

DAFTAR PUSTAKA

- Afni, K., Mardiaty, Sitepu, d. R., Wirevenska, I., Saputri, L., & Sinaga, R. S. (2022). *Model Pembelajaran Inovasi*. Sleman: Deepublish.
- Agustin, G. P., Afrizal, & Irwanto. (2024). Analysis of students' critical thinking abilities through the numbered heads together (NHT) cooperative learning model on the topic of buffer solutions. *Journal of Research in Education and Pedagogy*, 1(1), 1–10. <https://doi.org/10.70232/zfd29e68>.
- Ahmad, L.F. 2022. Studi Literatur: Analisis Permasalahan Pembelajaran Kimia SMA Pada Materi Stoikiometri. *Jurnal Kajian Pendidikan IPA*, 2(1), 117.
- Aiken, L. R. (1985). *Three Coefficients for Analyzing the Reliability and Validity of Ratings*. *Education and Psychological Measurement*, 45(1), 131-142.
- Ananda, L. R., Rahmawati, Y., & Khairi, F. (2023). Critical thinking skills of chemistry students by integrating design thinking with STEAM-PjBL. *Journal of Technology and Science Education*, 13(1), 352–367. <https://doi.org/10.3926/jotse.1938>.
- Anjani, R., & Jailani. (2023). Pengaruh Cooperative Learning Tipe NHT terhadap Kemampuan Berpikir Kritis, Kolaborasi dan Komunikasi Matematis Siswa. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 12(2), 2479–2487. <https://doi.org/10.24127/ajpm.v12i2.6966>
- Ardianto, R., Hermawan, Y., & Gumilar, G. (2025). The effect of emotional intelligence and self-regulated learning in developing students critical thinking skills. *COSMOS: Jurnal Ilmu Pendidikan*, 2(2), 343–354.
- Arikunto, S. (2013). *Prosedur Penelitian: Suatu Pendekatan Praktik*. Rineka Cipta.
- Badan Standar, Kurikulum, dan Asesmen Pendidikan. (2025). *Keputusan Kepala Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan Dasar dan Menengah Nomor 046/H/KR/2025 tentang Capaian Pembelajaran pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, dan Jenjang Pendidikan Menengah*. Kementerian Pendidikan Dasar dan Menengah.
- Briliandika, D., Putra, D. A., & Afiani, K. D. A. (2021). Analisis Model Pembelajaran NHT dalam Meningkatkan Kemampuan Berpikir Kritis. *INVENTA: Jurnal Pendidikan Guru Sekolah Dasar*, 5(1). <https://doi.org/10.36456/inventa.5.1.a2617>
- Briliandika, R., Pratama, A., & Dewi, K. (2024). Pengaruh model NHT terhadap keterampilan berpikir kritis siswa. *Jurnal Pendidikan Sains*, 12(1), 67–75.
- Bryman, A., & Cramer, D. (1990). *Quantitative Data Analysis for Social Scientists*. Routledge.

- Budiansyah, B., Laihat, L., & Rantina, M. (2025). Social emotional learning to improve collaboration and questioning skills in elementary schools. *Journal of Integrated Elementary Education*, 5(1). <https://doi.org/10.21580/jieed.v5i1.22970>.
- Budiastuti, D., & Bandur, A. (2018). *Validitas dan Reliabilitas Penelitian*. Jakarta: Mitra Wacana Media.
- Carter, A. S. (2016). *Social and emotional development in educational settings*. New York: Routledge.
- CASEL. (2015). *Effective Social and Emotional Learning Programs*. Chicago: CASEL.
- Chang, R. (2005). *Kimia Dasar: Konsep – konsep Inti Jilid 1*. Terj. Muhamad. Jakarta: Erlangga.
- Chang, R., & Goldsby, K. A. (2016). *Chemistry (12th ed.)*. McGraw-Hill Education.
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education (Eight)*. Routledge.
- Creswell, J. W. (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Boston: Pearson.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.)*. SAGE Publications
- Cronbach, L. J. (1963). *Educational Psychology*. New York: Harcourt, Brace & World, Inc. dalam pembelajaran IPA pada siswa Sekolah Dasar. Taman Cendekia: *Jurnal Pendidikan Ke SD-an*, 6(2), 59–69. <https://doi.org/10.30738/tc.v6i2.13599>.
- Dewi, N. K., & Kristin, F. (2024). Efektivitas model pembelajaran kooperatif tipe Numbered Heads Together dalam meningkatkan keterampilan berpikir kritis siswa. *Jurnal Pendidikan Dasar*, 15(1), 88–97.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405–432.
- Elias, M. J., Zins, J. E., Weissberg, R. P. (1997). *Promoting social and emotional learning: Guidelines for educators*. ASCD.
- Ennis, R. H. (1996). *Critical Thinking Dispositions: Their Nature and Assessability*. Informal Logic, 18(2), 165–182. <https://doi.org/10.22329/il.v18i2.2378>.
- Ennis, R. H. (2011). *Critical thinking: Reflection and perspective Part I*. Inquiry: Critical Thinking Across the Disciplines, 26(1), 4-18.

