

DAFTAR PUSTAKA

- Achmadi, A. & Narbuko, C. (2008). *Metodologi Penelitian*. Jakarta: Bumi Aksara.
- Achsin, A. (1986). *Media Pendidikan dalam Kegiatan Belajar Mengajar*. Ujung Pandang: Penerbit IKIP Ujung Pandang.
- Aktamis, H. and Ergin, O. (2008). The effect of scientific process skill education on student's scientific creativity, science attitudes and academic achievements. *Asia-Pacific forum on science learning and teaching*, 9(4): 1-21.
- Al Musawi, A., *et al.* (2015). Effectiveness of E-Lab Use in Science Teaching at The Omani Schools. *The Turkish Online Journal of Educational Technology*, volume 14 issue 1.
- Ayas, A., & Tatli, Z., (2010). Virtual Laboratory Applications in Chemistry Education. *Procedia Social and Behavioral Sciences* 9 (2010) 938-942.
- Ayas, A., & Tatli, Z., (2012) . Virtual Chemistry Laboratory: Effect of Constructivist Learning Environment. *Turkish Online Journal of Distance Education- TOJDE*. Volume 13, Number: 1, Article 12.
- Beyer, Barry K. (1991). *Teaching Thinking Skills: A Hand Book for Elementary School Teacher*. New York: Allyn and Bacon.
- Blazquez., *et.al.* (2009). A Virtual Laboratory Structure for Developing Programming Labs. *International Journal of Emerging Technologies in Learning (iJET)*.
- Borg & Gall. (2003). *Educational Research: An Introduction. Seventh Edition*. Amerika: Pearson.
- Chang, R. (2010). *Kimia Dasar : Konsep-Konsep Inti Jilid 2*, Jakarta: Erlangga.
- Dahar, R.W. (1989). *Teori-Teori Belajar*. Jakarta: Erlangga.
- Dale, E. (1969). *Audiovisual Methods in Teaching*. (Third Edition). New York: The Dryden Press, Holt, Rinehart and Winston, Inc.
- Dalgarno B., Bishop A. G., Adlong W. and Bedgood Jr. D. R. (2009), Effectiveness of a Virtual Laboratory as a Preparatory Resource for Distance Education Chemistry Students. *Comput. Educ.*, 53(3), 853–86.
- Depdiknas (2006). *Permendiknas No 22 Tahun 2006 Tentang Standar Isi*. Jakarta: Depdiknas.

- Douglas, J. E. (1990). Visualization Of Electron Clouds In Atoms And Molecules. *Journal of Chemical Education*, 67, 42-44.
- Firman, H. (2000). *Penilaian Hasil Belajar dalam Pengajaran Kimia*. Bandung: Universitas Pendidikan Indonesia.
- Flavel, J. H. (1970). *Metacognitive Aspects of Problem Solving*. In L.B. Resnick (Ed). *The nature of intelligence*. Hillsdale, NJ: Erlbaum.
- Gagne, R.M, (1977). *The Conditions of Learning*. New York: Holt, Rinehart and Winston.
- Graybeal, W dan Pooch, Udo. (1980). *Simulation Principles and Methods*. Cambridge: Winthrop Publishers Inc.
- Greenbowe, T. (1994). An Interactive Multimedia Software Program for Exploring Electrochemical Cells. *Journal of Chemical Education*, 71, 555-557.
- Herga, N. R. & Dinevski, D. (2012). "Virtual Laboratory in Chemistry – Experimental Study of Understanding, Reproduction and Application of Acquired Knowledge of Subject's Chemical Content". *Organizacija*. May-June 2012, 45, (3), 108-116.
- Herron, J.D. et.al. (1977). Problem Associated With Concept Analysis. *Journal Science Education*. 61. (2). 185-199.
- Ipek, H., Kala, N., Yaman, F., & Ayas, A. (2010). Using POE Strategy to Investigate Student Teachers' Understanding About the Effect of Substance Type on Solubility. *Procedia Social and Behavioral Sciences*, 2, (648-653).
- Johnstone, A. H. (1991). Why is Science Difficult to Learn? Things are Seldom Why They Seem. *Journal of Computer Assisted Learning*, 7, 75-83.
- Johnstone, A. H. (2000). Teaching of Chemistry-Logical or Psychological?. *Chemistry Education: Research and Practice in Europe*, Vol. 1, No. 1, 9-15.
- Josephsen & Kristensen (2006), Simulation of Laboratory Assignments to Support Students' Learning of Introductory Inorganic Chemistry. *Chemistry Education Research and Practice*, 7(4), 266-279.
- Kementerian Pendidikan dan Kebudayaan. (2013). *Salinan Permendikbud No. 65 Tahun 2013 tentang Standar Proses*. Jakarta: Kemdikbud.
- Lewis, N. S. (1993). The Caltech Chemistry Animation Project. *Journal of Chemical Education*, 70, 739-740.

