

DAFTAR PUSTAKA

- Abdullah, S. I. S. S., & Halima, L. (2010). Development of instrument measuring the level of teacher's pedagogical content knowledge (PCK) in Environmental Education. *Procedia - Social and Behavioral Sciences*, 9, 174–178. <https://doi.org/10.1016/j.sbspro.2010.12.131>
- Abubakar, A. M., Elrehail, H., Alatailat, M. A., & Elçi, A. (2019). Knowledge management, decision-making style and organizational performance. *Journal of Innovation and Knowledge*, 4(2), 104–114. <https://doi.org/10.1016/j.jik.2017.07.003>
- Adams, K. (2005). The Sources of Innovation and Creativity. In *National Center on Education and the Economy (NCEE) Research Summary and Final Report*. <https://files.eric.ed.gov/fulltext/ED522111.pdf>
- Adibe, M. I. (2014). Innovations in science and technology education: A case for ethnoscience based science classrooms. *International Journal of Scientific & Engineering Research*, 5(1), 52–56.
- Agussuryani, Q., Sumarni, W., Subali, B., & Saptono, S. (2020). Implementation of STEM Integrated Ethnoscience-based Vocational Science Learning in Fostering Students' Higher Order Thinking Skills (HOTs). *International Journal of Active Learning*, 5(2), 53–61.
- Ahzan, S., & Gummah, S. (2014). Perbedaan Hasil Belajar Antara Gaya Berpikir Divergen Dan Konvergen Mata Kuliah Gelombang Mahasiswa Pendidikan Fisika. *Lensa: Jurnal Kependidikan Fisika*, 2(1), 143. <https://doi.org/10.33394/j-lkf.v2i1.294>
- Aikenhead, G. (2010). Renegotiating the Culture of School Science: Scientific Literacy for a Informed Public. *Lisbon's School of Science Conference, April*, 1–23. <file:///C%7C/KCVS/martin/EdCI/literature/literacy/aikenhead.htm>
- Ainiyah, Q. (2017). Social Learning Theory dan Perilaku Agresif Anak dalam Keluarga. *Jurnal Ilmu Syari'ah Dan Hukum*, 2(1), 91–104.
- Aji, S. D. (2017). Makalah Utama ISSN : 2527-6670 Etnosains dalam membentuk kemampuan berpikir kritis dan kerja ilmiah siswa. 7–11.
- Åkerblom, D., & Lindahl, M. (2017). Authenticity and the relevance of discourse and figured worlds in secondary students' discussions of socioscientific issues. *Teaching and Teacher Education*, 65, 205–214. <https://doi.org/10.1016/j.tate.2017.03.025>
- Alonso-centeno, A., & Corb, M. (2020). *and Strategies Relating to Education for Sustainable Development (ESD) through the Perspectives of Spanish Secondary Education Trainee Teachers*. 8.
- Alreemy, Z., Chang, V., Walters, R., & Wills, G. (2016). Critical success factors (CSFs) for information technology governance (ITG). *International Journal of Information Management*, 36(6), 907–916. <https://doi.org/10.1016/j.ijinfomgt.2016.05.017>
- Altun-Yalçın, S., Açıslı, S., & Turgut, Ü. (2011). Determining the levels of pre-service science teachers' scientific literacy and investigating effectuality of the education faculties about developing scientific literacy. *Procedia - Social and Behavioral Sciences*, 30, 103–107. <https://doi.org/10.1016/j.sbspro.2011.04.160>

- and Behavioral Sciences*, 15, 783–787.
<https://doi.org/10.1016/j.sbspro.2011.03.185>
- Amelia, T., Jumini, S., & Khoiri, A. (2021). Analysis of Creativity and Attitudes Caring The Environment of Junior High School Students : Study of Environmental Physics Learning Using Learning Modules. *Jurnal Pendidikan Fisika Indonesia*, 17(June), 40–48.
<https://doi.org/10.15294/jpfi.v17i1.26301>
- Anagün, S. S., & Özden, M. (2010). Teacher candidate's perceptions regarding socio-scientific issues and their competencies in using socio-scientific issues in science and technology instruction. *Procedia - Social and Behavioral Sciences*, 9, 981–985. <https://doi.org/10.1016/j.sbspro.2010.12.271>
- Andrews-Larson, C., McCrackin, S., & Kasper, V. (2019). The next time around: scaffolding and shifts in argumentation in initial and subsequent implementations of inquiry-oriented instructional materials. *Journal of Mathematical Behavior*, 56(June), 100719.
<https://doi.org/10.1016/j.jmathb.2019.100719>
- Andryani, F., Djafar, H., & Qaddafi, M. (2016). Penerapan Pendekatan SSI (Socio-Scientifict Issues) dengan Menggunakan Media Power Point terhadap Kemampuan Berpikir Kritis pada Mahasiswa Baru Angkatan 2015 Jurusan Pendidikan Fisika Fakultas Tarbiyah dan Keguruan Universitas Islam Negeri Alauddin Makassar. *Jurnal Pendidikan FisikaA & A (Medan)*, 4(2), 64–66.
<https://doi.org/10.24252/jpf.v4i2.3705>
- Anggun Zuhaidaa, W. K. (2018). Thabiea : Journal of Natural Science Teaching. *Thabiea*, 01(02), 102–120.
- Anjarwati, P. G. P., Sajidan, S., & Prayitno, B. A. (2018). Problem-Based Learning Module of Environmental Changes to Enhance Students' Creative Thinking Skill. *Biosaintifika: Journal of Biology & Biology Education*, 10(2), 313–319. <https://doi.org/10.15294/biosaintifika.v10i2.12598>
- Anwar, M. N., Aness, M., Khizar, A., Naseer, M., & Muhammad, G. (2012). Relationship of Creative Thinking with the Academic Achievements of Secondary School Students. *International Interdisciplinary Journal of Education*, 1(3), 1–4. http://ijjoe.org/IIJE_01_03_12.pdf
- Ardan, A. S. (2016). The Development of Biology Teaching Material Based on the Local Wisdom of Timorese to Improve Students Knowledge and Attitude of Environment In Caring the Persevation of Environment. *International Journal of Higher Education*, 5(3), 190–200.
<https://doi.org/10.5430/ijhe.v5n3p190>
- Arlianovita, D., Setiawan, B., & Sudibyo, E. (2015). Pendekatan Etnosains dalam Proses Pembuatan Tempe terhadap Kemampuan Literasi Sains. *SEMINAR NASIONAL FISIKA DAN PEMBELAJARANNYA 2015 Pembelajaran*, 101–107.
- Armandita, P., Wijayanto, E., Rofiatius, L., & Susanti, A. (2017). Analisis Kemampuan Berpikir Kreatif Pembelajaran Fisika Di Kelas XJ Mia 3 Sma Negeri 11 Kota Jambi. *Penelitian Ilmu Pendidikan*, 10(2).
- Astuti, N. H., Rusilowati, A., & Subali, B. (2020). STEM-Based Learning Analysis to Improve Students' Problem Solving Abilities in Science Subject: *commit to user*

