

DAFTAR PUSTAKA

- Adler, R., & Rodman, G. (2006). *Understanding Human Communication*. New York: Oxford University Press.
- Alpusari, M., Mulyani, E. A., Putra, Z. H., Widyanthi, A., & Hermita, N. (2019). Identifying students' scientific communication skills on vertebrata organs. In *Journal of Physics: Conference Series* (Vol. 1351, No. 1, p. 012070). IOP Publishing.
- Anagun, Sengul. & M.Ozden. 2010. Teacher Candidate Prespection Regarding Socioscientific Issue and Their Competeins in Using Socioscientific Issue in Science and Technology Instruction. *Journal of Procedia Sosial and behaviorial science*, 9(2): 981-983. doi:10.1016/j.sbspro.2010.12.271.
- Anwar, Y., & Susanti, R.2019. Analyzing scientific argumentation skills of biology education students in general biology courses. In *Journal of Physics: Conference Series* (Vol. 1166, No. 1, p. 012001). IOP Publishing.
- Asriani, A., M, H., & Erniwati, E. (2021). Application of the Argument-Driven Inquiry (ADI) learning model to improve class viii students' science learning outcomes and argumentation skills at SMP Negeri 14 Kendari on Simple Business and Aircraft Material. *Journal of Physics Education Research*, 6 (1), 77-86. doi: <http://dx.doi.org/10.36709/jipfi.v6i1.14236>.
- Astarina, A. D., Rahayu, S., & Yahmin, Y. (2019). Pengaruh pembelajaran POGIL berkonteks socioscientific issues terhadap kualitas kemampuan berargumentasi peserta didik SMA pada materi ikatan kimia. *Jurnal Inovasi Pendidikan IPA*, 5(1), 31–44. <https://doi.org/10.21831/jipi.v5i1.20890>.
- Astuti, S. P. (2015). Pengaruh Kemampuan Awal dan Minat Belajar terhadap Prestasi Belajar Fisika. *Formatif: Jurnal Ilmiah Pendidikan MIPA*, 5(1), 68–75. <https://doi.org/10.30998/formatif.v5i1.167>.
- Baker, D. R., Lewis, E. B., Purzer, S., & Lang, M. (2009). The Communication in Science Inquiry Project (CISIP): A Project to Enhance Scientific Literacy Through the Creation of Science Classroom Discourse Communities. *International Journal of Environmental & Science Education*, 4(3), 259-274.

- Besnard, P., & Hunter, A. (2014). Nature of Argumentation. In Elements of Argumentation (Nomor October 2007). The MIT Press Cambridge. <https://doi.org/10.1007/978-3-540-75256-1>.
- Bricker, Leah A., and Philip Bell. 2008. Conceptualizations of Argumentation from Science Studies and the Learning Sciences and Their Implications for the Practices of Science Education. *Science Education*, 92(3): 473–98.
- Campbell, Neil A& Urry Lisa A. et al., 2020. Biology. 12th Edition. Pearson Education, Inc: United States of America.
- Chin, C & Osborne, J. (2010). Students' Questions and Discursive Interaction: Their Impact on Argumentation During Collaborative Group Discussions in Science. *Journal Of Research In Science Teaching*, 47(7), 883–908.
- Cho, K. L., & Jonassen, D. . (2006). The Effects of Argumentation Scaffolds on Argumentation and Problem Solving. *Tijdschrift Voor Geneeskunde*, 62(8), 646–649. <https://doi.org/10.2143/tvg.62.8.5002453>
- Cohen, Jacob. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Lawrence Erlbaum Associates: US America. ISBN 0-8058-0283-5
- Devi, N. D. C., VH, E. S., & Indriyanti, N. Y. 2019. Analysis of high school students' argumentation ability in the topic of buffer solution. *JKPK (Jurnal Kimia Dan Pendidikan Kimia)*, 3(3), 141-151.
- Driver, R_ Newton, P.& Osborne, (2000). Esfablishing the norms of scientific argumentation in class rooms. *Science Education*, 84(3), 287-313.
- Erduran, S. (2018). Toulmin's argument pattern as a "horizon of possibilities" in the study of argumentation in science education. *Cultural Studies of Science Education*, 13(4), 1091–1099. <https://doi.org/10.1007/s11422-017-9847-8>.
- Erduran, S., Simon, S., & Osborne, J. (2004). TAPping into argumentation: Developments in the application of Toulmin's Argument Pattern for studying science discourse. *Science Education*, 88(6), 915–933. <https://doi.org/10.1002/sce.20012>.

