

DAFTAR PUSTAKA

- Aktamis, H. & Yenice, N. (2010). Determination of the process skills and critical thinking skill level. *Procedia Social and Behavioral Sciences*, 2, hlm. 3281-3288.
- Alfieri, L., Brooks, P.J. & Aldrich, N.J. (2011). Does discovery-based instruction enhance learning? *Journal of Educational Psychology*, 103 (1), hlm. 1-18.
- Ango, L.M. (2002). Mastery of science process skills and their effective use in the teaching of science: an educology of science education in the Nigerian context. *International Journal of Educology*, 16 (1), hlm. 11-30.
- Anyafulude, J.C. (2013). Effects of problem-based and discovery-based instructional strategies on students' academic achievement in chemistry. *Journal of Educational and Social Research*, 3 (6), hlm. 105-111.
- Arikunto, S. (2013). *Dasar-dasar evaluasi pendidikan*. Edisi 2. Jakarta: Bumi Aksara.
- Balim, A.G. (2009). The effect of discovery learning on students' success and inquiry learning skills. *Eurasian Journal of Educational Research*, 35, Hlm. 1-20.
- Borthick, A. F. & Jones, D. R. (2000). The motivation for collaborative discovery learning online and its application in an information systems assurance course. *Issues in Accounting Education*, 15 (2), hlm. 2-10.
- Budiningsih, A.C (2005). *Belajar dan pembelajaran*. Jakarta: Rineka Cipta.
- Buntod, P.C, Suksringam, P. & Singseevo, A. (2010). Effects of learning environmental education on science process skills and critical thinking of mathayomsuksa 3 students with different learning achievement. *Journal of Social Science*, 6 (1), hlm. 60-63.
- Campbell, N.A, Reece, J.B., Urry, L.A, Cain, M.L, Wasserman, S.A, Minorsky, P.V., Jackson, B.B. *Biologi edisi 8 jilid 3*. Jakarta: Erlangga.
- Carin, A. & Sund, B. (1997). *Teaching science through discovery*. Columbus, Ohio: Merill Publishing.
- Castranova, J. (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).
- [online] <http://www.learnnc.org/lp/pages/5352>. Dikases pada tanggal 8 Desember 2015.

- Cetin, M.C (2014). Evaluation of the correlation between learning styles and critical thinking dispositions of the students of school of physical education and sports. *Academic Journals*, 9 (8), hlm. 680-690.
- Chowning, J.T, Griswold , J.C, Kovarick, D.N, Collins, L.J. (2012). Fostering critical thinking, reasoning, and argumentation skills through bioethics education. *PLoS ONE* , 7 (5), hlm. 1-8.
- Cimer, A., Timucin, M., Kokoc, M. (2013). Critical thinking level of biology classroom survey: Ctlobics. *The Online Journal of New Horizon in Education (TOJNED)*, 3 (1).
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Second Edition. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.
- Cohen, M.T, (2008). The effect of direct instruction versus discover learning on the understanding of science lessons by second grade student. (*NERA Conference Proceedings 2008*).
- Connor, C.M, Morrison, F.J, Fishman, B., Crowe, E.C, Al Otaiba, S., Schatschneider, C. (2013). A longitudinal cluster-randomized controlled study on the accumulating effects of individualized literacy instruction on students' reading from first through third grade. *Psychology Science*, 24 (8), hlm. 1408-1419.
- Costa, A.L. (1985). *Developing minds resources book for thinking*. Virginia: Association for Supervision and Curriculum Development (ASDC).
- Cruz, J.P.C. dela. (2015). Development of an experimental science module to improve middle school students' integrated science process skills. *Proceedings of The DLSU Research Congress* (hlm. 1-6). Manilla: De La Salle University.
- Dahar, R.W. (2011). *Teori-teori belajar*. Jakarta: Erlangga.
- Darland,D.C, & Jeffrey, S. C. (2012). Log-term retention of knowledge and critical thinking skills in development biology. *Journal of Microbiology & Biology Education*, 13 (2), hlm.. 125-132.
- Effiong, Udo, Mfon. (2010). Effect of guided-discovery, student-centred demonstration and the expository instructional strategies on students' performance in chemistry. *An International Multi-Disciplinary Journal, Ethiopia*, 4 (4), hlm. 389-398.
- Ergul, R., Simsekli, Y., Calis, S., Ozdilek, Z, Gocmencelebi, S., Sanli, M. (2011). The effects of inquiry-based science teaching on elementary school students' science process skills and science attitudes. *Bulgarian Journal of Science and Education Policy (BJSEP)*, 5 (1), hlm. 48-67.

