

DAFTAR PUSTAKA

- Adams, A., Miller, B.G., Saul, M., Pegg, J. (2014). Supporting Elementary Pre-Service Teachers to Teach STEM Throgh Place-Based Teaching and Learning Experiences, *Electronic Journal of Science Education*, 18(5) : 1-22
- Adrianto. (2019). *Isu Permasalahan Pendidikan di Indonesia*. doi:10.31219/osf.io/zwda6
- Afriana, J., Permanasari, A., & Fitriani, A. (2016). Penerapan project based learning terintegrasi STEM untuk meningkatkan literasi sains siswa ditinjau dari gender. *Jurnal Inovasi Pendidikan IPA*, 2(2), 202. <https://doi.org/10.21831/jipi.v2i2.8561>
- Alviah, I., Susilowati, E., & Masykuri, M. (2020). Pengaruh Kemampuan Literasi Kimia terhadap Capaian Higher Order Thinking Skills (HOTS) Siswa SMA Negeri 1 Sukoharjo pada Materi Larutan Penyangga dengan Pemodelan Rasch. *Jurnal Pendidikan Kimia*, 9(2), 121–130. <https://doi.org/10.20961/jpkim.v9i2.34339>
- Andaresta, N., & Rachmadiarti, F. (2021). Pengembangan E-Book Berbasis STEM Pada Materi Ekosistem untuk Melatihkan Kemampuan Literasi Sains Siswa. *Berkala Ilmiah Pendidikan Biologi (BioEdu)*, 10(3), 635–646. <https://doi.org/10.26740/bioedu.v10n3.p635-646>
- Anggraini, F. I., & Huzaifah, S. (2017). *Implementasi STEM dalam pembelajaran IPA di sekolah Menengah pertama* (Vol. 1, Issue 1, pp. 722–731). <http://www.conference.unsri.ac.id/index.php/semnasipa/article/download/738/355>
- Anwar, M., Alimin, N., & Munawwarah, N. (2021). An interactive e-book development based on green chemistry study on Hydrocarbon. *Journal of Physics Conference Series*, 1899(1), 012161. <https://doi.org/10.1088/1742-6596/1899/1/012161>
- Arisya, F., Haryati, S., & Holiwarni, B. (2021). PENGEMBANGAN MODUL BERBASIS STEM (SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS) PADA MATERI SIFAT KOLIGATIF LARUTAN. *Jurnal Pendidikan Kimia Universitas Riau*, 6(1). <https://doi.org/10.33578/jpk-unri.v6i1.7787>
- Aswirna, P., & Ritonga, A. (2020). THE DEVELOPMENT OF DISCOVERY LEARNING - BASED E-BOOK TEACHING E-BOOK BASED ON KVISOFT FLIPBOOK MAKER ON SCIENCE LITERATION. *HUNAFA Jurnal Studia Islamika*, 17(2), 47–79. <https://doi.org/10.24239/jsi.v17i2.590.47-79>

