

DAFTAR PUSTAKA

- Abbasi, A., & Izadpanah, S. (2018). The relationship between critical thinking, its subscales and academic achievement of english language course: the predictability of educational success based on critical thinking. *Academy Journal of Educational Sciences*, 2(2), 91–105. <https://doi.org/10.31805/acjes.445545>
- Abidin, Z., Rumansyah, & Arizona, K. (2020). Pembelajaran online berbasis proyek salah satu solusi kegiatan belajar di tengah pandemi covid-19. *Jurnal Ilmiah Profesi Pendidikan*, 5(1), 64 – 70. <https://doi.org/10.29303/jipp.v5i1.111>
- Abualrob, M. (2019). The role of science teachers in developing the 21st century skills for the elementary school students. *Interdisciplinary Journal of Environmental and Science Education*, 15(1), 1–8. <https://doi.org/https://doi.org/10.29333/ijese/6368>
- Alismail, H., & McGuire, P. (2015). 21st century standards and curriculum: current research and practice. *Journal of Education and Practice*, 6(6), 150–156.
- Alter, F. (2009). Understanding the role of critical and creative thinking in Australian primary school visual arts education. *International Art in Early Childhood Research Journal*, 1(1), 1–12.
- Apriliana, M., Ridwan, A., Hadinugrahaningsih, T., & Rahmawati, Y. (2018). Pengembangan soft skills peserta didik melalui integrasi pendekatan science, technology, engineering, Aarts, and mathematics (STEAM) dalam pembelajaran asam basa. *Jurnal Riset Pendidikan Kimia*, 8(2), 42–53. <https://doi.org/https://doi.org/10.21009/JRPK.082.05>
- Bao, L., & Koenig, K. (2019). Physics education research for 21st century learning. *Disciplinary and Interdisciplinary Science Education Research*, 1(12), 1–11. <https://doi.org/https://doi.org/10.1186/s43031-019-0007-8>
- Bati, K., Yetişir, M., Çalışkan, I., Güneş, G., & Saçan, E. (2018). Teaching the concept of time: A steam-based program on computational thinking in science education. *Cogent Education*, 5:(1507306), 1–16. <https://doi.org/https://doi.org/10.1080/2331186X.2018.1507306>
- Bavinck, H. (2011). *Reformed Dogmatics: Abridged in One Volume*. Grand Rapids, MI: Baker Academic.
- Birgili, B. (2015). Creative and critical thinking skills in problem-based learning environments. *Journal of Gifted Education and Creativity*, 2(2), 71–80. <https://doi.org/10.18200/JGEDC.2015214253>
- Blumenfeld, P., Soloway, E., Marx, R., Krajcik, J., Guzdial, M., & Palincsar, A. (2011). Motivating project-based learning: sustaining the doing, supporting the learning. *Educational Psychologist*, 26(3 & 4), 369–398. <https://doi.org/10.1080/00461520.1991.9653139>
- Bureekhampun, S., & Mungmee, T. (2020). STEAM education for preschool students: Patterns, activity designs and effects. *Journal for the Education of*