- a Literature Review. *Journal of Innovative Science Education*, 9(3), 79–86.
<https://doi.org/10.15294/jise.v9i2.38505>
- Atmojo, S. E. (2012). Profil keterampilan proses sains dan apresiasi siswa terhadap profesi pengrajin tempe dalam pembelajaran ipa berpendekatan etnosains. *Jurnal Pendidikan IPA Indonesia*, 1(2), 115–122.
<https://doi.org/10.15294/jpii.v1i2.2128>
- Awalsyah A, Sarwi, S. (2018). Pengembangan Lembar Kerja Siswa (Lks) Berbantuan Kvisoft Flipbook Maker Untuk Mengembangkan Keterampilan Ilmiah Siswa. *UPEJ Unnes Physics Education Journal*, 7(3), 28–35.
<https://doi.org/10.15294/upej.v7i3.27673>
- Azwar. (2000). Reliabilitas dan validitas (Edisi 4). In *Yogyakarta: Pustaka Pelajar*.
- Balqis, A. (2018). Validitas Media Booklet Berbasis Etnosains Sub Materi Sifat Fisika dan Kimia serta Perubahannya untuk Kelas VII SMP. *E-Journal Unesa*, 6(2).
- Bandura. (1986). *Social Foundations of Thought and Action: a Social Cognitive Theory*. Englewood Cliffs, Nj: Prentice-hall.
- Baron, J., Scott, S., Fincher, K., & Emlen Metz, S. (2015). Why does the Cognitive Reflection Test (sometimes) predict utilitarian moral judgment (and other things)? *Journal of Applied Research in Memory and Cognition*, 4(3), 265–284. <https://doi.org/10.1016/j.jarmac.2014.09.003>
- Barry. (2016). Beverage engineers: Creative international STEM project. *International Journal of Humanities and Social Sciences*, 8(4), 18–28.
- Becker, K., & Park, K. (2011). Effects of integrative approaches among science , technology , engineering , and mathematics (STEM) subjects on students ' learning : A preliminary meta-analysis. *Journal of STEM Education*, 12(5).
- Bissinger, K., & Bogner, F. X. (2018). Environmental literacy in practice: education on tropical rainforests and climate change. *Environment, Development and Sustainability*, 20(5), 2079–2094.
<https://doi.org/10.1007/s10668-017-9978-9>
- Borg & Gall, J. P. (1989). *Educational Research: An Introduction, Fifth edition*. Longman.
- Bossér, U. (2018). *Exploring the complexities of integrating socioscientific issues in science teaching* (Issue 304).
- Budiyono. (2015). *Introduction to Learning Outcomes Assessment*. UNS Press.
- Bukova-Güzel, E., Uğurel, I., Özgür, Z., & Kula, S. (2010). The review of undergraduate courses aimed at developing subject matter knowledge by mathematics student teachers. *Procedia - Social and Behavioral Sciences*, 2(2), 2233–2238. <https://doi.org/10.1016/j.sbspro.2010.03.314>
- Cataluña, Javier, Gaitán, Correa, E. (2015). A comparison of the different versions of popular technology acceptance models a non-linear perspective. *Kybernetes*, 44(5), 788–805. <https://doi.org/10.1108/K-09-2014-0184>
- Cavanagh, N. M. (2015). Reflective judgment: Can problem-based learning approach make a difference? *ProQuest Dissertations and Theses*, 114. http://ezproxy.lib.ryerson.ca/login?url=https://search.proquest.com/docview/1719533097?accountid=13631%0Ahttp://sfx.scholarsportal.info/ryerson??urlcommit_to_use

- _ver=Z39.88-
2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&genre=dissertations+%
- 26+theses&sid=ProQ:ProQ
- Chaichana, D., Srijuntrapun, P., & Rawang, W. (2019). An integrative framework of environmental education for environmental crisis transformation. *Pertanika Journal of Social Sciences and Humanities*, 27(4), 2475–2494.
- Chiappetta & Koballa, T. R. (2010). *Science Instruction in The Middle and Secondary Schools: Developing Fundamental Knowledge and Skills*. Pearson Education Inc.
- Chng, G. S., Wild, E., Hollmann, J., & Otterpohl, N. (2014). Children's evaluative skills in informal reasoning: The role of parenting practices and communication patterns. *Learning, Culture and Social Interaction*, 3(2), 88–97. <https://doi.org/10.1016/j.lcsi.2014.02.003>
- Cohen. (1988). *Statistical Power Analysis for the Behavior Sciences*. Hillsdale N. Erlbaum Associates.
- Collete & Chiappetta. (1994). Science Instruction in the middle and secondary school (3rd.ed). In New York: Merril.
- Cremin, T., Glauert, E., Craft, A., Compton, A., & Stylianidou, F. (2015). Creative Little Scientists: exploring pedagogical synergies between inquiry-based and creative approaches in Early Years science. *Education 3-13*, 43(4), 404–419. <https://doi.org/10.1080/03004279.2015.1020655>
- Cristea, A. (2016). The Development Of Design Model Of Conflict Resolution Education Based On Cultural Values Of Pela. *Revista Brasileira de Ergonomia*, 9(2), 10. <https://doi.org/10.5151/cidi2017-060>
- Crocker, L., & Algina, J. (1986). Introduction to modern and classical test theory. *Fla: Holt Rinehart & Winston*.
- Cruz, J. P. (2017). Students' Environmental Awareness and Practices: Basis for Development of Advocacy Program. *Mimbar Pendidikan*, 2(1), 43–64. <https://doi.org/10.17509/mimbardik.v2i1.6022>
- Dahar. (2011). *Teori Belajar dan Pembelajaran*. Offset Yogyakarta.
- Daniel Tan, K. C., & Kim, M. (2012). Issues and challenges in science education research: Moving forward. *Issues and Challenges in Science Education Research: Moving Forward, April*, 1–350. <https://doi.org/10.1007/978-94-007-3980-2>
- Davies, D., Jindal-Snape, D., Collier, C., Digby, R., Hay, P., & Howe, A. (2013). Creative learning environments in education-A systematic literature review. *Thinking Skills and Creativity*, 8(1), 80–91. <https://doi.org/10.1016/j.tsc.2012.07.004>
- Derman, M., & Gurbuz, H. (2018). Environmental Education in the Science Curriculum in Different Countries: Turkey, Australia, Singapore, Ireland, and Canada. *Journal of Education in Science, Environment and Health*, 129–141. <https://doi.org/10.21891/jeseh.409495>
- Diani, R., Latifah, S., Jamaluddin, W., Pramesti, A., Susilowati, N. E., & Diansah, I. (2020). Improving Students' Science Process Skills and Critical Thinking Skills in Physics Learning through FERA Learning Model with SAVIR Approach. *Journal of Physics: Conference Series*, 1467(1).