- Erman, S., dkk., (1990). *Petunjuk praktis untuk melakukan evaluasi pendidikan matematika*. Bandung: Wijaya Kusumah 157.
- Fang, Z & Wei Y. (2010). Improving middle school students' science literacy through reading infusion. *The Journal of Education Research*, 103, hlm. 262-273.
- Feyzioglu, B. (2009). An investigation of the relationship between science process skills with efficient laboratory use and science achievement in chemistry education. *Journal of Turkish Science Education*, 6 (3), hlm. 114-132.
- Filsaime, D.K. (2008). *Menguak rahasia berpikir kritis dan kreatif*. Jakarta: Prestasi Pustaka.
- Fogarty, R. (1991). *The mindful school: How to integrate the curricula*. Palatine Illinois: IRI/Skylight Publishing, Inc.
- Fraenkel, J.R., Wallen, N.E, Hyun, H.H. (2012). *How to design and evaluate research in education*. 8th Edition. New York: The McGraw-Hill Companies.Inc.
- Fritjers S. Geet ten D. & Gert R. (2008). Effects of dialogic learning on value-loaded critical thinking. *Elsevier learning and instruction*, 18, hlm. 66-82.
- Furqon. (2008). *Statistika terapan untuk penelitian*. Bandung: Alfabeta.
- Gazali, A., Hidayat, A. & Yuliati, L. (2015). Efektivitas model siklus belajar 5E terhadap keterampilan proses sains dan kemampuan berpikir kritis siswa. *Jurnal Pendidikan Sains*. Vol 3. Tersedia: <http://journal.um.ac.id>. Diakses 12 Juli 2016.
- Giancoli, D. (1999). *Fisika*. Edisi kelima. Yuhilaza Hanum dan Hilarius Wibi (penerjemah). Jakarta: Erlangga.
- Gie, T.L. (1994). *Cara belajar yang efisien*. Yogyakarta: Lyberty.
- Gultepe, N. (2016). High school science teachers' views on science process skills. *International Journal of Environmental & Science Education*, 11 (5), hlm. 779-800.
- Gupta, T. (2012). *Guided-inquiry based laboratory instruction: investigation of critical thinking skills, problem solving skills, and implementing student roles in chemistry*. Graduate Thesis and Desertation. Digital Respository @ Iowa University.
- Gures, A., Cuya, S., Gunes, K., Dogar, C. (2014). Determination of the relation between undergraduate students' awareness levels regarding their scientific process skills and application potentials. *American Journal of Education Research*, 2 (5), hlm. 250-256.