- Asyhari, A. (2015). Profil Peningkatan kemampuan literasi sains siswa melalui pembelajaran saintifik. *Al-Biruni/Jurnal Ilmiah Pendidikan Fisika Al-Biruni*, 4(2), 179–191. <https://doi.org/10.24042/jpifalbiruni.v4i2.91>
- Avargil, S. (2019). Learning chemistry: Self-Efficacy, chemical understanding, and graphing skills. *Journal of Science Education and Technology*, 28(4), 285–298. <https://doi.org/10.1007/s10956-018-9765-x>
- Barakos, L., Lujan, V., & Strang, C. (2012). *Science, Technology, Engineering, Mathematics (STEM): Catalyzing Change Amid the Confusion*. <http://files.eric.ed.gov/fulltext/ED534119.pdf>
- Branch, R. M. (2009). Instructional Design: the ADDIE approach. In *Springer eBooks*. <https://doi.org/10.1007/978-0-387-09506-6>
- Eliza, W., & Yusmaita, E. (2021). Pengembangan Butir Soal Literasi Kimia pada Materi Sistem Koloid Kelas XI IPA SMA/MA. *JURNAL EKSAKTA PENDIDIKAN (JEP)*, 5(2), 197–204. <https://doi.org/10.24036/jep/vol5-iss2/621>
- Fuadi, H., Robbia, A. Z., Jamaluddin, J., & Jufri, A. W. (2020). Analisis faktor penyebab rendahnya kemampuan literasi sains peserta didik. *Jurnal Ilmiah Profesi Pendidikan*, 5(2), 108–116. <https://doi.org/10.29303/jipp.v5i2.122>
- Hamalik, O. (1994). *Media Pendidikan, cetakan ke-7*. Bandung: Penerbit PT. Citra Aditya Bakti.
- Hatimah, H., & Khery, Y. (2021). Pemahaman Konsep dan Literasi Sains dalam Penerapan Media Pembelajaran Kimia Berbasis Android. *Jurnal Ilmiah IKIP Mataram*, 8(1), 111–120.
- Humairah, N., Muchtar, Z., & Sitorus, M. (2020). The development of Android-Based interactive multimedia for high school students. *Proceedings of the 5th Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2020)*. <https://doi.org/10.2991/assehr.k.201124.027>
- Ismawati, R. (2017). STRATEGI REACT DALAM PEMBELAJARAN KIMIA SMA. *Indonesian Journal of Science and Education*, 1(1), 1–7. <https://doi.org/10.31002/ijose.v1i1.413>
- Khaeruman, K., Ahmadi, A., & Rehanun, R. (2015). Pengembangan media animasi interaktif pada materi laju reaksi. *Hydrogen Jurnal Kependidikan Kimia*, 3(1), 267. <https://doi.org/10.33394/hjkk.v3i1.672>
- Khairani, N. A., Rajagukguk, J., & Derlina, N. (2019). Development of Moodle E-Learning Media in Industrial Revolution 4.0 era. *Proceedings of the 4th Annual International Seminar on Transformative Education and*

- Educational Leadership (AISTEEL 2019).* <https://doi.org/10.2991/aisteel-19.2019.172>
- Krathwohl, D. R., Anderson, L. W., & Prihantoro, A. (2010). *Kerangka landasan untuk pembelajaran, pengajaran, dan asesmen.* [http://digitallib.pps.unj.ac.id/index.php?p=show_detail&id=26196&keywords="](http://digitallib.pps.unj.ac.id/index.php?p=show_detail&id=26196&keywords=)
- Kurniati, D., Harimukti, R., & Jamil, N. A. (2016). Kemampuan berpikir tingkat tinggi siswa SMP di Kabupaten Jember dalam menyelesaikan soal berstandar PISA. *Jurnal Penelitian Dan Evaluasi Pendidikan*, 20(2), 142–155. <https://doi.org/10.21831/pep.v20i2.8058>
- Kusyanto, K., Shahrill, M., Irwan, E., & Yazid, I. (2022). Implementasi Pendekatan STEM untuk Meningkatkan Kemampuan Berpikir Kritis, Berpikir Kreatif dan Self –Efficacy. *Pasundan Journal of Mathematics Education Jurnal Pendidikan Matematika*, Vol 12 No 2, 1–16. <https://doi.org/10.23969/pjme.v12i2.5438>
- Meltzer, D. E. (2002). The relationship between mathematics preparation and conceptual learning gains in physics: A possible “hidden variable” in diagnostic pretest scores. *American Journal of Physics*, 70(12), 1259–1268. <https://doi.org/10.1119/1.1514215>
- Mu’Minah, Iim Halimatul, and Ipin Aripin. (2019). Implementasi STEM Dalam Pembelajaran Abad 21.|| Prosiding Seminar Nasional Pendidikan 1, no. 2012: 1495–1503. <https://prosiding.unma.ac.id/index.php/semnasfkip/article/view/219>.
- Munawar, M., Roshayanti, F., & Sugiyanti, S. (2019). IMPLEMENTATION OF STEAM (Science Technology Engineering Art Mathematics) - BASED EARLY CHILDHOOD EDUCATION LEARNING IN SEMARANG CITY. *CERIA (Cerdas Energik Responsif Inovatif Adaptif)*, 2(5), 276. <https://doi.org/10.22460/ceria.v2i5.p276-285>
- Muslich, M. (2016). *Text Book Writing: Dasar-Dasar Pemahaman, Penulisan, dan Pemakaian Buku Teks.* https://elib.polban.ac.id/index.php?p=show_detail&id=18123
- Nawawi, (1981). *Strategi Belajar Mengajar.* Jakarta : Bina Aksara.
- Nizaar, M., Haifaturrahmah, H., Abdillah, A., Sari, N., & Sirajuddin, S. (2021). Pengembangan Modul Tematik Berbasis Model Direct Instruction dalam Meningkatkan Hasil Belajar Siswa di Sekolah Dasar. *Jurnal Basicedu*, 5(6), 6150–6157. <https://doi.org/10.31004/basicedu.v5i6.1792>
- Nugroho, O. F., Permanasari, A., & Firman, H. (2019). Program Belajar berbasis STEM untuk Pembelajaran IPA: Tinjauan Pustaka, dengan Referensi di

