathematical representations. In Encyclopedia of Mathematics Education. *Springer Netherlands*. 409-413
- Hackathorn, J., Solomon, E. D., Tennial, R. E., Garczynski, A. M., Blankmeyer, K., Gebhardt, K. & Anthony, J. N. (2010). You get out what you put in: Student engagement affects assessment. Poster presentation: Best Practices in Assessment Conference: Atlanta, GA.
- Hackathorn, J., Solomon, E. D., Blankmeyer, K. L., Tennial, R. E., & Garczynski, A. M. (2011). Learning by Doing: An Empirical Study of Active Teaching Techniques. *Journal of Effective Teaching*, 11(2), 40-54.
- Hendriana, H. dan Sumarmo, U. (2017). *Penilaian Pembelajaran Matematika*. Bandung: Refika Aditama.
- Herdiana, Y., Wahyudin, & Sispiyati, R. (2017). Effectiveness of discovery learning model on mathematical problem solving. In AIP Conference Proceedings (Vol. 1868, No. 1, p. 050028). AIP Publishing.

- Hosnan, M. (2012). Pembelajaran Saintifik dan Kontekstual dalam Pembelajaran Abad 21. Bogor: Ghalia Indonesia.
- Hudojo, H. 2001. *Common Textbook: Pengembangan Kurikulum dan Pembelajaran Matematika*. Malang: JICA Universitas Negeri Malang.
- Hwang, W. Y., Chen, N. S., Dung, J. J., & Yang, Y. L. (2007). Multiple Representation Skills and Creativity Effects on Mathematical Problem Solving using a Multimedia Whiteboard Sy. *Journal of Educational Technology & Society*, 10(2).
- Ilahi, M. T. (2012). Pembelajaran Discovery Strategy & Mental Vocational Skill. Yogyakarta: Diva Press.
- Ismayani, A. (2017). *Perbandingan kemampuan komunikasi dan kreativitas matematik siswa SMK antara siswa yang belajar menggunakan project-based learning melalui pendekatan education dan siswa yang belajar menggunakan project-based learning melalui pendekatan hands-on activity*. Tesis pada SPS UPI. Bandung: Tidak Diterbitkan.
- Jitendra, A. K., Nelson, G., Pulles, S. M., Kiss, A. J., & Houseworth, J. (2016). Is mathematical representation of problems an evidence-based strategy for students with mathematics difficulties? *Exceptional Children*, 83(1), 8-25.
- Karno To. (2003). *Mengenal Analisis Tes (Pengantar ke Program Komputer Anates)*. Bandung: Universitas Pendidikan Indonesia.
- Kartini. (2009). Peranan Representasi Dalam Pembelajaran Matematika. 361-372.
- Kemendikbud. (2014). Lampiran III Peraturan Menteri Pendidikan dan Kebudayaan Nomor 58 tentang Kurikulum 2013 Sekolah Menengah Pertama/Madrasah Tsanawiyah. Jakarta: Kemendikbud RI.
- Kemendikbud. (2014). Materi Pelatihan Guru Implementasi Kurikulum 2013 Tahun Ajaran 2013/2014. Jakarta: Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan dan Penjamin Mutu Pendidikan.
- Kementerian Pendidikan dan Kebudayaan. (2017). Nilai Rata-Rata Sekolah UN. <https://data.go.id/dataset/nilai-rata-rata-sekolah-un>
- Kirkley, J. (2003). Principles for teaching problem solving. USA: PLATO Learning Inc.

- Kirschner, P., Sweller, J., & Clark, R. E. (2006). Why unguided learning does not work: An analysis of the failure of discovery learning, problem-based learning, experiential learning and inquiry-based learning. *Educational Psychologist*, 41(2), 75-86.
- Koutrouba, K., & Karageorgou, E. (2013). Cognitive and socio-affective outcomes of project-based learning: Perceptions of Greek Second Chance School students. *Improving Schools*, 16(3), 244-260.
- Krawec, J. L. (2014). Problem representation and mathematical problem solving of students of varying math ability. *Journal of Learning Disabilities*, 47(2), 103-115.
- Laboy-Rush, D. (2011). Integrated education through project-based learning. Learning. com, <http://www.rondout.k12.ny.us/common/pages/DisplayFile.aspx>.
- Lestari, K. E., dan Yudanegara, M. R. (2015). *Penelitian Pendidikan Matematika (Panduan Praktis Menyusun Skripsi, Tesis dan Karya Ilmiah dengan Pendekatan Kuantitatif, Kualitatif dan Kombinasi Disertasi dengan Model Pembelajaran dan Kemampuan Matematika)*. Bandung: Refika Aditama.
- Machmud, T. (2013). *Peningkatan Matematik, dan Self Efficacy katan Kemampuan Komunikasi, Pemecahan Masalah Matematik, dan Self-Efficacy Siswa SMP melalui Pendekatan Problem-Centered Learning dengan Strategi Scaffolding*. Bandung: Disertasi SPs UPI. Tidak diterbitkan.
- Meltzer, D. E. (2002). *The Relationship between Mathematics Preparation and Conceptual Learning Gains in Physics: a Possible Hidden Variable in Diagnostic Pretest Scores*. [Online]. Tersedia [http://physicseducation.net/docs/Addendum\\_on\\_normalized\\_gain.pdf](http://physicseducation.net/docs/Addendum_on_normalized_gain.pdf) [5 Januari 2018].
- Mihardi, dkk. (2013). The Effect of Project Based Learning with KWL Worksheet on Student Creative Thinking Process in PhysicsProblem. *Journal of Education and Practice*, 4:25.
- Montague, M. (1992). The effects of cognitive and metacognitive strategy instruction on the mathematical problem solving of middle school students with learning disabilities. *Journal of learning disabilities*, 25(4), 230-248.