- Eskiyurt, R., & Özkan, B. (2024). Exploring the impact of collaborative learning on the development of critical thinking and clinical decision-making skills in nursing students: A quantitative descriptive design. *Journal Heliyon*, 10(17), e37198. <https://doi.org/10.1016/j.heliyon.2024.e37198>
- Facione, P. A. (1990). *Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction (The Delphi Report)*. The California Academic Press.
- Facione, P. A. (2015). *Critical Thinking: What It Is and Why It Counts*. Insight Assessment.
- Fitriani, F., Priatmoko, S., Wardani, S., & Nurhayati, S. (2024). Pengembangan Instrumen Tes *Three-Tier Multiple Choice* Berbantuan Google Forms untuk Mengukur Kemampuan Berpikir Kritis Siswa pada Topik Stoikiometri. *Jurnal Inovasi Pendidikan Kimia*, 18(1), 50–57. <https://doi.org/10.15294/jipk.v18i1.46778>.
- Fraenkel, J. L., Wallen, N. E., & Hyun, H. H. (2012). *How to Design and Evaluate Research in Education, Eighth Edition*. New York: McGraw-Hill.
- Ghaleb, B. D. S. (2024). Effect of exam-focused and teacher-centered education systems on students cognitive and psychological competencies. *International Journal of Multidisciplinary Approach Research and Science*, 2(2), 611–631. <https://doi.org/10.59653/ijmars.v2i02.648>.
- Ghozali, I. (2021). *Aplikasi Analisis Multivariate dengan Program IBM SPSS*. Semarang: Badan Penerbit Universitas Diponegoro.
- Gillies, R. M. (2023). Cooperative Learning: Review of Research and Practice. *Educational Psychology Review*, 35, 1–28.
- Greenberg, M. T. (2023). *Universal SEL: A systematic approach*.
- Hartono, W. (2013). *Efektivitas Model Pembelajaran Matematika dengan Metode Numbered Heads Together berbantuan CD Interaktif materi Himpunan Kelas VII*. Tesis, Universitas Terbuka.
- Hidayat, T., Rahman, A., & Saputra, R. (2023). Analisis keaktifan siswa dalam pembelajaran NHT. *Jurnal Pendidikan IPA Indonesia*, 12(1), 98–106.
- Johnson, D. W., & Johnson, R. T. (2009). *An educational psychology success story: Social interdependence theory and cooperative learning*. *Educational Researcher*. <https://doi.org/10.3102/0013189X09339057>.
- Jolliffe, W. (2007). *Cooperative Learning in the Classroom Putting it into Practice*, London: SAGE Publication Inc.
- Kinasih, A., Mariana, E., Yanti, F. A., & Wardany, K. (2023). *The Use of the NHT Type Cooperative Learning Model Can Improve Students' Critical Thinking Ability*. *International Journal of Education and Curriculum Application*, 6(1), 1–10. <https://doi.org/10.31764/ijeca.v6i1.12081>