- Hake, R.R. (1998). Interactive-engagement vs traditional methods: A thousand-student survey of mechanics test data for introductory physics course. *American Journal of Physics*, 66 (1), hlm. 64-74.
- Hanrahan, M. (2009). Bridging The Literacy Gap: Teaching skill of reading and writing as they apply in school science. *Eurasia Journal of Mathematics, Science & Technology Education*, 5(3), hlm. 289-304.
- Hermida, J. (2009). The important the teaching academic reading skills in first years university course. *The International Journal of Research and Review*, hlm. 20-30.
- Hosnan, M. (2014). *Pendekatan saintifik dan kontekstual dalam pembelajaran abad 21. Kunci sukses implementasi kurikulum 2013*. Bogor: Ghalia Indonesia.
- Inch, E.S., Warnick, B. & Endres, D. (2006). *Fifth edition critical thinking and communication, the use of reason in argument*. Boston: Pearson Education, Inc.
- Indarti. (2014). Pengaruh model discovery learning terhadap kemampuan memecahkan masalah siswa kelas X SMAN 8 Malang. *Jurnal Fisika Univeristas Negeri Malang*, 1 (1).
- Ismail, Z.H. & Jusoh, I. (2001). Relationship between science process skills and logical thinking abilities of Malaysian students. *Journal of Science and Mathematics Education in S.E. Asia.*, 24 (2), hlm. 67-77.
- Isnaningsih dan Bimo, D.S. (2013). Penerapan lembar kegiatan siswa (LKS) discovery berorientasi keterampilan proses sains untuk meningkatkan hasil belajar IPA. *Jurnal Pendidikan IPA Indonesia*, 2 (2), hlm. 136-141.
- Jhonson, B.E & Zabrusky, K.M. (2011) Improving middle and high school students' comprehension of science text. *International Electronic Journal of Elementary Education*, 4 (1), hlm. 19-31.
- Kalelioglu, F. & Gulbahar, Y. (2014). The effect of instructional techniques on critical thinking and critical thinking deposition in online discussion. *Education Technology & Society*, 17 (1), hlm. 248-258.
- Karamustafaoglu, S. (2011). Improving the science process skill ability of science student teacher using i diagram. *Eurasian Journal of Physic and Chemistry Education*, 3 (1), hlm. 26-38.
- Kemdikbud. (2014). *Buku guru ilmu pengetahuan alam untuk SMP/MTs kelas VIII*. Jakarta: Kementerian Pendidikan dan Kebudayaan.

- Kemdikbud. (2013a). *Materi pelatihan guru implementasi kurikulum 2013 SMP/MTs IPA*. Jakarta.: Badan Pengembangan Sumber Daya Manusia Pendidikan dan Kebudayaan dan Penjaminan Mutu Pendidikan Kementerian Pendidikan dan Kebudayaan.
- Kemdikbud. (2013b). *Kompetensi mata pelajaran ilmu pengetahuan alam Sekolah Menengah Pertama (SMP)/Madrasah Tsanawiyah (MTs)* Jakarta: Kementerian Pendidikan dan Kebudayaan.
- Kemdikbud. (2013c). Permendikbud Nomor 65 Tahun 2013 tentang Standar Proses Pendidikan Dasar dan Menengah. Kementerian Pendidikan dan Kebudayaan RI, Jakarta: Kemdikbud.
- Kereluik, K., Misraha, P., Fahnoe, C., Terry, L. (2013). What knowledge is of most worth: teacher knowledge for 21st century learning. *Journal of Digital Learning in Teacher Education*, 29 (4), hlm. 127-140.
- Khatib, M. & Nazari, O. (2012). The effect of literature on enhancing critical thinking. *Journal of Comparative Literature And Culture*, hlm. 29-33.
- Kumalasari, D., Sudarti, Lesmono, A.D. (2015). Dampak model discovery learning terhadap keterampilan proses sains dan hasil belajar IPA-Fisika siswa di MTs Negeri Jember. *Jurnal Pendidikan Fisika*, 4 (1), hlm. 80-86.
- Kusuma, A.T, Indrawati, Harijanto, A. (2015). Model discovery learning disertai teknik probing prompting dalam pembelajaran fisika di MA. *Jurnal Pendidikan Fisika*, 3 (4), hlm. 336-341.
- Marasigan, A.C. & Espinosa, A.A. (2014). Modified useful-learning approach: effects on students' critical thinking skills and attitude towards chemistry. *International Journal of Learning, Teaching and Educational Research*, 1 (1), hlm. 35-72.
- Martin, G.T. (2002). Reading, writing, and comprehending. encouragin active reading in the science classroom. [on line] diakses dari <http://www.bcps.org>.
- Mirnawati. (2015). *Implementasi model pembelajaran discovery untuk meningkatkan kemampuan berpikir kritis dan mengembangkan keterampilan dasar bekerja ilmiah siswa pada materi indera penglihatan dan alat optik*. Tesis. Sekolah Pascasarjana, Universitas Pendidikan Indonesia, Bandung.
- Muslim. (2014). *Pengembangan program perkuliahan fisika sekolah berorientasi kemampuan berargumentasi calon guru fisika*. Desertasi. Sekolah Pascasarjana. Universitas Pendidikan Indonesia, Bandung.