- Morgan, G., Furse, E., dan Nicolson, R.I. (1995), *Learning Problem Solving Heuristics From Worked Examples, First European Cognitive Science Conference*. INRIA Press.
- Mosca, J. & Howard, L. (1997). Grounded learning: Breathing life into business education. *Journal of Education for Business*. 73, 90-93
- Muhamad, N. (2016). Pengaruh Metode Discovery Learning untuk Meningkatkan Representasi Matematis dan Percaya Diri Siswa. *Jurnal Pendidikan UNIGA*. 10(1): 9-22.
- Nasution, M.H. (2014). *Penerapan Pembelajaran Project Based Learning (Pjbl) Untuk Meningkatkan Kemampuan Pemecahan Masalah Dan Dampaknya Pada Self Efficacy Matematika Siswa Mts*. Bandung: Thesis UNPAS. Tidak diterbitkan.
- National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Reston, VA: Author.
- National Council of Teachers of Mathematics (NCTM). (2018). *Rigor, Relevance, and Relationships: Making Mathematics Come Alive with Project-Based Learning by the Teachers of Mathematics, Inc*. Reston, Va.: Author.
- Ngalimun. (2014). *Strategi dan Model Pembelajaran*. Yogyakarta: Aswaja Pressindo.
- Nunn, R., Brandt, C., & Deveci, T. (2016) Project-Based Learning as a Holistic Learning Framework: Integrating 10 Principles of Critical Reasoning and Argumentation
- Pape, S. J., dan Tchoshanov, M. A. (2001). The role of representation (s) in developing mathematical understanding. *Theory into practice*, 40(2), 118-127.
- Permendiknas. (2006). Lampiran Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 22 Tahun 2006 Tentang Standar Isi. Jakarta: BSNP.
- Papert, S. (2000). What's the big idea?: Toward a pedagogy of idea power. *IBM Systems Journal* . 39(3/4), 720-729.
- Polya, G. (1957). *How to solve it: A new aspects of mathematical methods*. Prentice University Press.

- Puspita, E., Noer, S.H., Gunowibowo, P. (2017). Efektivitas Guided Discovery Learning Ditinjau dari Kemampuan Representasi Matematis dan Self Efficacy. *Jurnal Pendidikan Matematika Unila*. 5(7).
- Ratih, R., Sunardi, S., & Dafik, D. (2013). Identifikasi Faktor Penyebab Rendahnya Penguasaan Materi Dalam Ujian Nasional Matematika Sma Program Ipa Tahun Ajaran 2009/2010 Di Kabupaten Banyuwangi. *Pancaran Pendidikan*, 2(1), 185-196.
- Ratnasari, N., Tadjudin, N., Syazali, M., Mujib dan Andriani, S. (2018). Project Based Learning (PjBL) Model on the Mathematical Representation Ability. *Tadris: Jurnal Keguruan dan Ilmu Tarbiyah*. 3 (1): 47-53.
- Rittle, J. B., Siegler, R. S., dan Alibali, M. W. (2001). Developing conceptual understanding and procedural skill in mathematics: An iterative process. *J. Educ. Psychol.* 93 346–62.
- Robertson, S. I. (2001). *Problem Solving*. East Sussex, England: Psychology Press.
- Rohaeti, T. (2017). Peningkatan Kemampuan Penalaran dan Komunikasi Matematik Serta Motivasi Belajar Siswa SMP Melalui Penerapan Metode Discovery Learnng.
- Rosdianwinata, E. (2015). Penerapan Metode Discovery untuk Meningkatkan Kemampuan Pemecahan Masalah Matematika Siswa. *MENDIDIK: Jurnal Kajian Pendidikan dan Pengajaran*, 1(1), 1-8.
- Rosenbloom, P. S., Laird, J. E., McDermott, J., Newell, A., & Orciuch, E. (1985). R1-Soar: An experiment in knowledge-intensive programming in a problem-solving architecture. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, (5), 561-569.
- Ruseffendi, E.T. (2005). *Dasar-dasar penelitian & bidang non-eksakta lainnya*. Bandung: Tarsito.
- Ruseffendi, E.T. (2006). *Pengantar kepada membantu guru mengembangkan kompetensinya dan pengajaran matematika untuk meningkatkan CBSA*. Bandung: Tarsito
- Salkind, G.M. (2007). *Mathematical Representation*. George Mason University.
- Slavin, R. (2005). *Cooperative Learning: Theory, Research and Practice*. London: Allymand Bacon.