- Fadlika, R., Hernawati, D., & Meylani, V. (2022). Kemampuan Argumentasi Dan Kemampuan Literasi Sains Peserta Didik Kelas Xi Mipa Pada Materi Sel. *LENSA (Lentera Sains): Jurnal Pendidikan IPA*, 12(1), 9–18. <https://doi.org/10.24929/lensa.v12i1.156>
- Fakhriyah, F., Rusilowati, A., Nugroho, S.E., & Saptono, S. (2021). Mengembangkan Kemampuan Argumentasi Ilmiah Calon Guru Sekolah Dasar sebagai Bentuk Penguatan Kemampuan Abad 21. *Prosiding Seminar Nasional Pascasarjana*: 190-194.
- Farida, Ic., & Gusniarti, W. F. (2014). Profil Kemampuan Argumentasi Peserta didik Pada Konsep Koloid Yang Dikembangkan Melalui Pembelajaran Inkuiri Argumentatif. *Jurnal Edusains*, 6(1), 32–40.
- Fauziah, S., Hernawati, D., Rizal, R., & Badriah, L. (2025). Profile of Learners Argumentation Ability on Socio-Scientific Issues. *Jurnal Pijar Mipa*, 20(1), 24–28. <https://doi.org/10.29303/jpm.v20i1.8214>
- Fuadah, MI, dkk. (2023). Pengaruh Model Argument Driven Inquiry (ADI) terhadap Kemampuan Argumentasi Ilmiah Peserta didik SMA pada Materi Gelombang Cahaya. *Jurnal Internasional Penelitian dan Pemberdayaan Masyarakat*, 1(2), 53-61. DOI: <https://doi.org/10.58706/ijorce.v1n2.p53-61>.
- George, F and George J. Hademos. 2005. *Biology* edisi 2. Jakarta: Erlangga
- Giri, V., & Paily, M. U. (2020). Effect of Scientific Argumentation on the Development of Critical Thinking. *Science and Education*, 29(3), 673–690. <https://doi.org/10.1007/s11191-020-00120-y>.
- Glencoe. (2010). *Discovering life skills*. USA: Glencoe McGraw-Hill.
- Guyton, A. C., & Hall, J. E. (2020). *Textbook of Medical Physiology* (14th ed.). Elsevier. ISBN: 978-0-323-67280-1.

- Hall, J. E. (2016). Guyton and Hall Physiology Review (Third Edition) [E-book Version]. Elsevier.
<https://www.minams.edu.pk/cPanel/ebooks/miscellaneous/Guyton%20&%20Hall%20Physiology%20Review%20-%20John%20E.%20Hall.pdf>.
 (ISBN 978-1-4557-7007-6).
- Hamia, H. (2021). Kemampuan komunikasi peserta didik: studi kasus pada pembelajaran biologi di SMA Negeri 1 Sidrap (Doctoral dissertation, Universitas Negeri Makassar).
- Handayani, P., & Sardianto, MS (2015). Analisis Argumentasi Peserta Didik Kelas X SMA Muhammadiyah 1 Palembang Dengan Menggunakan Model Argumentasi Toulmin. *Jurnal Inovasi Dan Pembelajaran Fisika*, 2(1), 60-68.
- Hardini, S. D., & Heffi A. 2022. Analisis Kemampuan Argumentasi Peserta Didik. *Biodidaktika: Jurnal Biologi dan Pembelajarannya*, 17(1), 2527-4562.
- Harisanti, B.M. (2019). Implementasi Model Integrasi Kearifan Lokal Dalam Pembelajaran Untuk Mendeskripsikan Kemampuan Komunikasi Ilmiah Peserta didik. *Bioscientist: Jurnal Ilmiah Biologi*, 7(2), 182-191.
- Hasnunidah, Neni dan Wiono, Wisnu Juli. 2019. Argument-Driven Inquiry, Gender, and Its Effects on Argumentation Skills. *Tadris: Jurnal Keguruan dan Ilmu Tarbiyah* 4 (2): 179-188. <https://DOI:10.24042/tadris.v4i2.4676>.
- Herawati, D., Nadiroh, N., & Mahendra, P. R. A. 2019. Efektivitas ProblemBased Learning Terhadap Kemampuan Argumentasi Mahapeserta didik Tentang Isu Sosiosaintifik Lingkungan. *EDUSAINS*, 11(2), 286-296.
- Herman, B. C., Newton, M. H., & Zeidler, D. L. (2021). *Impact of place-based socioscientific issues instruction on students' contextualization of socioscientific orientations. Science Education*. doi:10.1002/sce.21618.
- Hitchcock, D. (2005). Good reasoning on the Toulmin model. *Argumentation*, 19(3), 373–391. <https://doi.org/10.1007/s10503-005-4422-y>.