- <https://doi.org/10.1088/1742-6596/1467/1/012045>
- Diki, D. (2014). Creativity for Learning Biology in Higher Education. *Lux*, 3(1), 1–12. <https://doi.org/10.5642/lux.201303.03>
- Dragoş, V., & Mih, V. (2015). Scientific Literacy in School. *Procedia - Social and Behavioral Sciences*, 209(July), 167–172. <https://doi.org/10.1016/j.sbspro.2015.11.273>
- Dryden, G dan Vos, J. (2016). *The New Learning Revolution: How Brain Can Lead The World in Learning, Education, and Schooling*. The Learning Web.
- El-Batri, B., Alami, A., Zaki, M., & Nafidi, Y. (2019). Extracurricular environmental activities in Moroccan middle schools: Opportunities and challenges to promoting effective environmental education. *European Journal of Educational Research*, 8(4), 1013–1028. <https://doi.org/10.12973/eu-jer.8.4.1013>
- Espeja, A. G., & Lagarón, D. C. (2015). Socio-scientific Issues (SSI) in Initial Training of Primary School Teachers: Pre-service Teachers' Conceptualization of SSI and Appreciation of the Value of Teaching SSI. *Procedia - Social and Behavioral Sciences*, 196(July 2014), 80–88. <https://doi.org/10.1016/j.sbspro.2015.07.015>
- Fatmawati, B. (2011). Pembelajaran Berbasis Proyek untuk Meningkatkan Keterampilan Berpikir Kreatif Mahasiswa. *Jurnal Pengajaran IPA*, 16(2).
- Filho, W. L. (2009). La educación para la sostenibilidad: Iniciativas internacionales. *Revista de Educacion, SPEC. ISSUE*, 263–277.
- Fischer, T. B., Jha-Thakur, U., & Hayes, S. (2015). Environmental impact assessment and strategic environmental assessment research in the UK. *Journal of Environmental Assessment Policy and Management*, 17(1). <https://doi.org/10.1142/S1464333215500167>
- Fitria, M., & Wisudawati, A. W. (2018). The Development of Ethnoscience-Based Chemical Enrichment Book as a Science Literacy. *International Journal of Chemistry Education Research*, 2(1), 50–59. <https://doi.org/10.20885/ijcer.vol2.iss1.art8>
- Fitriani, N. L. F. (2016). Physics Education based Ethnoscience: Literature Review. *International Conference on Mathematics, Science, and Education 2016 (ICMSE 2016)*, 2016(Icmse), 31–34.
- Fitzgerald, A., & Smith, K. (2016). Science that matters: Exploring science learning and teaching in primary schools. *Australian Journal of Teacher Education*, 41(4), 64–78. <https://doi.org/10.14221/ajte.2016v41n4.4>
- Foong, C. C., & Daniel, E. G. S. (2010). Assessing student's arguments made in socio-scientific contexts: The considerations of structural complexity and the depth of content knowledge. *Procedia - Social and Behavioral Sciences*, 9, 1120–1127. <https://doi.org/10.1016/j.sbspro.2010.12.294>
- Frey, B. B. (2018). Torrance Tests of Creative Thinking. In *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*. <https://doi.org/10.4135/9781506326139.n705>
- Gercek, C., & Ozcan, O. (2015). Views of Biology Teacher Candidates about Context Based Approach. *Procedia - Social and Behavioral Sciences*, 197(February), 810–814. <https://doi.org/10.1016/j.sbspro.2015.07.190>

- Gondwe, M., & Longnecker, N. (2014). Scientific and Cultural Knowledge in Intercultural Science Education: Student Perceptions of Common Ground. *Research in Science Education*, 45(1), 117–147. <https://doi.org/10.1007/s11165-014-9416-z>
- Graffigna, G., Vegni, E., Barello, S., Olson, K., & Bosio, C. A. (2011). Studying the social construction of cancer-related fatigue experience: The heuristic value of Ethnoscience. *Patient Education and Counseling*, 82(3), 402–409. <https://doi.org/10.1016/j.pec.2010.12.017>
- Grose, K., & Grose, K. (2014). *From 21st Century Learning to Learning in the 21st Century: Influences on Transforming Teacher Knowledge of Constructivist Practices in Technology-Rich Learning Environments*. University of Toronto.
- Guilford, J. P. (1950). Creativity. *American Psychologist*, 5, 444–454.
- Guilford, J. P. (1968). Intelligence, Creativity, and Their Educational Implications. *California: RR. Knapp*.
- Hadzigeorgiou, Y., Fokalis, P., & Kabouropoulou, M. (2012). Thinking about Creativity in Science Education. *Creative Education*, 03(05), 603–611. <https://doi.org/10.4236/ce.2012.35089>
- Hake, R. R. (1998). Interactive-engagement versus traditional methods: A six-thousand-student survey of mechanics test data for introductory physics courses. *American Journal of Physics*, 66(1), 64–74. <https://doi.org/10.1119/1.18809>
- Hancock, T. S., Friedrichsen, P. J., Kinslow, A. T., & Sadler, T. D. (2019). Selecting Socio-scientific Issues for Teaching. *Science & Education*, 28(6–7), 639–667. <https://doi.org/10.1007/s11191-019-00065-x>
- Hannula, J. (2018). *Subject matter knowledge and pedagogical content knowledge in the learning diaries of prospective To cite this version : HAL Id : hal-01949151*.
- Hashemi, S. Z. (2020). Environmental education in social sciences textbooks of senior high schools in Iran. *Pertanika Journal of Social Sciences and Humanities*, 28(1), 441–451.
- Herman, R. D. K. (2016). Traditional knowledge in a time of crisis: climate change, culture and communication. *Sustainability Science*, 11(1), 163–176. <https://doi.org/10.1007/s11625-015-0305-9>
- Hogarth, R. M., & Soyer, E. (2015). Providing information for decision making: Contrasting description and simulation. *Journal of Applied Research in Memory and Cognition*, 4(3), 221–228. <https://doi.org/10.1016/j.jarmac.2014.01.005>
- Hong, S. K. (2013). Biocultural diversity conservation for island and islanders: Necessity, goal and activity. *Journal of Marine and Island Cultures*, 2(2), 102–106. <https://doi.org/10.1016/j.jimic.2013.11.004>
- Hong, S. K., Wehi, P., & Matsuda, H. (2013). Island biocultural diversity and traditional ecological knowledge. *Journal of Marine and Island Cultures*, 2(2), 57–58. <https://doi.org/10.1016/j.jimic.2013.11.005>
- Hotaman, D. (2010). The teaching profession: Knowledge of subject matter, teaching skills and personality traits. *Procedia - Social and Behavioral Sciences*, 28, 200–205. <https://doi.org/10.1016/j.sbspro.2010.04.034>

