

DAFTAR PUSTAKA

- Ajeyalemi, D. A. (1993). *Teacher Strategies Used by Exemplary STS Teacher. What Research Says to The Science Teaching, VII*. Washington DC: National Science Teachers Association.
- Al-Diban, S. dan Ifenthaler, D. (2011). Comparison of Two Analysis Approaches for Measuring Externalized Mental Models. *Jurnal: Educational Technology & Society*. Vol. 14 (2), 16–30.
- Arends, R.I. (1989). *Learning to Teach (International Edition)*. Singapore: McGraw Hill Book Co.
- Arikunto, S. (2005). *Dasar-dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara.
- Bolles, R. N. (2002). *What Color Is Your Parachute? 2002: A Practical Manual for Job-Hunters and Career Changers*. Berkeley: Ten Speed Press.
- Borg, W.R. dan Gall, M.D. (1983). *Educational research (4th ed.)*. New York: Longman.
- Brookes, D.T., Mestre, J., dan Stine-Morrow, E.A.L. (2007). “Reading Time as Evidence for Mental Models in Understanding Physics”. *AIP Conference Proceedings*. Vol.951, p.65-68. Animation Game: the Role of Presentation Format on Mental Model
- Burzan, T. (2008). *Mind Map: The Ultimate Thinking Tool*. London: Thorsons.
- Chan, M.S. dan Black, J.B. (2006). “Learning Newtonian Mechanics with an animation game: The role of presentation format on mental model Acquisition”. Paper presented at the Annual Meeting of the *American Educational Research Association (AERA)*, San Francisco, California.
- Chi, M.T.H., Feltovich, P.J., dan Glaser, R. (1981). Categorization and Representation of Physics Problems by Experts and Novices. *Journal of Cognitive Science*. Vol.5, (2), 121-152.
- Clement, J.J dan Steinberg, M.S. (2002). Step-wise evolution of mental models of electric circuits: A “learning-aloud” case study. *The journal of learning Science*, Vol. 11 (4), p: 389-452.

- Coll, R.K. (2008). Chemistry Learners' Preferred Mental Models for Chemical Bonding. *Journal of Turkish Science Education*. Vol.5, (1), 22-47.
- Corpuz, E.D. dan Rebello, N. S. (2011a). Investigating students' mental models and knowledge construction of microscopic friction. I. implications for curriculum design and development. *Physics Review Special Topics PER*. Vol. 7, (2), 020102-1 - 020102-9 .
- Corpuz, E. D. dan Rebello, N. S. (2011b). Investigating students' mental models and knowledge construction of microscopic friction. II. implications for curriculum design and development. *Jurnal: Physics Review Special Topics PER*. Vol.7, (2), 020103-1 – 020103-8.
- Demirci, N. (2005). A Study About Students' Misconceptions in Force and Motion Concepts by Incorporating A Web-Assisted Physics Program. *The Turkish Online Journal of Educational Technology – TOJET July 2005 ISSN: 1303-6521 volume 4 Issue 3 Article 7*
- Dhillon, A.S. (1998). Individual differences within problem-solving strategies used in physics. *Journal of Science Education*. Vol. 82, Issue. 3, p. 379-405.
- Didiș, N., Eryılmaz, A., dan Erkoç, Ş. (2014). Investigating students' mental models about the quantization of light, energy, and angular momentum. *Jurnal: Physics Review Special Topics PER*. Vol.10 020127
- Fuchs, H. U. (1987). Thermodynamics: A Misconceived Theory. Paper presented at the Second International Seminar on Misconceptions and Educational Strategies in Science and Mathematics, July 26-29, 1987, Cornell University, Ithaca, New York, USA. J.D. Novak, ed.: *Proceedings*, vol. 3, 160-167.
- Gilbert, J. K. (ed.). (2005). Mental models: theoretical issues for visualizations in science education. *Journal Visualization in Science Education*. 43-60.
- Greca, I. M. dan Moreira, M. A. (2000). Mental Models, Conceptual Models, and Modelling. *International Journal of Science Education*. Vol. 22, 1-11.
- Greca, I. M. dan Moreira, M. A. (2002). Mental Physical, and Mathematical Models in The Teaching and Learning of Physics. *Science Education*. Vol. 86, 106–121.