- Hofmann, A. H. (2010). Scientific writing and communication: Papers, tesiss, and presentations. UK: Oxford University Press.
- 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.
- Kamilahrohrawati, K., & Kuntjoro, S. 2018. Validitas dan Keefektifan Lembar Kegiatan Peserta Didik Berbasis Toulmin's Argument Pattern untuk Melatihkan Kemampuan Argumentasi. *Berkala Ilmiah Pendidikan Biologi (BioEdu)*, 7(3), 450-458.
- Karlina, G., & Alberida, H. 2021. Kemampuan Argumentasi Pada Pembelajaran Biologi. *Jurnal Ilmiah Pendidikan Dan Pembelajaran*, 5(1), 1-7.
- Linda, Yurida, O., Dewi, N., (2024). Dasar – dasar Asuhan Keperawatan Sistem Pernapasan. Banjarmasin: CV UrbanGreen Central Media.
- Magalhães, Ana Lúcia. (2020). Teaching how to develop an argument using the Toulmin model. *International Journal of Multidisciplinary and Current. International Journal of Multidisciplinary and Current Educational Research*. <http://ijmcer.com>.
- Newton, M. H., & Zeidler, D. L. (2020). Developing socioscientific perspective taking. *International Journal of Science Education*, 1–18. doi:10.1080/09500693.2020.1756515.
- Noroozi, O., Dehghanzadeh, H., & Talaee, E. (2020). A systematic review on the impacts of game-based learning on argumentation skills. *Entertainment Computing*, 35(March), 100369. <https://doi.org/10.1016/j.entcom.2020.100369>.
- Octaviani,F.A.A., & Wulandari,R.(2024). The Effect of Guided Inquiry Learning Modelon Student's Scientific Communication Skills in SMPN 1 Gempol. *Academia Open*,9(2),10-21070

- OpenStax College. (2013) *Anatomy & Physiology*. Texas: Rice University.
<http://cnx.org/content/col11496/latest/>.
- Osborne, J., Erduran, S., & Simon, S. (2004). Enhancing the Quality of Argumentation in School Science. *Journal of Research in Science Teaching*, 41(10), 994–1020.
- Ping, I. L. L., Halim, L., & Osman, K. (2020). Explicit teaching of scientific argumentation as an approach in developing argumentation skills, science process skills and biology understanding. *Journal of Baltic Science Education*, 19(2), 276–288. <https://doi.org/10.33225/jbse/20.19.276>.
- Pramesti, O. B., Supeno, Astutik, S. (2020). Pengaruh Model Pembelajaran Inkuiri Terbimbing Terhadap Kemampuan Komunikasi Ilmiah Dan Hasil Belajar Fisika Peserta didik SMA. IFP: Jurnal Ilmu Fisika dan Pembelajarannya , 4(1), 21 – 30. <https://doi.org/10.19109/jifp.v4i1.5612>.
- Presley, M.L., Sickel, A. J., Muslu, N., Johnson, D.M., Witzig, S.B., Izci, K., and Sadler, T.D. 2013. A Framework for Socio-scientific Issues Based Education. *Science education journal*, 22(1), 27-32. <https://eric.ed.gov/?id=ej1062183>.
- Rahayu. Y, Suhendar, Ratnasari. J. 2020. Kemampuan Argumentasi Peserta didik Pada Materi Sistem Gerak SMA Negeri Kabupaten Sukabumi Indonesia. BIODIK: Jurnal Ilmiah Pendidikan Biologi 6(3), 312 – 318. <https://doi.org/10.22437/bio.v6i3.9802>
- Ratcliffe, M. (2009) The place of socio-scientific issues in citizenship education, in Ross, A. (ed) *Human Rights and Citizenship Education*. London: CiCe, pp 12 – 16.
- Ratcliffe, M., and Grace M. (2003) *Science education for citizenship*. Maidenhead: Open University Press.
- Sadler, T. D. (2004). *Informal Reasoning Regarding Socio-Scientific Issues: A Critical Review of Research*. *Journal of Research in Science Teaching*, 41(5), 513–536.

