

DAFTAR PUSTAKA

- Admin. (2015). *Potret Dunia Pendidikan di Indonesia*. [Online]. Diakses dari <http://pedidikanindonesia.com/potret-dunia-pendidikan-di-indonesia/>.
- Afriana, Jaka., Permanasari, Anna. & Fitriani, Any. (2016). *Penerapan project based learning terintegrasi STEM untuk meningkatkan literasi sains siswa ditinjau dari gender*. Jurnal Inovasi Pendidikan IPA.
- Ammer, at al. (2006). *Basic proficiencies in Scientific Reasoning*. Forsburg: State University.
- Arikunto, Suharsimi. (2013). *Prosuder Penelitian Suatu Pendekatan Praktik*. Jakarta: Rinerka Cipta.
- Arikunto, Suharsimi. (2013). *Dasar-Dasar Evaluasi Pendidikan*. Jakarta: Bumi Aksara.
- Bachtiar, Rayendra Wahyu. (2013). *Pengembangan Instrumen Pengukuran Kemampuan Penalaran Ilmiah Fisika (Kajian Kemampuan Penalaran Ilmiah Mahasiswa Pendidikan Fisika)*. Jember: Universitas Jember Press.
- Boa, Lei at al. (2009). *Learning and Scientific Reasoning*. 323,586. [Online]. Diakses dari www.sciencemag.org/cgi/content/full/323/5914/586/DC1.
- Becker, Lee A. (2000). Effect Size (ES). [Online]. Diakses dari <http://web.uccs.edu/lbecker/Psy590/es.html>

Bybee, W Rodger. (2011). *Scientific and Engineering Practices in K–12 Classrooms. Understanding A Framework for K–12 Science Education.* NSTA.

Bybee, W Rodger. (2013). *The Case for STEM Education Challenges and Opportunities*. Amerika: NSTA.

Creswell, John W. (2014). *Research Design. Qualitative, Quantitative, and Mixed method's Approaches*. California: Sage.

Coughlan, Sean. (2016). Asia Peringkat Tertinggi Sekolah Global, Indonesia Nomor 69. [Online]. Diakses dari http://www.bbc.com/indonesia/majalah/2015/05/150513_majalah_asia_sekolah_terbaik.

Depdiknas. (2006). Kurikulum Tingkat Satuan Pendidikan. Jakarta: Depdiknas.

Depdiknas. (2003). *Kurikulum 2004: Standar kompetensi, mata pelajaran Fisika, Sekolah Menengah Atas dan Madrasah Aliyah*. Jakarta: Depdiknas.

Depdikbud. (2016). *Pidato Menteri Pendidikan dan Kebudayaan RI pada Hari Pendidikan Nasional, 2 Mei 2016*. Jakarta: Depdikbud.

Dunst, Carl J, et al. (2004). *Guidelines for Calculating Effect Sizes for Practice-Based Research Syntheses*. 3 (1). 1-10. Centerscope.

Erlina, Nia,. Susantini, Endang, & Wasis. (2017). *Efektivitas Model Pembelajaran Learning Cycle 5e Terhadap Peningkatan Keterampilan Penalaran Ilmiah*. Surabaya: Unesa press

Fraenkel, Jack R. & Wallen, Norman E. (2009). *How to Design and Evaluate Research in Education*. New York: McGraw-Hill Companies.

Hake, Richard R. (1998). *Interactive-engagement versus traditional methods: A six-thousand-studentsurvey of mechanic's test data for introductory physics courses.* Am. J. Phys. 66, (1), 64 – 74.

Han, Jing. (2013). *Scientific Reasoning: Research, Development, And Assessment.* (Disertasi). The Ohio State University.

Hanover Research (2011). *K-12 STEM education overview.*

Hidayat, Feriawan & Handayani, Indah. (2015). *Pendidikan Berbasis STEM Jawaban Tantangan Global.* [Online]. Diakses dari <http://www.beritasatu.com/kesra/324186-pendidikan-berbasis-stem-jawaban-tantangan-global.htm>.

Hung, Woei & Jonassen, David H. (2006). *Conceptual Understanding of Causal Reasoning in Physics.* 28 (13). 1601. [Online]. Diakses dari <https://eric.ed.gov/?id=EJ753840>.