- Sciences*, 2(2), 1416–1420. <https://doi.org/10.1016/j.sbspro.2010.03.211>
- Howell, J. B., & Saye, J. W. (2018). Integrating theory and practice: Factors shaping elementary teachers' interpretation of an inquiry model for teaching social studies. *Journal of Social Studies Research*, 42(2), 201–214. <https://doi.org/10.1016/j.jssr.2017.04.003>
- Howieson, W. B., Burnes, B., & Summers, J. C. (2019). Organisational leadership and/or sustainability: Future directions from John Dewey and social movements. *European Management Journal*, 37(6), 687–693. <https://doi.org/10.1016/j.emj.2019.02.003>
- Ida Kukliansky & Haim Eshach. (2014). Evaluating a Contextual-Based Course on Data Analysis for the Physics Laboratory. *Journal of Science Education and Technology*, 23, 108–115.
- Iordanou, K., & Constantinou, C. P. (2014). Developing pre-service teachers' evidence-based argumentation skills on socio-scientific issues. *Learning and Instruction*, 34, 42–57. <https://doi.org/10.1016/j.learninstruc.2014.07.004>
- Ismawati, R., & Pertiwi, U. D. (2019). Socioscientific Issues-Based Learning as an Effort to Train High Order Thinking Skills in Junior High School Students. *Indonesian Journal of Biology Education*, 2(2), 21–25. <https://doi.org/10.31002/ijobe.v2i2.1674>
- Istiana, R., & Herawatia, D. (2019). Student Argumentation Skill Analysis of Socioscientific Issues in Solving Environmental Problems. *Jhss (Journal of Humanities and Social Studies)*, 3(1), 22–26. <https://doi.org/10.33751/jhss.v3i1.1096>
- Jain, J., Lim, B. K., & Abdullah, N. (2013). Pre-service Teachers' Conceptions of the Nature of Science. *Procedia - Social and Behavioral Sciences*, 90(InCULT 2012), 203–210. <https://doi.org/10.1016/j.sbspro.2013.07.083>
- Jerrim, J., Oliver, M., & Sims, S. (2019). The relationship between inquiry-based teaching and students' achievement. New evidence from a longitudinal PISA study in England. *Learning and Instruction*, 61(May 2018), 35–44. <https://doi.org/10.1016/j.learninstruc.2018.12.004>
- Joyce, B., Weil, M., & Calhoun, E. (2011). *Models of teaching*. Pustaka Pelajar.
- Kaptan, K., & Timurlenk, O. (2012). Challenges for Science Education. *Procedia - Social and Behavioral Sciences*, 51, 763–771. <https://doi.org/10.1016/j.sbspro.2012.08.237>
- Karal, I. S., Alev, N., & Başkan, Z. (2010). Student teachers' Subject Matter Knowledge (SMK) on electric current and magnetic field. *Procedia - Social and Behavioral Sciences*, 2(2), 1498–1502. <https://doi.org/10.1016/j.sbspro.2010.03.225>
- Kertiasih, E. L. (2018). Implementation of e-UKBM-Assisted Wenning Inquiry Learning to Improve Students' Scientific Skills. *Journal of Education Action Research*, 2(4), 363. <https://doi.org/10.23887/jeiar.v2i4.16334>
- Khoiri, A., Kahar, M. S., & Indrawati, R. T. (2018). Ethnoscience Approach in Cooperative Academic Education Programs (COOP). *Journal of Physics: Conference Series*, 1114(1). <https://doi.org/10.1088/1742-6596/1114/1/012018>
- Khoiri, A., Sunarno, W., Sajidan, & Sukarmin. (2019). Inquiry training model to *commit to user*

- improve creativity student in environmental physics courses. *AIP Conference Proceedings*, 2194(December). <https://doi.org/10.1063/1.5139781>
- Khoiri A & Sunarno W. (2019). How Is Students' Creative Thinking Skills ? An Ethnoscience Learning Implementation. *Jurnal Ilmiah Pendidikan Fisika Al-BiRuNi*, 08(October), 153–163. <https://doi.org/10.24042/jipfalbiruni.v0i0.4559>
- Khoiri, A, Nasihah, U., & Kahar, M. (2017). Analisis Prestasi Belajar Fisika Berpendekatan SETS di Tinjau dari Motivasi Berprestasi. *Jurnal Riset Dan Kajian Pendidikan Fisika*, 4(2), 83. <https://doi.org/10.12928/jrkpf.v4i2.8166>
- Khoiri, A, Sunarno, W., Sajidan, S., & Sukarmin, S. (2020). Development of strategic environmental assessment (sea) in science learning. *International Journal of Advanced Science and Technology*, 29(7), 3771–3782.
- Khoiri, A, Sunarno, W., Sajidan, S., & Sukarmin, S. (2021). Analysing students ' environmental awareness profile using strategic environmental assessment [version 1 ; peer review : awaiting peer review]. *F1000Research*, 1–14.
- Khoiri, Ahmad, Kahar, M. S., & Indrawati, R. T. (2018). Ethnoscience Approach in Cooperative Academic Education Programs (COOP). *Journal of Physics: Conference Series*, 1114(1). <https://doi.org/10.1088/1742-6596/1114/1/012018>
- Khoiri, & Haryanto, S. (2018). the 21St Century Science Skills Profile Based Local Wisdom Education (Tourist Attractions and Typical Foods in Regency of Wonosobo). *Jurnal Penelitian Dan Pengabdian Kepada Masyarakat UNSIQ*, 5(3), 361–371. <https://doi.org/10.32699/ppkm.v5i3.485>
- Kirk, R. E. (2013). Experimental design: procedures for the behavioral sciences (4th ed.). In *Thosand Oaks*.
- Kirschenbaum, H. (1992). A Comprehensive Model For Values Education and Moral Education. *Journal Citation Phi Delta Kappan*, 73, (10),.
- Kirshbaum, M. N., Olson, K., Pongthavornkamol, K., & Graffigna, G. (2013). Understanding the meaning of fatigue at the end of life: An ethnoscience approach. *European Journal of Oncology Nursing*, 17(2), 146–153. <https://doi.org/10.1016/j.ejon.2012.04.007>
- Kurak, M. (2016). Causation in Reflective Judgment. *Kant Studies Online*, 12–41.
- Kurniawati, A., Isnaeni, W., & Dewi, N. R. (2013). Implementasi metode penugasan analisis video pada materi perkembangan kognitif, sosial, dan moral. *Jurnal Pendidikan IPA Indonesia*, 2(2), 149–155. <https://doi.org/10.15294/jpii.v2i2.2716>
- Kutlu, N., & Gökdere, M. (2015). The effect of purdue model based science teaching on creative thinking. *International Journal of Education and Research*, 3(3), 589–599. www.ijern.com
- Lätsch, A. (2018). The interplay of emotional instability and socio-environmental aspects of schools during adolescence. *European Journal of Educational Research*, 7(2), 281–293. <https://doi.org/10.12973/eu-jer.7.2.281>
- Lent, R. W., & Brown, S. D. (2019). Social cognitive career theory at 25: Empirical status of the interest, choice, and performance models. *Journal of Vocational Behavior*, 115(June), 103316. <https://doi.org/10.1016/j.jvb.2019.06.004> commit_to_user