- Indonesia. *JURNAL EKSAKTA PENDIDIKAN (JEP)*, 3(2), 117. <https://doi.org/10.24036/jep/vol3-iss2/328>
- OECD. (2022). Programme For International Student Assessment (PISA) Results From PISA 2022.
- Pahrudin, A., Irwandani, I., Triyana, E., Oktarisa, Y., & Anwar, C. (2019). The Analysis of Pre-Service Physics Teachers in Scientific Literacy: Focus on the competence and knowledge aspects. *Jurnal Pendidikan IPA Indonesia*, 8(1). <https://doi.org/10.15294/jpii.v8i1.15728>
- Permanasari, A. (2016). STEM Education: Inovasi dalam Pembelajaran Sains. *Prosiding SNPS (Seminar Nasional Pendidikan Sains)*, 3, 23–34. <https://jurnal.fkip.uns.ac.id/index.php/snps/article/download/9810/7245>
- Petrucci, R. H., Harwood, W. S., Herring, F. G., & Madura, J. D. (2011). *Kimia Dasar : Prinsip-Prinsip dan Aplikasi Modern*. http://pustaka.unjani.ac.id/index.php?p=show_detail&id=9093&keywords=ds=
- Prasetyo, A., Juwita, R., & Sulistiyowati, L. F. (2019). *Pengelolaan Kurikulum (MPPKS-KUR)*. <http://repositori.kemdikbud.go.id/14999/>
- Prastowo, A. (2015). *Panduan kreatif membuat bahan ajar inovatif: menciptakan metode pembelajaran yang menarik dan menyenangkan*. http://digitallib.pps.unj.ac.id/index.php?p=show_detail&id=28910&keywords=ds=
- Pratiwi, R. S., & Rachmadiarti, F. (2021). Pengembangan E-Book Berbasis Science, Technology, Engineering, and Mathematics (Stem) Materi Pertumbuhan dan Perkembangan Tumbuhan untuk Melatihkan Keterampilan Literasi Sains. *Berkala Ilmiah Pendidikan Biologi (BioEdu)*, 11(1), 165–178. <https://doi.org/10.26740/bioedu.v11n1.p165-178>
- Rahardiana, G., Redjeki, T., & Mulyani, S. (2015). Pengaruh pembelajaran Contextual Teaching and Learning (CTL) dilengkapi lab riil dan virtuil terhadap aktivitas dan prestasi belajar siswa Pada materi pokok Sistem Koloid kelas XI IPA semester genap SMA Negeri 1 Pulokulon tahun pelajaran 2013/2014. *Jurnal Pendidikan Kimia Universitas Sebelas Maret*, 4(1), 120–126. <https://jurnal.fkip.uns.ac.id/index.php/kimia/article/download/5195/3669>
- Roberts, A., & Cantu, D. (2012). *Applying STEM Instructional Strategies to Design and Technology Curriculum* (Issue 073, pp. 111–118). <https://www.ep.liu.se/ecp/073/013/ecp12073013.pdf>
- Roskos, K., Brueck, J., & Lenhart, L. (2017). An analysis of e-book learning platforms: Affordances, architecture, functionality and analytics.