- Muttaqiin, A. (2015). *Pengaruh model discovery learning dengan sisipan membaca kritis terhadap penguasaan konsep dan berpikir kritis siswa SMP pada konsep energi dalam sistem kehidupan*. Tesis. Sekolah Pascasarjana. Universitas Pendidikan Indonesia, Bandung.
- Muttaqin, A. & Sopandi, W. (2015). Relationship between the students' critical skill in discovery learning and their critical thinking skill. *Edusentris, Jurnal Ilmu Pendidikan dan Pengajaran*. 2 (2), hlm. 116-124.
- Naaman, R.M. (2011). How can we motivate high school students to study science? *Science Education International*, 22 (1), hlm. 5-17.
- Nuraida, D. (2016). Critical thinking skill and its correlation with student achievement index cumulative. *Proceeding of 3th International Conference on Research, Implementation and Education of Mathematics and Science*, BE-02 (hlm. 7-11). Yogyakarta.
- O'Reilly, T. & McNamara, D.s. (2007). The impact of science knowledge, reading skill, and reading strategy knowledge on more traditional "high stakes" measure of high school students' science achievement. *American Educational Research Journal*, 44 (1) hlm. 161-169.
- Oghenewede, O.E. (2010). Effect of discovery and inquiry approaches in teaching and learning of biology on secondary schools students' performance in Delta state Nigeria. *Journal of Research in Education and Society*, 1 (1), hlm. 30-39.
- Olejnik, S. & Algina, J. (2000). Measures of effect size for comparative studies: applications, interpretations, and limitations. *Contemporary Educational Psychology*, 25, hlm. 241-286.
- Oliveraz, B, Marquez, C. & Sanmarti, N. (2013). The use of newspaper articles as a tool develop critical thinking in science classes. *Routledge Taylor & Francis Group: International Journal Science Education*, 35 (6), hlm. 885-905.
- Oguz, A. & Saricam, H. (2016). The relationship between critical thinking disposition and locus control in pre-service teachers. *Journal of Education and Training Studies*. 4 (2), hlm. 182-192.
- Ozgelen, S. (2012). Students' science process skills within a cognitive domain framework. *Eurasia Journal of Mathematics, Science & Technology Education*, 8 (4), hlm. 283-292.
- Pujawan, I. G. N. (2005). Penerapan model pembelajaran kooperatif dengan metode SQ3R dalam meningkatkan aktivitas dan prestasi belajar matematika siswa SMP. *Jurnal Pendidikan dan Pengajaran IKIP Negeri Singaraja*, 3, hlm. 343-358.

- Putra, R.A. (2014). *Pengembangan program perkuliahan zoologi invertebrata berbasis inkuiiri laboratorium untuk meneingkatkan keterampilan berpikir kritis dan sikap ilmiah siswa calon guru biologi*. Desertasi. Sekolah Pascasarjana., Universitas Pendidikan Indonesia, Bandung.
- Quitadamo, I.J, Fiola, C.L, Johnson, J.E., , & Kurtz, M.J. (2008). Community-based inquiry improves critical thinking in general education biology. *CBE-Life Science Education*, 7, hlm. 327-337.
- Raj, G.R & Devi, S. N. (2014). Science process skills and achievement in science among high school student. *Scholarly Research Journal for Interdisciplinary Studies*, 2 (15), hlm. 2435-2443.
- Reld, D.J., Zhang, J. & Chen, Q. (2003). Supporting scientific discovery learning in a simulation environment. *Journal of Computer Assisted Learning*, 19, hlm. 9-20.
- Rustaman, N.Y, Dirdjosoemarti, S., Yudianto, S.A, Yusnani, A., Subekti, R, Rochintaniawti, D, Nurjhani, M.K. (2005). *Strategi belajar mengajar biologi*. Malang: Penerbit Universitas Negeri Malang.
- Saab, N., van Joolingen, W., & van Hout-Wolters, B. (2005). Communication in collaborative discovery learning. *British Journal of Educational Psychology*, 75, hlm. 603-621.
- Sani, R. A. (2014). *Pembelajaran saintifik untuk implemetasi kurikulum 2013*. Jakarta: Bumi Aksara.
- Santrock, J.W. (2007). *Psikologi pendidikan*. Edisi kedua. Jakarta: Kencana Prenada Media Group.
- Siegel, H. (2010). Critical Thinking. *International encyclopedia of education*, 6, hlm. 141-145.
- Stiggins, R.J (1994). *Student-centered classroom assessment*. New York: Macmillan College Publishing Company, Inc. Merril.
- Subali, B. & Mariyam, S. (2014). Measuring the Indonesian elementary school student's creativity in science process skills of life aspects on natural sciences subject. *Journal of Elementary Education*, 25 (1), hlm 91-95.
- Subali, B. (2011). Pengukuran kreativitas keterampilan proses sains dalam konteks assesment for learning. *Cakrawala Pendidikan*, 30 (1), hlm. 130-144.
- Subana, Rahadi, M., Sudrajat. (2005). *statistik pendidikan*. Bandung: Pustaka Setia.