- Lumantarna, B., Pudjisuryadi, P., Soetanto, R. M., & Hindrajaya, G. G. (2017). Local Wisdom to a Sustainable Non-engineered Brick Building. *Procedia Engineering*, 171, 159–167. <https://doi.org/10.1016/j.proeng.2017.01.322>
- Malik, A., Nuraeni, Y., Samsudin, A., & Sutarno, S. (2019). Creative Thinking Skills of Students on Harmonic Vibration using Model Student Facilitator and Explaining (SFAE). *Jurnal Ilmiah Pendidikan Fisika Al-Biruni*, 8(1), 77–88. <https://doi.org/10.24042/jipf.albiruni.v8i1.3056>
- McAuliffe, M. (2016). The potential benefits of divergent thinking and metacognitive skills in STEAM learning: A discussion paper. *International Journal of Innovation, Creativity and Change*, 2(3), 71–82.
- McFarlane, D. A. (2013). Understanding the Challenges of Science Education in the 21st Century: New Opportunities for Scientific Literacy. *International Letters of Social and Humanistic Sciences*, 4, 35–44. <https://doi.org/10.18052/www.scipress.com/ilshs.4.35>
- Mer, A. Ç. İ. (2007). Effective Teaching in Science: A Review of Literature. *Journal of Turkish Science Education*, 4(1), 20–44.
- Milka. (2014). Kontribusi Teori Belajar Gagne Dalam Meningkatkan Kompetensi Pedagogik Pendidik. *KIP Vol III No. 2, III(2)*, 599–606.
- Mısır, E., Bora, E., & Akdede, B. B. (2018). Relationship between social-cognitive and social-perceptual aspects of theory of mind and neurocognitive deficits, insight level and schizotypal traits in obsessive-compulsive disorder. *Comprehensive Psychiatry*, 83, 1–6. <https://doi.org/10.1016/j.comppsych.2018.02.008>
- Mostyn, A., Jenkinson, C. M., McCormick, D., Meade, O., & Lynn, J. S. (2013). An exploration of student experiences of using biology podcasts in nursing training. *BMC Medical Education*, 13, 12. <https://doi.org/10.1186/1472-6920-13-12>
- Murdani, E. (2020). Hakikat Fisika dan keterampilan proses Sains. *Jurnal Filsafat Indonesia*, 3(3), 72–80. <https://ejournal.undiksha.ac.id/index.php/JFI/article/view/22195>
- Murniawaty, I. (2019). An Assessment of Environmental Awareness: The Role of Ethic Education. *JSSH (Jurnal Sains Sosial Dan Humaniora)*, 2(2), 225. <https://doi.org/10.30595/jssh.v2i2.3431>
- Nana Syaodih Sukmadinata, A. &. (2010). Pengembangan Model Pembelajaran Terpadu Berbasis Budaya Untuk Meningkatkan Apresiasi Siswa Terhadap Budaya Lokal. *Jurnal Cakrawala Pendidikan*, 2(2), 189–203. <https://doi.org/10.21831/cp.v2i2.339>
- Nuangchalerm, P. (2015). Development of Indigenous Science Instructional Model. *The 1st International Conference on Educational Reform 2007, October*.
- Nurdin, B. V., & Ng, K. S. F. (2013). Local Knowledge of Lampung People in Tulang Bawang: An Ethnoecological and Ethnotechnological Study for Utilization and Conservation of Rivers. *Procedia - Social and Behavioral Sciences*, 91, 113–119. <https://doi.org/10.1016/j.sbspro.2013.08.408>
- Nurwidodo, N., Amin, M., Ibrohim, I., & Sueb, S. (2020). The role of eco-school program (Adiwiyata) towards environmental literacy of high school students. *commit to user*

- European Journal of Educational Research*, 9(3), 1089–1103.
<https://doi.org/10.12973/eu-jer.9.3.1089>
- Ogawa, M. (1986). Toward a new rationale of science education in a non-western society. *European Journal of Science Education*, 8(2), 113–119.
<https://doi.org/10.1080/0140528860800201>
- Okwara, O. K., & Upu, F. T. (2017). Effect of Ethnoscience Instructional Approach on Students Achievement and Interest in Upper Basic Science and Technology in Benue State Nigeria. *International Journal of Scientific Research in Education*, 10(1), 69–78.
- Osborne, J. (2017). Science education for the twenty first century. *Eurasia Journal of Mathematics, Science and Technology Education*, 3(3), 173–184.
<https://doi.org/10.12973/ejmste/75396>
- Parmin, P., & Fibriana, F. (2019). Prospective Teachers' Scientific Literacy through Ethnoscience Learning Integrated with the Indigenous Knowledge of People in the Frontier, Outermost, and Least Developed Regions. *Jurnal Penelitian Dan Pembelajaran IPA*, 5(2), 142.
<https://doi.org/10.30870/jppi.v5i2.6257>
- Parmin, P., Nuangchaleerm, P., & El Islami, R. A. Z. (2019). Exploring the indigenous knowledge of java north coast community (Pantura) using the science integrated learning (SIL) model for science content development. *Journal for the Education of Gifted Young Scientists*, 7(1), 71–83.
<https://doi.org/10.17478/jegys.466460>
- Parmin, Sajidan, Ashadi, & Sutikno. (2015). Skill of prospective teacher in integrating the concept of science with local wisdom model. *Jurnal Pendidikan IPA Indonesia*, 4(2), 120–126.
<https://doi.org/10.15294/jpii.v4i2.4179>
- Parmin, Sajidan, Ashadi, Sutikno, & Fibriana, F. (2017). Science integrated learning model to enhance the scientific work independence of student teacher in indigenous knowledge transformation. *Jurnal Pendidikan IPA Indonesia*, 6(2), 365–372. <https://doi.org/10.15294/jpii.v6i2.11276>
- Parmin, Sajidan, Ashadi, Sutikno, & maretta, Y. (2016). Preparing prospective teachers in integrating science and local wisdom through practicing open inquiry. *Journal of Turkish Science Education*, 13(2), 3–14.
<https://doi.org/10.12973/tused.10163a>
- Pascual, U., Balvanera, P., Díaz, S., Pataki, G., Roth, E., Stenseke, M., Watson, R. T., Başak Dessane, E., Islar, M., Kelemen, E., Maris, V., Quaas, M., Subramanian, S. M., Wittmer, H., Adlan, A., Ahn, S. E., Al-Hafedh, Y. S., Amankwah, E., Asah, S. T., ... Yagi, N. (2017). Valuing nature's contributions to people: the IPBES approach. *Current Opinion in Environmental Sustainability*, 26–27, 7–16.
<https://doi.org/10.1016/j.cosust.2016.12.006>
- Patriadi, H. B., Bakar, M. Z. A., & Hamat, Z. (2015). Human Security in Local Wisdom Perspective: Pesantren and its Responsibility to Protect People. *Procedia Environmental Sciences*, 28(SustaiN 2014), 100–105.
<https://doi.org/10.1016/j.proenv.2015.07.015>
- Peters, M. A., & Jandrić, P. (2017). Dewey's Democracy and Education in the age *commit to user*