- Halliday, D., Resnick, R., dan Walker, J. (2007). *Fundamentals of Physics, 8th Edition*. USA: John Wiley & Sons, Inc.
- Harrison, A. G. dan Treagust, D. F. (2000). Learning about Atoms, Molecules, and Chemical Bonds: a Case Study of Multiple-Mode Use in Grade 11 Chemistry. *Science Education*. Vol.84, 352-381.
- Heller, P., Keith, R., dan Anderson, S. (1992). Teaching problem solving through cooperative grouping. Part 1: Group versus individual problem solving. *American Journal Physics (Am.J.Phys)*. Vol. 60, (7), 627-636.
- Heller, K. dan Heller, P. (1999). *Problem-Solving Labs. Introductory Physics I Mechanics. Cooperative Group problem-solving in physics*. Minnosota: University of Minnosota.
- Heller, K. dan Heller, P. (2010). *Cooperative Problem Solving in Physics. A User Manual*. Minnosota: University of Minnosota.
- Heuvelen, A.V. (2001). The Workplace, Student Minds, and Physics Learning Systems. *American Journal of Physics* 69(11):1139-1146.
- Hollabaugh, M. (1995). *Problem Solving in Cooperative Group*, Ph.D Dissertation, University of Minnesota.
- Holth. (2008). What is a Problem? Theoretical Conceptions and Methodological Approaches to The Study of Problem Solving. *European Journal of Behaviour Analysis*.
- Hrepic, Z., Zollman, D.A., dan Rebello, N.S. (2010). Identifying Students' mental model of sound propagation: The role of conceptual blending in understanding conceptual change. *Journal Physics Review Special Topics PER*. Vol.6, 020114.
- Itza-Ortiz, S.F., Rebello, S., dan Zollman, D. (2004). Students' Models Of Newton's second Law in Mechanics and Electromagnetism. *Europe Journal Physics*. Vol.25.
- Jansoon, N., Coll, R.K., dan Somsook, E. (2009). Understanding mental models of dilution in Thai students. *International Journal of Environmental & Science Education*. Vol.4, (2), 147-168.

- Jensen, E. (2008). *Brain-Based Learning. Pembelajaran Berbasis Kemampuan Otak. Cara Baru dalam Pengajaran dan Pelatihan*. Yogyakarta: Pustaka Pelajar.
- Johnson-Laird, P.N. (1980). Mental Models in Cognitive Science. *Journal of Cognitive Science*. Vol.4, 71-115.
- Ke, J., Monk, M., dan Duschl, R. (2005). Learning Introductory Quantum Physics: Sensori-motor experiences and mental models. *International Journal of Science Education*. Vol.27, (13), 1571-1594.
- Khan, M. A. (2009). Teaching of Heat and Temperature by Hypothetical Inquiry Approach: A Sample of Inquiry Teaching. *Journal Physics Teacher Education Online (JPTEO)*. Vol.5, (2), 43-64.
- Khanthavy, H. dan Yuenyong, C. (2012). Examining Lao Student's Mental Model of Force and Motion. *European Journal of Social Sciences*. Vol.35, (3), 273-283.
- Komariah, K. (2011). Penerapan metode pembelajaran problem solving model Polya untuk meningkatkan kemampuan memecahkan masalah bagi siswa kelas IX J SMPN 3 Cimahi. Yogyakarta: Prosiding Seminar Nasional Penelitian, Pendidikan dan Penerapan MIPA. UNY.
- Koponen, I.T., (2007). Models and Modelling in Physics Education: A Critical Re- analysis of Philosophical underpinnings and Suggestions for Revisions. . Jurnal: *Science and Education*. Vol.16. p:751-773.
- Korsunsky, B. (2004). Ready, SET, Go! Aresearch-Based Approach to Problem Solving. *Jurnal The Physics Teacher*. Vol. 42, 493-497.
- Lee, G., Shin, J., Park, J., Song, S., Kim, Y., dan Bao, L. (2005). Alternative conceptions, memory, & mental models in physics. *AIP*. Vol. 790,165(2005) *American Institute of Physics*.
- Lin, Shih-Yin, dan Singh, Chandralekha. (2013). Using an isomorphic problem pair to learn introductory physics: transferring from a two-step problem to a three-step problem. *Physical review special topics- Physics education research*. Vol. 9, 020114-1 sd 020114-21.
- Maloney, D.P., O'Kuma, T.L., Hieggelke, C.J., dan Heuvelen, A.V. (2001). Surveying students' conceptual knowledge of electricity and magnetism. *American Journal of Physics*. vol. 69.
- Mansyur, J. (2010). *Kajian fenomenografi aspek-aspek model mental Subyek lintas level akademik dalam Problem solving konsep dasar mekanika*.