- Sudiatmika. (2010). *Pengembangan alat ukur tes literasi sains siswa SMP dalam konteks budaya bali*. Desertasi. Sekolah Pascasarjana., Universitas Pendidikan Indonesia, Bandung.
- Sukarno, Permanasari, A., Hamidah, I. (2013). The profile of science process skill (SPS) student at secondary high school (Case Study in Jambi). *International Journal of Scientific Engineering and Research (IJSER)*, 1 (1) hlm. 70-83.
- Surapranata, S. (2005). *Analisis, validitas, reliabilitas dan interpretasi tes implementasi kurikulum 2004*. Bandung: Remaja Rosdakarya.
- Supriyatman & Sukarno. (2014). Improving science process skills (SPS) science concept mastery (SCM) prospective student teachers through inquiry learning instruction model by using interactive computer simulation. *International Journal of Science and Research (IJSR)*, 3 (2), hlm. 6-9.
- Suryadi, S.M & Wulan, A.R. (2015) The use of authentic assessment in discovery learning to enhance students' conceptual knowledge and science process skills regarding global warming. *Proceedings of International Seminar on Mathematics, Science, and Computer Science Education (MSCEIS 2015)* (hlm. 1-5). Bandung: FPMIPA UPI.
- Suryosubroto, B. (1997). *Proses belajar mengajar di sekolah*. Jakarta: PT Rineka Cipta.
- Sutama, I.N., Arnyana, I. P.B., & Swasta, I. B. J. (2014). Pengaruh model pembelajaran inkuiri terhadap ketrampilan berpikir kritis dan kinerja ilmiah pada pelajaran biologi kelas XI IPA SMA Negeri 2 Amlapura. *e-Journal Program Pascasarjana Universitas Pendidikan Ganesha Program Studi IPA*, 4, hlm. 1-14.
- Sutiadi, A., Pembelajaran Jerome Bruner untuk meningkatkan hasil belajar siswa. *Jurnal Geliga Sains* 2 (1), hlm. 1-6.
- Swaak, J., de Jong, T., van Joolingen, R. (2004). The effects of discovery learning and expository instruction on the acquisition of definitional and intuitive knowledge. *Journal of Computer Assisted Learning*, 20, hlm. 225-234.
- Syafi'I, A., Handayani, L., Khanafiyah, S. (2014). Penerapan question based discovery learning pada kegiatan laboratorium fisika untuk meningkatkan keterampilan proses sains. *Unnes Physic Education Journal (UPEJ)*, 3 (2), hlm. 10-17.
- Syah, M. (2010). *Psikologi pendidikan dengan pendekatan baru*. Bandung: Remaja Rosdakarya.
- Tawil, M. & Liliyati. (2014.) *Keterampilan-keterampilan sains dan implementasinya dalam pembelajaran IPA*. Makasar: Badan Penerbit UNM.