- Gifted Young Scientists*, 8(3), 1201–1212.
<https://doi.org/https://doi.org/10.17478/jegys.775835>
- Chen, W., Tang, X., & Mou, T. (2019). Course design and teaching practice in STEAM education at distance via an interactive e-learning platform A case study. *Asian Association of Open Universities Journal*, 14(2), 2414–6994. <https://doi.org/10.1108-AAOUJ-07-2019-0027>
- Conradty, C., & Bogner, F. (2019). From STEM to STEAM: cracking the code? how creativity & motivation interacts with inquiry based learning. *Creativity Research Journal*, 0(0), 1–12. <https://doi.org/10.1080/10400419.2019.1641678>
- Costantino, T. (2017). STEAM by another name: Transdisciplinary practice in art and design education. *Arts Education Policy Review*, 119(2), 100–106. <https://doi.org/10.1080/10632913.2017.1292973>
- Cox Jr, W., & Peck, R. (2018). Christian education as discipleship ormation. *Christian Education Journal: Research on Educational Ministry*, 15(2), 243–261. <https://doi.org/10.1177/0739891318778859>
- Dehghani, M., Sani, H., Pakmehr, H., & Malekzadeh, A. (2011). Relationship between students' critical thinking and self-efficacy beliefs in Ferdowsi university of Mashhad, Iran. *Procedia - Social and Behavioral Sciences*, 15(2011), 2952–2955. <https://doi.org/10.1016/j.sbspro.2011.04.221>
- Docktor, J., & Mestre, J. (2014). Synthesis of discipline-based education research in physics. *Physical Review Special Topics - Physics Education Research*, 10(020119), 020119-1–020119–020143. <https://doi.org/10.1103/PhysRevSTPER.10.020119>
- Edwards, S. (2007). Critical thinking: A two-phase framework. *Nurse Education in Practice*, 2007(7), 303–314. <https://doi.org/10.1016/j.nepr.2006.09.004>
- Facione, P. (2007). *Critical Thinking: What It Is and Why It Counts*. Millbrae, CA: California Academic Press.
- Gayazov, A., Zamaletdinova, G., Amirov, A., Kostryukov, A., & Tikhomirova, E. (2016). Modern teaching tendencies of critical Thinking forming of university students. *International Review of Management and Marketing*, 6(358–363).
- Ghazivakili, Z., Nia, R., Panahi, F., Karimi, M., Gholsorki, H., & Ahmadi, Z. (2014). The role of critical thinking skills and learning styles of university students in their academic performance. *Journal of Advances in Medical Education & Professionalism*, 2(3).
- Graham, D. (2009). *Teaching Redeemptively*. USA: Purposeful Design Publications.
- Gunawan, G., Harjono, A., Herayanti, L., Husein, S., & Fathoroni, F. (2019). Investigating, student's critical thinking disposition based on gender in physics teaching with interactive multimedia. *Jurnal Penelitian Pendidikan Sains*, 9(1), 1767–1770.
- Hadinugrahaningsih, T., Rahmawati, Y., & Ridwan, A. (2017). Developing 21st century skills in chemistry classrooms: Opportunities and challenges of