- of digital reason: the global, ecological and digital turns. *Open Review of Educational Research*, 4(1), 205–218. <https://doi.org/10.1080/23265507.2017.1395290>
- Peters, V. U. (2017). Inquiry Based Science Education,: Scaffolding Pupil Self Directed Learning in Open Inquiry. *International Journal of Science Educational*.
- Piirto, J. (2011). Creativity for 21st. In *Sense Publishers*.
- Pinel, J. (2000). *Biopsychology (Fourth Edition)*. Pearson Education Company.
- Prasetyo, Z. K. (2013). Pembelajaran Sains Berbasis Kearifan Lokal. *PROSIDING : Seminar Nasional Fisika Dan Pendidikan Fisika*, 2(1), 246–256. <http://jurnal.fkip.uns.ac.id/index.php/prosfis1/article/view/3316>
- Purwanti. (2013). Integrative Science untuk Mewujudkan 21. *Seminar Nasional MIPA 2013*.
- Putra, R. D., Rinanto, Y., Dwiaستuti, S., & Irfi, I. (2016). The Increasing of Students Creative Thinking Ability Through of Inquiry Learning on Students at Grade XI MIA 1 of SMA Negeri Colomadu Karanganyar in Academic Year 2015/2016. *Proceeding Biology Education Conference*, 13(1), 330–334.
- Putri B.S, & Sarwi, A. I. (2018). Pembelajaran Inkuiiri Terbimbing Melalui Kegiatan Lab Virtual dan Eksperimen Riil untuk Peningkatan Penggunaan Konsep dan Pengembangan Aktivitas Siswa. *UPEJ Unnes Physics Education Journal*, 7(1), 14–22. <https://doi.org/10.15294/upej.v7i1.22477>
- Rahayu, S. (2019). Socioscientific Issues : Benefits in Improving Understanding the Concept of Socioscientific Issues: Its Benefits in Improving Understanding the Concept of Science, Nature of Science (NOS) and Higher Order Thinking Skills (HOTS). *Seminar Nasional Pendidikan IPA UNESA, November*, 1–14. <https://doi.org/10.13140/RG.2.2.16332.16004>
- Reeves. (2013). *Design Based Research in Educational Technology: Progress Made, Challenges Remain*. Educational Technology Publication Inc.
- Rostikawati, D. A., & Permanasari, A. (2016). Rekonstruksi bahan ajar dengan konteks socio-scientific issues pada materi zat aditif makanan untuk meningkatkan literasi sains siswa. *Jurnal Inovasi Pendidikan IPA*, 2(2), 156. <https://doi.org/10.21831/jipi.v2i2.8814>
- Rundgren, S. N. C., & Rundgren, C. J. (2010). SEE-SEP: From a separate to a holistic view of socioscientific issues. *Asia-Pacific Forum on Science Learning and Teaching*, 11(1), 1–24.
- Rusilowati, A., Kurniawati, L., Nugroho, S. E., & Widiyatmoko, A. (2016). Developing an instrument of scientific literacy assessment on the cycle theme. *International Journal of Environmental and Science Education*, 11(12), 5718–5727.
- Ryan, J. M. (1978). Ethnoscience and Problems of Method in the Social Scientific Study of Religion. *Sociological Analysis*, 39(3), 241. <https://doi.org/10.2307/3710444>
- Sadler, T. D. (2004). Informal reasoning regarding socioscientific issues: A critical review of research. *Journal of Research in Science Teaching*, 41(5), 513–536. <https://doi.org/10.1002/tea.20009>

- Sadler, T. D., & Zeidler, D. L. (2004). The Morality of Socioscientific Issues: Construal and Resolution of Genetic Engineering Dilemmas. *Science Education*, 88(1), 4–27. <https://doi.org/10.1002/sce.10101>
- Sadler, T. D., & Zeidler, D. L. (2005). The significance of content knowledge for informal reasoning regarding socioscientific issues: Applying genetics knowledge to genetic engineering issues. *Science Education*, 89(1), 71–93. <https://doi.org/10.1002/sce.20023>
- Sajidan, & Afandi. (2018). Empowerment of High Level Thinking Skills in terms of epigenetic aspects and their implications in education. *Seminar Nasional IPA IX 1 Universitas Negeri Semarang, October*, 1–10. <https://doi.org/10.13140/RG.2.2.14608.05129>
- Sak, U., & Maker, C. J. (2005). Divergence and convergence of mental forces of children in open and closed mathematical problems. *International Education Journal*, 6(2), 252–260.
- Salkind, N. (2015). Torrance Tests of Creative Thinking. In *Encyclopedia of Measurement and Statistics*. <https://doi.org/10.4135/9781412952644.n460>
- Santrock, W. J. (2011). *Educational Psychology (Fifth Edition)*. McGraw-Hill Company.
- Sarwi, Alim, Fathonah, S., & Subali, B. (2020). The analysis of ethnoscience-based science literacy and character development using guided inquiry model. *Journal of Physics: Conference Series*, 1567(2). <https://doi.org/10.1088/1742-6596/1567/2/022045>
- Sarwi, & Isnaeni, Y. (2020). Concept Mastery of Ethnoscience-Based Integrated Science and Elementary Students' Life Skills Using Guided Inquiry. *Advances in Social Science, Education and Humanities Research*, 443(Iset 2019), 517–522. <https://doi.org/10.2991/assehr.k.200620.103>
- Sarwi, S., Hidayah, N., & Yulianto, A. (2019). Guided inquiry learning model to improve the conceptual understanding and scientific work skills of high school students in Central Java. *Journal of Physics: Conference Series*, 1170(1). <https://doi.org/10.1088/1742-6596/1170/1/012083>
- Schröder, T. (2019). A regional approach for the development of TVET systems in the light of the 4th industrial revolution: the regional association of vocational and technical education in Asia. *International Journal of Training Research*, 17(sup1), 83–95. <https://doi.org/10.1080/14480220.2019.1629728>
- Şener, N., Türk, C., & Taş, E. (2015). Improving Science Attitude and Creative Thinking through Science Education Project: A Design, Implementation and Assessment. *Journal of Education and Training Studies*, 3(4), 57–67. <https://doi.org/10.11114/jets.v3i4.771>
- Setyaningsih, A., Rahayu, S., Fajaroh, F., Parmin, P., & Malang, K. (2019). *The effect of Process Oriented-Guided Inquiry Learning with the context of socioscientific issues on the argumentation skills of high school students The effect of process oriented-guided inquiry learning with socioscientific issue contexts on high school*. 5(2), 168–179.
- Shamsudin, N. M., Abdullah, N., & Yaamat, N. (2013). Strategies of Teaching Science Using an Inquiry based Science Education (IBSE) by Novice Chemistry Teachers. *Procedia - Social and Behavioral Sciences*, 90(InCULT commit to user)