- Tawil, M. & Liliyati. (2013). *Berpikir kompleks dan implementasinya dalam pembelajaran IPA*. Makasar: Badan Penerbit UNM.
- Tippler, P. (1998). *Fisika untuk sains dan teknik*. Jilid 1. (Terjemahan: Lea Prasetyo & Rahmad W. Adi). Jakarta: Erlangga.
- Tobin, K.G. & Capie, W. (1982). Relationship between formal reasoning ability, locus of control, academic engagement and integrated process skill achievement. *Journal of Research Science Teaching*, 19, hlm. 113-121.
- Tomasek, T. (2009). Critical Reading: Using reading prompts to promote active engagement with text. *International Journal of Teaching and Learning in Higher Education*, 21 (1), hlm. 127-132.
- Trianto. (2010). *Model pembelajaran terpadu: konsep, strategi, dan impelmentasinya dalam Kurikulum Tingkat Satuan Pendidikan (KTSP)*. Jakarta: Bumi Aksara.
- Urbančič, M. & Glažar, S. A.. (2012). Impact of experiments on 13-year-old pupils' understanding of selected science concepts. *Eurasia Journal of Mathematics, Science & Technology Education*, 8(3), hlm. 207-218.
- Wartini. (2014). *Penerapan pembelajaran berbasis praktikum melalui inkuiiri terbimbing dan verifikasi pada konsep fotosintesis terhadap penguasaan konsep dan keterampilan proses sains siswa SMP*. Tesis. Sekolah Pascasarjana, Universitas Pendidikan Indonesia, Bandung.
- Wenning, C.J. (2005). Implementing inquiry-based instruction in the science classroom: A new model for solving the improvement-of-practice problem. *Journal Of Physics Teacher Education Online (JPTEO)*, 2 (4), hlm. 9-15.
- Wenning, C.J. (2011). The level of inquiry model of science teaching. *Journal Physic Teacher Education On Line (JPTEO)*, 6(2), hlm. 9-16.
- White, T.K, Paul, Terri G, Ricahrd H, Dubear K, Kevin L, Laura L, Andrea L, & Elizabet H. (2011). The use of interrupted case studies to enhance critical thinking skills in biology. *Journal of Microbiology and Biology Education*, 10, hlm. 25-31.
- Widiadnyana, I.W., Sadia, I.W, Suastra, I.W. (2014). Pengaruh model discovery learning terhadap pemahaman konsep IPA dan sikap ilmiah siswa SMP. *e-Journal Program Pascasarjana Universitas Ganesha Program Studi IPA* (4).
- Widodo, A. & Ramdhaniyah, V. (2006). *Analisis kegiatan praktikum biologi dengan menggunakan video*. Metalogika. 9(2), hlm. 146-158.
- Wulanningsih, S., Prayitno, B.A & Probosari, R.M. (2012). Pengaruh model pembelajaran inkuiiri terbimbing terhadap keterampilan proses sains ditinjau dari

- kemampuan akademik siswa SMA Negeri 5 Surakarta. *Jurnal Pendidikan Biologi*. 4 (2), hlm. 33-43.
- Yore, L., Hand, B., Goldman, S., Hilderbrand, G., Osborne, J., Treagust, D. (2004). New directions in language and science education research. *Reading Research Quarterly*, 39, hlm. 347-352.
- Yusuf, M. & Wulan, A.R. (2015). Penerapan model pembelajaran discovery learning menggunakan pembelajaran tipe shared dan webbed untuk meningkatkan keterampilan proses sains. *Jurnal Pengembangan & Penelitian Fisika (JPPF)*, 1 (2), hlm. 19-26.
- Yusuf, M. (2015). *Penerapan model pembelajaran discovery learning menggunakan pembelajaran ipa terpadu tipe shared dan webbed pada materi pemanasan global untuk meningkatkan penguasaan konsep dan keterampilan proses sains peserta didik SMP*. Tesis. Sekolah Pascarjana, Universitas Pendidikan Indonesia, Bandung.
- Zeitoun, S. & Hajo, Z. (2015). Investigating the science process skills in cycle 3 national science textbooks in Lebanon. *American Journal of Education Research*, 3 (93), hlm. 268-271.
- Zhou, Q., Huang, Q., Tian, H. (2013). Developing students' critical thinking skills by task-based learning in chemistry experiment teaching. *Creative Education* 4 (12A), hlm. 40-45.
- Zmach, C.C, Sanders, Patrick, J.D, Dedeoglu, H., Charbonnet, S., Henkel, M., Fang, Z., Lamme, L.L, and Pringle, R. (2007). Infusing reading into science learning (researchers and middle school teachers teamed up to give students effective reading instruction in science class). *Educational Leadership Journal*, 64 (4), hlm. 62-66.