- STEAM integration. *The 4th International Conference on Research, Implementation, and Education of Mathematics and Science*, 1868(030008), 030008-1–030008-7. <https://doi.org/https://doi.org/10.1063/1.4995107>
- Haesen, S., & Van de Put, E. (2018). *STEAM Education in Europe: A Comparative Analysis Report*. Brussels: Euro STEAM.
- Hartini, A. (2017). Pengembangan perangkat pembelajaran model project based learning untuk meningkatkan kemampuan berpikir kritis siswa sekolah dasar. *Jurnal Pendidikan dan Pembelajaran Sekolah Dasar*, 1(2a), 6–15.
- Hayudiyani, M., Arif, M., & Risnasari, M. (2017). Identifikasi kemampuan berpikir kritis siswa kelas x TKJ ditinjau dari kemampuan awal dan jenis kelamin siswa di SMK N 1 Kamal. *Jurnal Ilmiah Edutic*, 4(1), 21–28.
- Hidayah, R., Salimi, M., & Susiani, T. (2018). Critical thinking skill: konsep dan indikator penilaian. *Jurnal Taman Cendekia*, 1(2), 127–132.
- Hoekema, A. (1994). *Manusia: Ciptaan Menurut Gambar Allah*. Surabaya: Momentum.
- Husnah, M. (2017). Hubungan tingkat berpikir kritis terhadap hasil belajar fisika siswa dengan menerapkan model pembelajaran problem based learning. *Journal of Physics and Science Learning*, 1(2), 10–16.
- Inggriyani, F., & Fazriyah, N. (2017). Pengaruh berpikir kritis terhadap kemampuan menulis narasi siswa kelas V di sekolah dasar. *Jurnal Pendidikan Dasar*, 3(2), 105–115.
- Kang, N.-H. (2019). A review of the effect of integrated STEM or STEAM (science, technology, engineering, arts, and mathematics) education in South Korea. *Asia-Pacific Science Education*, 5(6), 2–19. <https://doi.org/https://doi.org/10.1186/s41029-019-0034-y>
- Karaoc, M. (2016). The significance of critical thinking ability in terms of education. *International Journal of Humanities and Social Science*, 6(7), 81–83.
- Keane, L., & Keane, M. (2016). STEAM by design. *Design and Technology Education: an International Journal*, 21(1), 61–80.
- Khan, A., Shin, L., Hishan, S., Mustaffa, M., Madihie, A., & Sabil, S. (2018). Effect of personality traits and learning styles towards students' academic achievement in Johor Bahru. *International Journal of Engineering & Technology*, 2(2.10), 4–9. <https://doi.org/10.14419/ijet.v7i2.10.10943>
- Khoiriayah, N., Abdurrahman, & Wahyudi, I. (2018). Implementasi pendekatan pembelajaran STEM untuk meningkatkan kemampuan berpikir kritis siswa SMA pada materi gelombang bunyi. *JRKPF UAD*, 5(2), 53–61. <https://doi.org/http://dx.doi.org/10.12928/jrkpf.v5i2.9977>
- Lalang, A., Ibnu, S., & Sutrisno. (2017). Kemampuan berpikir kritis dan pemahaman konseptual siswa dengan inkuiri terbimbing dipadu pelatihan metakognisi pada materi kelarutan dan Ksp. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan*, 2(1), 12–21.

- Liao, C. (2016). From interdisciplinary to transdisciplinary: An arts-integrated approach to STEAM Education. *Art Education*, 69(6), 44–49. <https://doi.org/http://dx.doi.org/10.1080/00043125.2016.1224873>
- Liao, C., Motter, J., & Patton, R. (2016). Tech-savvy girls: Learning 21st-Century skills through STEAM digital artmaking. *Art Education*, 69(4), 29–35. <https://doi.org/http://dx.doi.org/10.1080/00043125.2016.1176492>
- Madan, N. (2017). Changing roles of teachers. *International Education & Research Journal*, 3(6).
- Marin, L., & Halpern, D. (2011). Pedagogy for developing critical thinking in adolescents : Explicit instruction produces greatest gains. *Thinking Skills and Creativity*, 6(1), 1–13. <https://doi.org/https://psycnet.apa.org/doi/10.1016/j.tsc.2010.08.002>
- Mengmeng, Z., Xiantong, Y., & Xinghua, W. (2019). Construction of STEAM curriculum model and case design in kindergarten. *American Journal of Educational Research*, 7(7), 485–490. <https://doi.org/10.12691/education-7-7-8>
- Mu'minah, I., & Suryaningsih, Y. (2020). Implementasi STEAM (science, technology, engineering, arts, and mathematics) dalam pembelajaran abad 21. *Jurnal Bio Educatio*, 5(1), 65–73.
- Munawar, M., Roshayanti, F., & Sugiyanti. (2019). Implementation of STEAM based early childhood education learning in Semarang city. *Jurnal Ceria*, 2(5), 276–282.
- Mutakinati, L., Anwari, I., & Yoshisuke, K. (2018). Analysis of students' critical thinking skill of middle school through stem education project based learning. *Jurnal Pendidikan IPA Indonesia*, 7(1), 54–65. <https://doi.org/10.15294/jpii.v7i1.10495>
- Napsawati. (2020). Analisis situasi pembelajaran IPA fisika dengan metode daring di tengah wabah covid-19. *Jurnal Pendidikan Fisika dan Terapannya*, 3(1), 6–11. <https://doi.org/10.46918/karst.v3i1.546>
- Nikmah, I., & Cintamulya, I. (2017). Analisis berpikir kritis siswa yang bergaya Kognitif reflektif dan implusif pada pembelajaran biologi melalui model Problem Base Learning (PBL) dengan media puzzle. *Proceeding Biology Education Conference*, 14(1), 551–555.
- Nurdwiandari, P. (2018). Analisis kemampuan berpikir kritis matematik dan kemampuan diri siswa SMP di Kabupaten Bandung Barat. *Jurnal Pembelajaran Matematika Inovatif*, 1(5), 1005–1013.
- Oktavia, R., Usmeldi, & Yohandri. (2018). Development of physics learning material based on problem based learning by integrating local wisdom West Sumatra to improve critical thinking Ability of Students. *International Journal of Progressive Sciences and Technologies*, 6(2), 544–553.
- Padmanabha. (2018). Critical thinking: conceptual framework. *i-manager's Journal on Educational Psychology*, 11(4), 45–54.
- Park, H., Byun, S., Sim, J., Han, H., & Baek, Y. S. (2016). Teachers' perceptions