- 2012), 583–592. <https://doi.org/10.1016/j.sbspro.2013.07.129>
- Sheldrake, R., Mujtaba, T., & Reiss, M. J. (2017). Science teaching and students' attitudes and aspirations: The importance of conveying the applications and relevance of science. *International Journal of Educational Research*, 85(August), 167–183. <https://doi.org/10.1016/j.ijer.2017.08.002>
- Sheu, H.-B., & Lent, R. W. (2018). *A social cognitive perspective on career intervention*. APA handbooks in psychology.
- Sheu, H. Bin, Lent, R. W., Miller, M. J., Penn, L. T., Cusick, M. E., & Truong, N. N. (2018). Sources of self-efficacy and outcome expectations in science, technology, engineering, and mathematics domains: A meta-analysis. *Journal of Vocational Behavior*, 109, 118–136. <https://doi.org/10.1016/j.jvb.2018.10.003>
- Silaban, S. S., & Utari, S. (2015). Didactic Analysis Based on the Profile of Students' Mastery of the Concept on Temperature and Heat Material. *Prosiding Simposium Nasional Inovasi Dan Pembelajaran Sains 2015 (SNIPS 2015)*, 2015(Snips), 521–524.
- Simonton, D. K. (2012). Taking the U.S. Patent Office Criteria Seriously: A Quantitative Three-Criterion Creativity Definition and Its Implications. *Creativity Research Journal*, 24(2–3), 97–106. <https://doi.org/10.1080/10400419.2012.676974>
- Slavin. (2017). *Educational Psychology: Theory and Practice (Terjemahan Marianto Samosir)*. PT Indeks.
- Smith E dan Stephen, M. (2017). *Psikologi Kognitif: Pikiran dan Otak (terjemahan)*. Pustaka Pelajar.
- Stenseth, T., Bråten, I., & Strømsø, H. I. (2016). Investigating interest and knowledge as predictors of students' attitudes towards socio-scientific issues. *Learning and Individual Differences*, 47, 274–280. <https://doi.org/10.1016/j.lindif.2016.02.005>
- Stoltz, M., Witteck, T., Marks, R., & Eilks, I. (2013). Reflecting socio-scientific issues for science education Coming from the case of curriculum development on doping in chemistry education. *Eurasia Journal of Mathematics, Science and Technological Education*, 9, 273-282.
- Suciati, S. (2017). *The absorption of Lesson Study-Based Thesis Guidance on the Acceleration of Student Study Completion in Applying the Problem Based Learning (PBL) Model*. 10, 58–64.
- Suciati, Vincentrisia, A., & Ismiyatih. (2015). Application of learning cycle model (5E) learning with chart variation towardstudents' creativity. *Jurnal Pendidikan IPA Indonesia*, 4(1), 56–66. <https://doi.org/10.15294/jpii.v4i1.3502>
- Sudarmin. (2014). Pendidikan Karakter Etnosains Dan Kearifan Lokal. *Fakultas Matematika Dan Ilmu Pengetahuan Alam, UNNES*, 1–139.
- Sudarmin, S., Mastur, Z., & Parmin, P. (2014). Reconstructing Scientific Science Knowledge. *Jurnal Penelitian Pendidikan*, 31, 55–62.
- Sudarmin, S., Selia, E., & Taufiq, M. (2018). The influence of inquiry learning model on additives theme with ethnoscience content to cultural awareness of students. *Journal of Physics: Conference Series*, 983(1).

- <https://doi.org/10.1088/1742-6596/983/1/012170>
- Sudarmin, S., Sumarni, W., Azizah, S. N., Yusof, M. H. H., & Listiaji, P. (2020). Scientific reconstruction of indigenous knowledge of batik natural dyes using ethno-STEM approach. *Journal of Physics: Conference Series*, 1567(4), 2–8. <https://doi.org/10.1088/1742-6596/1567/4/042046>
- Sugiarti, E. (2015). Marginalisasi Wanita Madura: Implikasi Program Keluarga Berencana Di Desa Banyuwulu (Sebuah Paradigma Etnosains). *Mozaik Jurnal Ilmu Humaniora*, 2(2), 89.
- Sugiyanto, F. N., Masykuri, M., & Muzzazinah, M. (2018). Analysis of senior high school students' creative thinking skills profile in Klaten regency. *Journal of Physics: Conference Series*, 1006(1), 0–5. <https://doi.org/10.1088/1742-6596/1006/1/012038>
- Sugiyono. (2013). *Metode Penelitian Kualitatif dan R & D*. Alfabeta.
- Sukawi, Z., Khoiri, A., Haryanto, S., & Sunarsi, D. (2021). Psychoanalytic conceptual framework : a critical review of creativity in modeling inquiry training. *Jurnal Konseling Dan Pendidikan*, 9(1), 28–35.
- Sumarni, W., Sudarmin, Wiyanto, & Supartono. (2016). The reconstruction of society indigenous science into scientific knowledge in the production process of palm sugar. *Journal of Turkish Science Education*, 13(4), 281–292. <https://doi.org/10.12973/tused.10185a>
- Sumarta, I. G. B. (2017). The Effect of Mind Map-aided Problem Learning on Creative Thinking Skills and Biology Learning Outcomes in Junior High School Students. *Jurnal Ilmiah Pendidikan Dan Pembelajaran PPs*, 1(1), 68–77. <https://ejournal.undiksha.ac.id/index.php/JIPP/article/view/11974/7645>
- Supriyadi, S., Haeruddin, H., & Nurjannah, N. (2016). Peningkatan kemampuan memecahkan masalah antara model penalaran kausal berbasis etnosains dan sains modern. *Jurnal Riset Dan Kajian Pendidikan Fisika*, 3(2), 35. <https://doi.org/10.12928/jrkpf.v3i2.5142>
- Susilowati, S., Sajidan, S., & Ramli, M. (2018). The effectiveness of inquiry-based learning tools for improving students' critical thinking skills. *Jurnal Penelitian Dan Evaluasi Pendidikan*, 22(1), 49. <https://doi.org/10.21831/pep.v22i1.17836>
- Teig, N., Scherer, R., & Nilsen, T. (2018). More isn't always better: The curvilinear relationship between inquiry-based teaching and student achievement in science. *Learning and Instruction*, 56(February), 20–29. <https://doi.org/10.1016/j.learninstruc.2018.02.006>
- Tendrita, M., Mahanal, S., & Zubaidah, S. (2016). Empowerment of Creative Thinking Skills through Think Pair Share Remap Model. *Proceeding Biology Education Conference (ISSN: 2528-5742)*, 13(1), 285–291.
- Thorburn, M. (2018). John Dewey, subject purposes and schools of tomorrow: A centennial reappraisal of the educational contribution of physical education. *Learning, Culture and Social Interaction*, 19(April), 22–28. <https://doi.org/10.1016/j.lcsi.2018.04.001>
- Tohani, E. (2007). *an Environment Awareness Educational Model*. 24, 12–23.
- Torkar, G. (2014). Learning experiences that produce environmentally active and commit to user