IPERC. (2016). *What is Scientific Reasoning and Why is it Important?*. [Online]. Diakses dari <http://www.iperc.org/home/research-sr/>.

iSTARAssessment. (2010-2013). What is Scientific Reasoning and Why is it Important?. [Online]. Diakses dari <http://www.istarassessment.org/>.

iSTARAssessment. (2011). *Basic Logical Reasoning.* [Online]. Diakses dari <http://www.istarassessment.org/srdims/deductive-logic-needs-pictures/>.

iSTARAssessment. (2011). *Proportions and Ratios.* [Online]. Diakses dari <http://www.istarassessment.org/srdims/proportions-and-ratios-needs-pictures/>.

iSTARAssessment. (2011). *Probability*. [Online]. Diakses dari <http://www.istarassessment.org/srdims/probability-2/>.

iSTARAssessment. (2011). *Inductive Reasoning*. [Online]. Diakses dari <http://www.istarassessment.org/srdims/inductive-reasoning-needs-pictures/>.

iSTARAssessment. (2011). Hypothetical-Deductive Reasoning. [Online]. Diakses dari <http://www.istarassessment.org/srdims/hypothetical-deductive-reasoning-needs-pictures/>.

iSTARAssessment. (2011). *Control of Variables*. [Online]. Diakses dari <http://www.istarassessment.org/srdims/control-of-variables/>.

iSTARAssessment. (2011). *Correlational Reasoning*. [Online]. Diakses dari <http://www.istarassessment.org/srdims/correlational-reasoning-needs-pictures/>.

iSTARAssessment. (2011). *Causal Reasoning*. [Online]. Diakses dari <http://www.istarassessment.org/srdims/causal-reasoning-2/>.

Jonasssen, David H. & Ionas, Ioan Gelu. (2006). *Designing effective supports for causal reasoning*. Columbia: Springer.

Kaniawati, Dewi Susanti., Kaniawati, Ida. & Suwarma, Irma. (2015). *Study literasi pengaruh pengintegrasian pendekatan stem dalam learning cycle 5e terhadap kemampuan pemecahan masalah siswa pada pembelajaran fisika*. Bandung: Sinafi.

Lawson, Anton, et al. (2000). *Development of Scientific Reasoning in College Biology: Do Two Levels of General Hypothesis-Testing Skills Exist?*. 37(1). 81–101. National Science Foundation.

Malcon, Shirley & Fared, Michael. (2016). *Barriers and Opportunities for 2-Year and 4-Year STEM Degrees: Systemic Change to Support Students' Diverse Pathways*. Whasington DC: The National Academies.

Maryanti, Maya. (2014). *Penerapan Pendekatan Leve; of Inquiry untuk Meningkatkan Scientific Reasoning Siswa SMP pada Materi Kalor*. (Skripsi). Bandung: Jurusan Pendidikan Fisika FPMIPA UPI.

McKinsey Global Institute. (2012). *Perekonomian Nusantara: Menggali Potensi Terpendam Indonesia*. www.mckinsey.com/mgi: McKinsey & Company.

National Science Foundation. (2015). *Developing Scientific Reasoning Assessment Tools for STEM Education and Teacher Preparation*. [Online]. Diakses dari https://www.nsf.gov/awardsearch/showAward?AWD_ID=1044724.

Park, Yunebae. (2004). *Teaching and Learning of Physics in Cultural Contexts*. Singapore: World scientific publishing.

Peraturan Rektor Universitas Pendidikan Indonesia Nomor 5804/UN40/HK/2015 tentang Pedoman Penulisan Karya Ilmiah UPI Tahun 2015/2016.

Pertiwi, Ratri Sekar., Abdurrahman, A. & Rosidin, Undang. (2017). *Efektivitas LKS STEM Untuk Melatih Keterampilan Berpikir Kreatif Siswa*. Lampung: Universitas Lampung Press.

- Shadiq, Fadjar. (2004). *Pemecahan Masalah, Penalaran dan Komunikasi*. Yogyakarta: Departemen Pendidikan Nasional.
- Sugiyono. (2012). *Statistika untuk Penelitian*. Bandung: Alfabeta
- Sugiyono. (2008). *Metode Penelitian Pendidikan*. Bandung: Alfabeta.
- Surapranata,S. (2005). *Analisis Validitas, Reliabilitas, dan Interpretasi Hasil Tes Implementasi Kurikulum 2004*. Bandung: Remaja Rosda Karya.
- Suwarma, R. Irma., et al. (2015). “*Ballon Powered Car” Sebagai Media Pembelajaran IPA Berbasis STEM (Science, Technology, Engineering, And Mathematics)*”.
- Tawil, Muh. (2006). *Pengaruh kemampuan penalaran formal terhadap hasil belajar fisika siswa kelas II SLTP Negeri 1 Sungguminasa kabupaten Gowa*. [Online]. Diakses dari <http://ppipa.unm.ac.id/karya-ilmiah/artikeltawil07Dikti2.pdf>.
- Torlakson, Tom, et al. (2014). *Innovate: A Blueprint for Science, Technology, Engineering, and Mathematics in California Public Education*. California. [Online]. Diakses dari <http://www.cde.ca.gov/pd/ca/sc/documents/innovate.pdf>.
- Zimmerman, Corinne. (2000). *The Development of Scientific Reasoning Skills*. Canada: Albreta University Press.
- Zimmerman, Corinne. (2007). *The Development of Scientific Reasoning Skills in Elementary and Middle School*. 27. 172-223. Elseiver.