- and practices of STEAM education in south korea. *Eurasia Journal of Mathematics, Science & Technology Education*, 12(7), 1739–1753. <https://doi.org/10.12973/eurasia.2016.1531a>
- Pasler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2009). Learning styles: Concepts and evidence. *Psychological Science in the Public Interest*, 9, 105–110. <https://doi.org/10.1111/j.1539-6053.2009.01038.x>
- Permana, T., Hindun, L., Roffi'ah, N., & Azizah, A. (2019). Critical thinking skills: The academic ability, mastering concepts, and analytical skill of undergraduate students. *Jurnal Pendidikan Biologi Indonesia*, 5(1), 1–8. <https://doi.org/https://doi.org/10.22219/jpbi.v5i1.7626>
- Phan, H. (2010). Critical thinking as a self-regulatory process component in teaching and learning. *Psicothema*, 22(2), 284–292.
- Poythress, V. (2006). *Redeeming Science: A God-centered Approach*. Wheaton, Illinois: Crossway Books.
- Poythress, V. (2009). *In the Beginning Was the Word*. Wheaton, Illinois: Crossway Books.
- Rachmantika, A., & Wardono. (2019). Peran kemampuan berpikir kritis siswa pada pembelajaran matematika dengan pemecahan masalah. *PRISMA*, 2(2019), 439–443.
- Rahmawati, Y., Ramadhani, S., & Afrizal. (2020). Developing students' critical thinking: A STEAM project for chemistry learning. *Universal Journal of Educational Research*, 8(1), 72–82. <https://doi.org/10.13189/ujer.2020.080108>
- Rahmawati, Y., Ridwan, Hadinugrahaningsih, & Soeprijanto. (2018). Developing critical and creative thinking skills through STEAM integration in chemistry learning. *International Conference of Chemistry*, 1156(2019) 012033, 1–8. <https://doi.org/10.1088/1742-6596/1156/1/012033>
- Rochmad, Agoestanto, A., & Kharis, M. (2018). Characteristic of critical and creative thinking of students of mathematics education study program. *Journal of Physics: Conference Series*, 983(2018), 1–5. <https://doi.org/10.1088/1742-6596/983/1/012076>
- Rositawati, D. (2018). Kajian berpikir kritis pada metode inkuiri. *Prosiding SNFA*, 74–83.
- Sadidi, F., & Pospiech, G. (2019). Teaching critical thinking in the physics classroom: High school students think about antimatter. *Journal of Physics: Conference Series*, 1287(012063), 1–9. <https://doi.org/10.1088/1742-6596/1287/1/012063>
- Samsudin, D., & Hardini, T. (2019). The influence of learning style and metacognitive skills on students' critical thinking in the context of student creativity ptogram. *International Journal of Education*, 11(2), 117–124. <https://doi.org/10.17509/ije.v11i2.14750>
- Sendag, S., & Odabasi, H. (2009). Effects of an online problem based learning course on content knowledge acquisition and critical thinking skills.