- Sampson, V, and L Gleim. 2009. *Argument-driven inquiry to promote the understanding of important concepts and practices in biology*. *American Biology Teacher* 71 (8): 471-477. <https://doi.org/10.1662/005.071.0805>.
- Sherwood, L. (2016). *Human Physiology: From Cells to Systems* (9th ed.). Boston, MA: Cengage Learning. ISBN: 978-1-285-86693-2.
- Sampson, V., & Clark, D. B. (2008). *Argument Driven Inquiry: Using Argumentation as a Scaffold for Inquiry in Science Classrooms*. *International Journal of Science Education*, 30(6), 837–861.
- Sampson, V., & Clark, D. B. (2011). *A Comparison of the Collaborative Scientific Argumentation Practices of Two High and Two Low Performing Groups*. *Research in Science Education*, 41(1), 63–97. doi:10.1007/s11165-009-9146-9.
- Sani, R. A. 2015. *Pembelajaran Saintifik untuk Implementasi Kurikulum 2013*. Jakarta: Bumi Aksara.
- Santrock, J. W. (2011). *Educational Psychology*. New York: McGraw-Hill Inc.
- Setyaningsih,A., Rahayu, S., Fajaroh, F., & Parmin, P. (2019). Pengaruh pembelajaran process oriented-guided inquiry learning berkonteks isu-isu sosiosaintifik dalam pembelajaran asam basa terhadap kemampuan berargumentasi peserta didik SMA kelas XI. *Jurnal Inovasi Pendidikan IPA*, 5(2), 168–179. <https://doi.org/10.21831/jipi.v5i2.20693>
- Setiawati, Ina & Nurlaelah Ilah. (2017). Analisis Profil Kemampuan Berargumentasi Guru Dan Mahapeserta didik Calon Guru Dalam Pembelajaran Biologi Menggunakan Model Toulmin's Argumen Pattern (TAP) Dan Upaya Perbaikannya. *Quangga: Jurnal Pendidikan dan Biologi*, Vol. 9 No.1. <https://journal.uniku.ac.id/index.php/quagga/index>
- Siska, S., Triani, W., Yunita, Y., Maryuningsih, Y., & Ubaidillah, M. (2020). Penerapan pembelajaran berbasis socio scientific issues untuk meningkatkan kemampuan argumentasi ilmiah. *Edu Sains: Jurnal Pendidikan Sains dan Matematika*, 8(1), 22-32.

- Spektor-Levy, O., Eylon, B.-S., & Scherz, Z. (2009). *TEACHING SCIENTIFIC COMMUNICATION SKILLS IN SCIENCE STUDIES: DOES IT MAKE A DIFFERENCE?* *International Journal of Science and Mathematics Education*, 7(5), 875–903. doi:10.1007/s10763-009-9150-6.
- Tortora, G. J., & Derrickson, B. (2017). *Principles of Anatomy and Physiology* (15th ed.). Wiley. ISBN: 978-1-119-32064-7.
- Toulmin, S. E. (2003). The uses of argument: Updated edition. In *The Uses of Argument: Updated Edition*. <https://doi.org/10.1017/CBO9780511840005>.
- Walker, K.A., & Zeidler, D.L. (2007). Promoting discourse about socio-scientific issues through scaffolded inquiry. *International Journal of Science Education*, 29, 1387–1410.
- Widhi, M. T. W., Hakim, A. R., Wulansari, N. I., Solahuddin, & Admoko, S. (2021). Analisis Kemampuan Argumentasi Ilmiah Peserta Didik Pada Model Pembelajaran Berbasis Toulmin's Argumentation Pattern (TAP) Dalam Memahami Konsep Fisika Dengan Metode Library Research. *PENDIPA Journal of Science Education*, 5(1), 79-91. <https://doi.org/10.33369/pendipa.5.1.79-91>.
- Widmaier, E. P., Raff, H., & Strang, K. T. (2019). *Vander's Human Physiology: The Mechanisms of Body Function* (15th ed.). McGraw-Hill Education. ISBN: 978-0-07-337830-5.
- Yore, L. D., Bisanz, G. L., & Hand, B. M. (2003). Examining the Literacy Component of Science Literacy: 25 Years of Language Arts and Science Research. *International Journal of Science Education*, 25(6), 689–725.
- Yusuf, F. A., & Adeoye, E. A. (2012). Developing Critical Thinking and Communication Skills in Students Skills in Student: Implications for Practice in Education. *An International Multidisciplinary Journal Ethiopia*, 6(1), 311-324.

Zahro Nur Fatimatus. (2022). Implementasi Model Pembelajaran Pbl (Problem Based Learning) Berbasis Socioscientific Issue Untuk Meningkatkan Kemampuan Observasi Peserta Didik. Undergraduate (S1) thesis, IAIN Ponorogo. <http://etheses.iainponorogo.ac.id/id/eprint/30851>

Zeidler, D.L., Herman, B.C. & Sadler, T.D. New directions in socioscientific issues research. *Discip Interdiscip Sci Educ Res* 1, 11 (2019). <https://doi.org/10.1186/s43031-019-0008-7>.