Desertasi Doktor pada Jurusan Pendidikan IPA SPs UPI Bandung: tidak diterbitkan.

- Mark, J.B. (2012). *Understanding Key Concepts of Electric Circuits Student' use of Mental Models*. Thesis submitted for a Ph.D. Degree. University of York.
- McComb, S., Kennedy, D., Perryman, R., Warner, N., dan Letsky, M. (2010). Temporal Patterns of Mental Model Convergence: Implications for Distributed Teams Interacting in Electronic Collaboration Spaces. *Journal of Human Factor*. Vol.52, (2), 264–281.
- McDermott, L.C., Shaffer, P.S., dan Constantinou, C.P. (2000). Preparing teachers to teach physics and physical science by inquiry. *Jurnal: Physics Education*. 35 (6), 411-416.
- Meltzer, E.D. (2002). The Relationship between Mathematics Preparation and Conceptual Learning Gains in Phisics: A possible Hidden Variable in Diagnostic Pretest Score. *American Journal of Physics*. vol.70, (2), 1259-1268.
- Mento, A. J., Martinelli, P., dan Jones, R. M. (1999). Mind Mapping in Executive Education: Applications and Outcomes. *Journal of Management Development* 18(4). 390-416.
- Menteri Riset, Teknologi, dan Pendidikan Tinggi. (2015). *Peraturan Menteri Riset, Teknologi, dan Pendidikan Tinggi No. 44 Tahun 2015: Standar Nasional Pendidikan Tinggi*. Jakarta: Kemenristekdikti.
- Muslim. (2014). *Pengembangan Program Perkuliahan Fisika Sekolah Berorientasi Kemampuan Argumentasi Calon Guru Fisika*. Disertasi Doktor pada Jurusan Pendidikan IPA SPs UPI Bandung: tidak diterbitkan.
- Neidderer, H. (2006). Learning process studies-aims. Theoretical approaches, methods and selected results. *European Science Education Research in Science Teaching*. Braga Portugal.
- Ormrod, J. E. (2012). *Human learning*. United States of America: Pearson Education
- Ornek, F. (2008). Models in science education: Aplications of models in learning and teaching science. *International Journal of Environmental & Science Education*. Vol.3, (2), 35–45.

- Özcan, Ö. (2011). What are the students' mental models about the "spin" and "photon" concepts in modern physics?. *Procedia Social and Behavioral Sciences*. Vol.15, 1372–1375.
- Park, E. J. dan Light, G. (2009). Identifying Atomic Structure as a Threshold Concept: Student mental models and troublesomeness. *International Journal of Science Education*. Vol.31, (2), 233–258.
- Puspitasari, I.D. (2012). *Pengembangan Perkuliahan Dasar-dasar Kimia Analitik dengan Open-Ended Experiment Berbasis Investigasi Kelompok untuk Meningkatkan Kemampuan Problem Solving dan Penguasaan Materi Mahasiswa Calon Guru*. Disertasi Doktor pada Jurusan Pendidikan IPA SPs UPI Bandung: tidak diterbitkan.
- Rebello, N.S. dan Zollman, D.A. (2005). Trends in Physics Education Research-a Personal Perspective. Diakses melalui https://web.phys.ksu.edu/papers/2005/DZ_NSF_TrendsInPER.pdf
- Redish, E.F. (2004). "A Theoretical Framework for Physics Education Research: Modeling Student Thinking". In E. Redish and M. Vicentini (Eds.), *Proceedings of the Enrico Fermi Summer School, Course CLVI* (Italian Physical Society, 2004).
- Riduwan. (2012). *Skala Pengukuran Variabel-variabel Penelitian*. Bandung: Alfabeta.
- Riswanto dan Putra, P.P. (2012). The Use of Mind Mapping Strategy in the Teaching of Writing at SMAN 3 Bengkulu, Indonesia. *International Journal of Humanities and Social Science*. Vol. 2 No. 21; November 2012
- Rusman. (2012). *Model-model Pembelajaran*. Depok: PT. Rajagrafindo Persada.
- Scherr, R. E. (2007). Modelling Student Thinking: An Example from Special Relativity. *American Journal Physics*. vol.75, (3), 272-280.
- Serway dan Jewett. (2004). *Physics for Scientists and Engineers 6th Edition*. Pomona: Thomson Brooks/Cole.
- Simanjuntak, M.P. (2012). *Pengembangan Model Pembelajaran Fisika Dasar Berbasis Problem Solving untuk meningkatkan Kemampuan Metakognisi dan Pemahaman Konsep Mahasiswa*. Disertasi Doktor pada Jurusan Pendidikan IPA SPs UPI Bandung: tidak diterbitkan.