- International Journal of Child-Computer Interaction*, 12, 37–45.
<https://doi.org/10.1016/j.ijcci.2017.01.003>
- Rusydiyah, E. F., Indarwati, D., Jazil, S., Susilawati, S., & Gusniwati, G. (2021). STEM Learning Environment: Perceptions and implementation skills in prospective science teachers. *Jurnal Pendidikan IPA Indonesia*, 10(1), 138–148. <https://doi.org/10.15294/jpii.v10i1.28303>
- Sambite, F. C., Mujasam, M., Widyaningsih, S. W., & Yusuf, I. (2019). Penerapan Project Based Learning berbasis Alat Peraga Sederhana untuk Meningkatkan HOTS Peserta Didik. *Berkala Ilmiah Pendidikan Fisika*, 7(2), 141. <https://doi.org/10.20527/bipf.v7i2.6310>
- Setiawati, L., Sunandar, A., Zidni, M., Nafi, I., & Yunus, M. (2023). Development of Android-Based Mobile Learning on Ecosystem Materials to Increase the Interest in Learning Elementary School Students. (2016), 45–51. Retrieved from <http://dx.doi.org/10.17977/jptpp.v8i1.15663>
- Simamora, K. F. (2022). Kemampuan HOTS Siswa Melalui Model PjBL Ditinjau dari Kemampuan Literasi Kimia Siswa. *Jurnal Inovasi Pembelajaran Kimia*, 4(1), 55. <https://doi.org/10.24114/jipk.v4i1.33588>
- Sitepu, B. (2015). *Penulisan buku teks pelajaran*. http://opac.fah.uinjkt.ac.id/index.php?p=show_detail&id=67
- Sugiyono. (2008). *Metode Penelitian Pendidikan*. http://perpus-lpmptb.kemdikbud.go.id/index.php?p=show_detail&id=379
- Sugiyono. (2014). *METODE PENELITIAN Kuantitatif, Kualitatif dan R&D*. http://digilib.fe.unj.ac.id/index.php?p=show_detail&id=4883
- Sugiyono. (2015). *Metode Penelitian Kombinasi (Mix Methods)*. Bandung: Alfabeta
- Sumanik, N. B., Nurvitasari, E., & Siregar, L. F. (2021). ANALISIS PROFIL KEMAMPUAN LITERASI SAINS MAHASISWA CALON GURU PENDIDIKAN KIMIA. *Quantum Jurnal Inovasi Pendidikan Sains*, 12(1), 22. <https://doi.org/10.20527/quantum.v12i1.10215>
- Supardi, US, S. (2015). Arah Pendidikan di Indonesia dalam Tataran Kebijakan dan Implementasi. *Formatif Jurnal Ilmiah Pendidikan MIPA*, 2(2). <https://doi.org/10.30998/formatif.v2i2.92>
- Sutrisna, N. (2021). ANALISIS KEMAMPUAN LITERASI SAINS PESERTA DIDIK SMA DI KOTA SUNGAI PENUH. *Jurnal Inovasi Penelitian*, 1(12), 2683–2694. <https://doi.org/10.47492/jip.v1i12.530>

- Syahirah, M., Anwar, L., & Holiwarni, B. (2020b). Pengembangan modul berbasis STEM (Science, Technology, Engineering and Mathematics) pada pokok bahasan Elektrokimia. *JURNAL PIJAR MIPA*, 15(4), 317–324. <https://doi.org/10.29303/jpm.v15i4.1602>
- Syahmani, E H. (2021). Pengaruh Pembelajaran Dengan Pendekatan STEM Berbasis Lahan Basah Pada Literasi Sains Siswa. Prosiding Seminar Nasional Lingkungan. 6, no. 2: 1–5.
- Tang, K. (2021). Paradigm shifts in e-book-supported learning: Evidence from the Web of Science using a co-citation network analysis with an education focus (2010–2019). *Computers & Education*, 175, 104323. <https://doi.org/10.1016/j.compedu.2021.104323>
- Thahir, A., Anwar, C., Saregar, A., Choiriah, L., Susanti, F., & Pricia, A. (2020). The Effectiveness of STEM learning: scientific attitudes and students' conceptual understanding. *Journal of Physics Conference Series*, 1467(1), 012008. <https://doi.org/10.1088/1742-6596/1467/1/012008>
- Toharudin, U. (2011). *Membangun literasi sains peserta didik / Uus Toharudin, Sri Hendrawati, H. Andrian Rustaman* (Vol. 2011, Issue 2011, pp. 1–99). <http://library.um.ac.id/free-contents/index.php/buku/detail/membangun-literasi-sains-peserta-didik-uus-toharudin-sri-hendrawati-h-andrian-rustaman-42905.html>
- Ugo, E. A., & Akpoghol, T. V. (2016). Improving science, technology, engineering and mathematics (STEM) programs in secondary schools in Benue state Nigeria: Challenges and prospects. *Asia Pacific Journal of Education, Arts and Sciences*, 3(3), 6-16.
- Wardani, D. (2004). Belajar dan pembelajaran. *Jakarta: Rineka Cipta*.
- Yuliati, Y. (2017). LITERASI SAINS DALAM PEMBELAJARAN IPA. *Jurnal Cakrawala Pendas*, 3(2). <https://doi.org/10.31949/jcp.v3i2.592>