- Computers & Education*, 53(1), 132–142.
<https://doi.org/10.1016/j.compedu.2009.01.008>
- Stukalenko, Zhakhina, B., Abuyev, K., Seitkasymov, A., & Utegenov, M. (2016). Critical thinking development in students during college education process. *Global Media Journal*, 2(4), 1–7.
- Sumarni, W., & Kadarwati, S. (2020). Ethno STEM project based learning: It's impact to critical and creative thinking skills. *Jurnal Pendidikan IPA Indonesia*, 9(1), 11–21. <https://doi.org/10.15294/jpii.v9i1.21754>
- Sutini, Sutawidjaja, A., Parta, I., & Susanto, H. (2017). Identification of critical thinking process in solving mathematic problems. *Journal of Research & Method in Education*, 7(4), 5–10. <https://doi.org/10.9790/7388-0704010510>
- Tabi'in, A. (2019). Implementation of STEAM method (Science, Technology, Engineering, Arts And Mathematics) for early childhood developing in Kindergarten Mutiara Paradise Pekalongan. *Early Childhood Research Journal*, 2(1), 36–47.
- Tong, S. (2006). *Arsitek Jiwa*. Surabaya: Momentum.
- Tung, K. Y. (2014). *Menuju Sekolah Kristen Impian Masa Kini*. Yogyakarta: ANDI.
- Twiningsih, A. (2020). Improving student learning outcomes through stem-based magic box medium in the concept of addition theory. *International Journal of Research in STEM Education*, 2(1), 79–90. <https://doi.org/https://doi.org/10.31098/ijrse.v2i1.183>
- Utami, B., Saputro, S., Ashadi, Masykuri, M., & Widoretno, S. (2017). Critical thinking skills profile of high school students in learning chemistry. *International Journal of Science and Applied Science: Conference Series*, 1(2), 124–130. <https://doi.org/http://dx.doi.org/10.20961/ijsscs.v1i2.5134>
- Van Dyk, J. (2013). *Surat-Surat untuk Lisa: Sebuah Percakapan dengan Guru Kristen*. Tangerang: UPH Press.
- Wandari, G., Wijaya, A., & Agustin, R. (2018). The effect of STEAM-based learning on students' concept mastery and creativity in learning light and optics. *Journal of Science Learning*, 2(1), 26–32. <https://doi.org/10.17509/jsl.v2i1.12878>
- White, B., Stains, M., Escriu-Sune, M., Medaglia, E., Rostamnjad, L., Chinn, C., & Sevian, H. (2011). A novel instrument for assessing students' critical thinking abilities. *Journal of College Science Teaching*, 40(5), 102–107.
- Wijayanti, A., & Fajriyah, K. (2018). Implementasi stem project based learning untuk meningkatkan keterampilan kerja ilmiah mahasiswa calon guru sd. *Jurnal Pendidikan Sains*, 6(2), 62–69.
- Williamson, M., & Watson, R. (2007). Learning styles research: Understanding how teaching should be impacted by the way learners learn part III: Understanding how learners' personality Styles Impact Learning. *Christian Education Journal*, 4(1), 74. <https://doi.org/https://doi.org/10.1177/073989130700400105>

Yakman, G., & Lee, H. (2012). Exploring the exemplary STEAM Education in the U.S. as a Practical educational framework for Korea. *Journal of The Korean Association For Science Education*, 32(6), 1072–1086.
<https://doi.org/10.14697/jkase.2012.32.6.1072>

Zulmaulida, R., Wahyudin, & Dahlan, J. (2018). Watson-Glaser's critical thinking skills. *Journal of Physics: Conference Series*, 1028(2018), 1–6.
<https://doi.org/10.1088/1742-6596/1028/1/012094>