- Sani, R. A., (2014). *Pembelajaran Saintifik untuk Implementasi Kurikulum 2013*. Jakarta: Bumi Pustaka.
- Santos-Trigo, M., (2014). Problem solving in mathematics education. In Encyclopedia of mathematics education (pp. 496-501). Springer, Dordrecht.
- Sekolah Kita. (2018). (20227901) SMAN 1 PARONGPONG. <http://sekolah.data.kemdikbud.go.id/index.php/chome/profil/4C71A2F8-E0A5-496B-B170-5EA95034546F>.
- Stacey, K. (2005). The Place of Problem Solving in Contemporary Mathematics Curriculum Document. *Journal of Mathematical Behaviour*, 24, 341-350.
- Stalheim-Smith, A. (1998). Focusing on Active, Meaningful Learning. IDEA Paper No. 34.
- Stievenart, M., Roskam, I., Meunier, J. C., & Van de Moortele, G. (2011). The reciprocal relation between children's attachment representations and their cognitive ability. *International Journal of Behavioral Development*, 35(1), 58-66.
- Sugiyono. (2003). *Statistika untuk Penelitian*. Bandung: CV Alfabeta.
- Suherman, E. (2003). *Evaluasi Pengajaran Matematika*. Bandung: UPI
- Sumarmo, U. (1999). *Suatu Alternatif Pengajaran untuk Meningkatkan Kemampuan Pemecahan Masalah Matematik pada Guru dan Siswa SMP*. Laporan Penelitian. FPMIPA IKIP Bandung: tidak diterbitkan.
- Sumarmo, U. (2005). *Pengembangan Matematika untuk Mendukung Pelaksanaan Kurikulum Berbasis Kompetensi*. Makalah pada Pertemuan MGMP Matematika SMPN 1 Tasikmalaya.
- Sumarmo, U. (2005). *Pengembangan Berfikir Matematik Tingkat Tinggi Siswa SLTP dan SMU serta Mahasiswa Strata Satu (S1) Melalui Berbagai Pendekatan Pembelajaran*. Laporan Penelitian Hibah Pascasarjana Tahun Ketiga. UPI Bandung.
- Suryasubroto, B. (2009). Proses Belajar Mengajar di Sekolah. Jakarta: Rineka Cipta.
- Syah, M. (2013). Psikologi Pendidikan dengan Pendekatan Baru. Bandung: Remaja Rosdakarya.

- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive science*, 12(2), 257-285.
- Taylor and Francis. (2001). The Role of Representation(s) in Developing Mathematical Understanding. *Theory Into Practice*. 40(2): 118-127.
- Thomas, J. W. (2000). A review of research on project-based learning. Autodesk Foundation, San Rafael, CA. [http://www.bie.org/index.php/site/RE/pbl\\_research/29](http://www.bie.org/index.php/site/RE/pbl_research/29), access in, 25, 04-15.
- Treagust, D. F. dan Mills, J. E. (2003). Engineering Education-is Problem Based or Project Based Learning the Answer? Australia: Australasian Association for Engineering Education Inc.
- Trianto. (2009). *Model-model Pembelajaran Inovatif Berorientasi Konstruktivistik*. Jakarta: Prestasi Pustaka Publisher.s
- Trilling, B. dan Fadel, C (2009). *21<sup>st</sup> Century Skills: Learning for Life in Our Times*. San Fransisco: John Wiley & Sons.
- Trung, T. (2014). Discovery learning with the help of the geogebra dynamic geometry software. Internationsal Journal of Learning, Teaching and Educational Research, 7(1).
- Widakdo, W. A. (2017). Mathematical Representation Ability by Using Project Based Learning on the Topic of Statistics. In *Journal of Physics: Conference Series* (Vol. 895, No. 1, p. 012055). IOP Publishing.
- Yusuf, A. (2014). *Metode Penelitian: Kuantitatif, Kualitatif dan Penelitian Gabungan*. Jakarta: Prenamedia Group.