- Singh, C. (2008a). Assessing Student Expertise in Introductory Physics with Isomorphic Problems. I. Performance on Nonintuitive Problem Pair from Introductory Physics. *Phys. Rev. ST Phys. Educ. Res.* 4, 010104.
- Singh, C. (2008b). Assessing Student Expertise in Introductory Physics with Isomorphic Problems. II. Effect of Some Potential Factors on Problem Solving and Transfer. *Phys. Rev. ST Phys. Educ. Res.* 4, 010105.
- Slavin, R.E. (1994). *Educational Psychology Theory: Theory and Practice. Fourth Edition.* Massachusetts: Allyn and Bacon Publishers.
- Stagger, N. dan Narcio, A.F. (1993). Mental Models: concept for human-computer interaction research. *International Journal Man-Machine Studies.* Vol.38, 587-605.
- Sugiyono. (2015). *Statistika untuk Penelitian.* Yogyakarta: Alfabeta
- Supriyatman, Suhandi, A., Rusli, A., dan Rusdiana, D. (2014). The Profile of Student Physics Education Mental Model in Electricity and Magnetism Concepts Using Problem Solving Test. *International Journal of Science and Research.* Vol. 3 Issue 8. p. 2093-2097. Agustus 2014.
- Supriyatman dan Sukarno, (2014). Improving Science Process Skills (SPS) Science Concepts Mastery (SCM) Prospective Student Teachers Through Inquiry Learning Instruction Model By Using Interactive Computer Simulation. *International Journal of Science and Research.* Vol. 3 Issue 2. p. 6-9. Februari 2014
- Tanel, Z. dan Erol, M. (2008). Students' Difficulties in Understanding the Concepts of Magnetic Field Strength, Magnetic Flux Density and Magnetization. *Lat. Am. J. Phys. Educ.* Vol. 2, No. 3.
- Tipler, P.A. (1996). *Fisika untuk Sains dan Teknik, edisi ketiga, Jilid 2.* Jakarta: Erlangga.
- UNESCO. (2010). *Teaching and Learning for a Sustainable Future.*
- Vosniadou, S. dan Brewer, W. F. (1994). Mental Models of the Day/Night Cycle. *Cognitive Science Journal.* Vol.18, 123-183.

- Vosniadou, S., Skopeliti, I., dan Ikospentaki, K. (2004). Modes of Knowing and Ways of Reasoning in Elementary Astronomy. *Journal Cognitive Development*. Vol.19, 203-222.
- Walsh, L. N., Howard, R. G., dan Bowe, B. (2007). Phenomenographic Study of Students' problem solving approaches in physics. *Journal Physics Review Special Topics PER*. Vol.3, 020108.
- Wang, C.Y. (2007). *The Role of Mental-Modeling Ability, Content Knowledge, and Mental Models in General Chemistry Students' Understanding about Molecular Polarity*. Ph.D Dissertation Columbia: University of Missouri.
- Wenning, C.J. (2011). Experimental Inquiry in Introductory Physics Courses. *Journal of Physics Teacher Education Online (JPTO)*. 2 (6), 2-16.
- Yayla, R. G. dan Eyceyurt, G. (2011). Mental Models of Pre-Service Science Teachers about Basic Concepts in Chemistry. *Journal: WAJES. Dokuz Eylul University Institute, Izmir, Turkey*. ISSN 1308-8971.
- Zacharia, Z. dan Anderson, O.R. (2003). The effects of an interactive computer-based simulation prior to performing a laboratory inquiry-based experiment on students' conceptual understanding of physics. *American Journal of Physics*. vol.71, (6), 618-629.