- informed minds. *NJAS - Wageningen Journal of Life Sciences*, 69, 49–55. <https://doi.org/10.1016/j.njas.2014.03.002>
- Torrance, E. P. (1974). Norm-Technical Manual Torrance Test of Creative Thinking, Verbal test, form A and B. Figural test, form A and B., *Personal Press Inc, Lexing-Ton, Massachusetts*.
- Treffinger, D. J. (1985). Review of the Torrance Tests of Creative Thinking. In *The ninth mental measurements yearbook* (pp. 1632–1634).
- Tsai, C. Y. (2018). The effect of online argumentation of socio-scientific issues on students' scientific competencies and sustainability attitudes. *Computers and Education*, 116, 14–27. <https://doi.org/10.1016/j.compedu.2017.08.009>
- Türkmen, H. (2015). Creative Thinking Skills Analyzes of Vocational High School Students. *Journal of Educational and Instructional Studies*, 5(February), 74–84.
- Uiterwijk-Luijk, L., Krüger, M., Zijlstra, B., & Volman, M. (2019). Teachers' role in stimulating students' inquiry habit of mind in primary schools. *Teaching and Teacher Education*, 86, 102894. <https://doi.org/10.1016/j.tate.2019.102894>
- Uloli, R., Probowo, & Prastowo, T. (2016). Kajian Konseptual Proses Berpikir Kreatif. *Seminar Nasional Pendidikan & Saintek (ISSN: 2557-533X)*, 644–647.
- Usman, N., Rahmatan, H., & Haji, A. G. (2019). Ethno-Science Based Module Development on Material Substance and its Characteristics to Improve Learning Achievement of Junior High School Students. *International Journal of Innovation in Science and Mathematics*, 7(3), 148–157.
- Utami. (2016). Cordierite Ceramics Synthesized Based on Husk Silica As Electrical Isolator Material. *Jurnal Ilmiah Pendidikan Fisika Al-Biruni*, 5(2), 161–172. <https://doi.org/10.24042/jipf>
- van Uum, M. S. J., Verhoeff, R. P., & Peeters, M. (2017). Inquiry-based science education: scaffolding pupils' self-directed learning in open inquiry. *International Journal of Science Education*, 39(18), 2461–2481. <https://doi.org/10.1080/09500693.2017.1388940>
- Vemmi, R. R., Dewi, K., Muslimat, A., & Yuangga, K. D. (2021). E-Learning as Education Media Innovation inthe Industrial Revolution and Education 4 . 0 Era . *Journal of Contemporary Issues in Business and Government*, 27(1), 2868–2881.
- Vitasurya, V. R. (2016). Local Wisdom for Sustainable Development of Rural Tourism, Case on Kalibiru and Lopati Village, Province of Daerah Istimewa Yogyakarta. *Procedia - Social and Behavioral Sciences*, 216(October 2015), 97–108. <https://doi.org/10.1016/j.sbspro.2015.12.014>
- Wallach, A., Marom, S., & Ahissar, E. (2016). Closing Dewey's Circuit. In *Closed Loop Neuroscience*. Elsevier Inc. <https://doi.org/10.1016/B978-0-12-802452-2.00007-X>
- Wardani, A. N., & Ibrahim, M. (2020). Karakteristik Soal Higher Order Thinking Skills (HOTS) Materi Dampak Penyalahgunaan Psikotropika Untuk SMA. *BioEdu: Berkala Ilmiah Pendidikan Biologi*, 9(1), 60–64.
- Wei-Ta Fang, H.-W. H. & C.-S. L. (2016). Atayal's identification of sustainability: traditional ecological knowledge and indigenous science of a hunting culture. *Sustainability Science Volume*, 11(4), 33–43.

- Wenning, C. J. (2011a). Level of Inquiry: Using Inquiry Spectrum Learning Sequences on Teach Science. *Journal of Physics Teacher Eucation Online*, 6(2), 11–20.
- Wenning, C. J. (2011b). The Levels of Inquiry Model of Science Teaching Wenning (2010) for explications of real-world applications component of the Inquiry Spectrum.) A Levels of Inquiry Redux. *J. Phys. Tchr. Educ. Online*, 6(2), 9–16.
- Wenning, C. J., & Khan, M. A. (2011). Levels of Inquiry Model of Science Teaching : Learning sequences to lesson plans. *Journal of Physics Teacher Education Online*, 6(2), 17–20.
- Widodo, J. (2012). Urban Environment and Human Behaviour: Learning from History and Local Wisdom. *Procedia - Social and Behavioral Sciences*, 42(July 2010), 6–11. <https://doi.org/10.1016/j.sbspro.2012.04.161>
- Wu, H., Jiang, F., Yue, H., Zhang, H., Wang, K., & Zhang, Y. (2016). Applying a RapidPlan model trained on a technique and orientation to another: A feasibility and dosimetric evaluation. *Radiation Oncology*, 11(1), 1–7. <https://doi.org/10.1186/s13014-016-0684-9>
- Yang, K. K., Lin, S. F., Hong, Z. R., & Lin, H. S. (2016). Exploring the Assessment of and Relationship Between Elementary Students' Scientific Creativity and Science Inquiry. *Creativity Research Journal*, 28(1), 16–23. <https://doi.org/10.1080/10400419.2016.1125270>
- Yen, M. H., & Wu, Y. T. (2017). The role of university students' informal reasoning ability and disposition in their engagement and outcomes of online reading regarding a controversial issue: An eye tracking study. *Computers in Human Behavior*, 75, 14–24. <https://doi.org/10.1016/j.chb.2017.04.054>
- Yuanita, Y., & Yuniarita, F. (2018). Pengembangan Petunjuk Praktikum Ipa Berbasis Keterampilan Proses Untuk Meningkatkan Keterampilan Berpikir Kritis Siswa Sekolah Dasar. *Profesi Pendidikan Dasar*, 1(2), 139. <https://doi.org/10.23917/ppd.v1i2.6608>
- Yuenyong, J., & Yuenyong, C. (2012). Connecting Between Culture of Learning in Thai Contexts and Developing Students' Science Learning in the Formal Setting. *Procedia - Social and Behavioral Sciences*, 46, 5371–5378. <https://doi.org/10.1016/j.sbspro.2012.06.441>
- Zeidler, D. L., Herman, B. C., & Sadler, T. D. (2019). New directions in socioscientific issues research. *Disciplinary and Interdisciplinary Science Education Research*, 1(1), 1–9. <https://doi.org/10.1186/s43031-019-0008-7>
- Zeidler, D. L., Sadler, T. D., Applebaum, S., & Callahan, B. E. (2009). Advancing reflective judgment through socioscientific issues. *Journal of Research in Science Teaching*, 46(1), 74–101. <https://doi.org/10.1002/tea.20281>
- Zhu, W., Shang, S., Jiang, W., Pei, M., & Su, Y. (2019). Convergent Thinking Moderates the Relationship between Divergent Thinking and Scientific Creativity. *Creativity Research Journal*, 31(3), 320–328. <https://doi.org/10.1080/10400419.2019.1641685>
- Zimmerman, B. J. (1982). Piaget's theory and instruction: How compatible are they? *Contemporary Educational Psychology*, 7(3), 204–216. [https://doi.org/10.1016/0361-476X\(82\)90028-5](https://doi.org/10.1016/0361-476X(82)90028-5)