- Liu X., (2006), Effects of combined hands-on laboratory and computer modeling on student learning of gas laws: a quasiexperimental study, *J. Sci. Educ. Technol.*, 15 (1), 89–100.
- Markawi, N. (2015). Pengaruh Keterampilan Proses Sains, Penalaran, dan Pemecahan Masalah Terhadap Hasil Belajar Fisika. *Jurnal Formatif* , 3(1), 11-25.
- Nasution, P. S. (2014). *Efektivitas Pembelajaran Berbasis Praktikum Terhadap Keterampilan Proses Sains dan Sikap Ilmiah Siswa: Artikel FKIP Universitas Lampung: Bandar Lampung.*
- Raviolo, A. (2001). Assessing Students' Conceptual Understanding of Solubility Equilibrium. *Journal of Chemical Education*, 78 (5), 629-631.
- Redish, F. E., Jeffery S. M. & Steinberg R. N. (1997). *On the effectiveness of active engagement microcomputer based laboratories.* Department of Physics, University of Maryland College Park, MD20742.
- Riduwan. (2002). *Skala Pengukuran Variabel-Variabel Penelitian.* Bandung: Alfabeta.
- Russell, J. W., Kozma, R. B., Jones, T., Wykoff, J., Marx, N., Davis, J. (1997). Use of Simultaneous-Synchronized Macroscopic, Microscopic, and Symbolic Representations to Enhance the Teaching and Learning of Chemical Concepts. *Journal of Chemical Education*, 74, 330-334.
- Rustaman, N, *et.al.* (2005). *Strategi Belajar Mengajar Biologi.* Malang: UM Press
- Rustaman, N. dan Rustaman A. (2003). *Peranan Pertanyaan Produktif dalam Pengembangan KPS dan LKS.* Bahan Seminar dan Lokakarya bagi Guru-Guru SLTP dan SMU di FPMIPA UPI.
- Semiawan, C. (1985). *Pendekatan Keterampilan Proses: Bagaimana Mengaktifkan Siswa dalam Belajar?.* Jakarta: Gramedia.
- Semiawan, C. (1987). *Pendekatan Keterampilan Proses.* Jakarta: Gramedia.
- Shaheen, J. and Khattab, K. (2005). *School Lab and Its Role in Science Instruction.* Usra Publishing: Amman, Jordan.
- Silberberg, M.S. (2010). *Principles of General Chemistry Second Edition.* New York: The McGraw-Hill Companies.
- Sitinjak, D. (2014). *Pengembangan Program Simulasi Materi Kelarutan dan Hasil Kali Kelarutan untuk Membangun Pemahaman Konsep dan Keterampilan Proses Sains Siswa: Tesis FPMIPA UPI: Bandung.*
- Subiantoro, A.W. (2010). *Pentingnya Praktikum dalam Pembelajaran IPA: Makalah yang disampaikan pada Kegiatan PPM "Pelatihan Pengembangan Praktikum IPA Berbasis Lingkungan" bagi guru-guru MGMP IPA SMP Kota Yogyakarta.*

- Sudirman, N. *et al.* 1992. *Ilmu Pendidikan*. PT. Remaja Rosdakarya: Bandung.
- Svec, M. T. ve Anderson, H.(1995). Effect of Microcomputer Based Laboratory on Students Graphing Interpretation Skills and Conceptual Understanding of Motion, *Dissertation Abstract International*, 55, 8, 23-38, New York.
- Trowbidge, L. W., & Byee, R. W. (1990). *Becoming a Secondary School Science Teacher*. Colombus, OH: Merrill Publishing Company.
- Wetzel, D. R. (2008) . Problem Solving and Science Process Skills. [http://teachertipstraining.suite101.com/article.cfm/problem solving and science process skills](http://teachertipstraining.suite101.com/article.cfm/problem_solving_and_science_process_skills).
- Whyne, H. (1985). *Teaching Learning Primary Science*. London: Harper dan Row Ltd.
- Winberg, T. M., & Berg, C. A. R. (2007). Students' Cognitive Focus During a Chemistry Laboratory Exercise: Effects of a Computer-Simulated Prelab. *Journal of Research in Science Teaching*, 44(8), 1108–1133.
- Woodfield B. F., Andrus M. B., Andersen T., Miller J., Simmons B., Stanger R., Waddoups G. L., Moore M. S., Swan R., Allen R., Bodily G., (2005), The Virtual ChemLab Project A Realistic and Sophisticated Simulation of Organic Synthesis and Organic Qualitative Analysis, *J. Chem. Educ.*, 82(11), 1728.
- Woodfield B. F., Catlin H. R., Waddoups G. L., Moore M. S., Swan R., Allen R. and Bodily G., (2004), The Virtual ChemLab Project: A Realistic and Sophisticated Simulation of Inorganic Qualitative Analysis, *J. Chem. Educ.*, 81(11), 1672.
- Yaron D., Evans K. L. and Karabinos, M. (2003), Scenes and Labs Supporting Online Chemistry, *Paper presented at the 83rd Annual AERA National Conference*.