- Kusumaningrum, R. A., Arlinita, L., Shabrina, N., Puspita Sari, T. E., Liswara, B., & Ernawati, T. (2024). Analisis penerapan model pembelajaran kooperatif dalam meningkatkan kemampuan berpikir kritis siswa pada pembelajaran IPA SMP/MTs. *Jurnal Basicedu*, 8(6). <https://doi.org/10.31004/basicedu.v8i6.8991>.
- Lenaini, I. (2021). Teknik Pengambil Sampel Purposive dan Snowball Sampling. *Historis: Jurnal Kajian, Penelitian, & Pengembangan Pendidikan Sejarah*, 6(1), 33–39. <https://doi.org/10.31764/historis.vXiY.4075>.
- Lestari, D. D., & Muchlis, M. (2021). Pengembangan e-LKPD Berorientasi *Contextual Teaching and Learning* (CTL) Untuk Melatihkan Keterampilan Berpikir Kritis Siswa Pada Materi Termokimia KELAS XI SMA. *Jurnal Pendidikan Kimia Indonesia*, 5(1), 25–33. <https://doi.org/10.23887/jpk.v5i1.30987>.
- Lestari, D., & Fitriani, A. (2022). Emotional intelligence and student participation. *Jurnal Psikologi Pendidikan*, 10(1), 55–67.
- Lestari, S., & Nugraheni, P. (2022). Efektivitas diskusi kelompok dalam model pembelajaran NHT. *Jurnal Pendidikan Sains*, 10(3), 200–208.
- Mahoney, J. L., Durlak, J. A., & Weissberg, R. P. (2021). An Update on Social and Emotional Learning Outcome Research. *Phi Delta Kappan*, 102(4), 18–23.
- Malik, A. (2018). *Pengantar Statistika Pendidikan (Cetakan pertama)*. Deepublish Publisher.
- Manullang, S. S. C., Gea, S. J. B. P., & Nahadi. (2025). Higher-order thinking skills (HOTS)-based assessment in chemistry education: A systematic literature review of its implementation in senior high schools. *Journal of The Indonesian Society of Integrated Chemistry*, 17(1), 38–45. <https://doi.org/10.22437/jisic.v17i1.44953>.
- Nahdiyah, A. N., & Azizah, U. (2018). Penerapan model pembelajaran kooperatif tipe *Numbered Heads Together* (NHT) untuk melatih keterampilan berpikir kritis siswa pada materi asam basa di SMA Negeri 3 Kota Mojokerto. *UNESA Journal of Chemical Education*, 7(3), 344–349.
- Noorarnie, A.M., Supardi, K.I., Sumarni, W., & Karnawan. 2019. Analisis Kesalahan Siswa dalam Mengerjakan Soal Stoikiometri Melalui Langkah Polya. *Jurnal Inovasi Pendidikan Kimia*, 13(2), 2414–2424.
- OECD. (2023). PISA 2022 Results (Volume I): *The State of Learning and Equity in Education*. Paris: OECD.
- Paul, R., & Elder, L. (2019). *The Miniature Guide to Critical Thinking Concepts and Tools* (8th ed.). The Foundation for Critical Thinking.
- Prafitaria, A., Murthihapsari, & Surbakti, P. S. (2023). The effect of numbered head together (NHT) type of cooperative learning model on critical thinking skills of students on electronic configuration materials. *Jurnal Inovasi*

- Pratiwi, R., & Hidayat, T. (2022). Peningkatan keterampilan berpikir kritis siswa melalui pembelajaran berbasis masalah. *Jurnal Pendidikan Sains Indonesia*, 10(1), 85–94.
- Pratiwi, R., Suryani, N., & Widodo, A. (2024). Pengaruh model NHT terhadap keterampilan sosial siswa. *Jurnal Pendidikan Sains Indonesia*, 12(3), 301–310.
- Putri, H., Susiani, D., Wandani, N. S., & Putri, A. F. (2022). Instrumen Penilaian Hasil Pembelajaran Kognitif pada Tes Uraian dan Tes Objektif. *Jurnal Papeda*, 4(2), 139-148.
- Putri, W. I., Sundari, P. D., Mufit, F., & Dewi, W. S. (2023). Analisis Keterampilan Berpikir Kritis Siswa SMA Pada Materi Pemanasan Global. *Jurnal Ilmiah Profesi Pendidikan*, 8(4), 2428–2435.
<https://doi.org/10.29303/jipp.v8i4.1787>.
- Rahayu, S., Widodo, A., & Suryani, N. (2022). Validitas dan reliabilitas instrument keterampilan berpikir kritis berbasis indikator Ennis. *Jurnal Pendidikan IPA Indonesia*, 11(3), 345–354.
- Rahmawati & Anggun, C. D. D.P. (2025). Implementasi Nilai-Nilai Etika dalam Pembelajaran Bahasa Indonesia untuk Membangun Kemampuan Berpikir Kritis Peserta Didik. *Jurnal Riset Rumpun Ilmu Pendidikan*, 4(1), 615-625.
- Rahmawati, N., Saputra, R., & Lestari, D. (2023). Keunggulan model pembelajaran kooperatif tipe NHT terhadap keterlibatan siswa. *Jurnal Pendidikan IPA Indonesia*, 12(2), 220–228.
- Rahmawati, Y., Taylor, E., Taylor, P. C., Ridwan, A., & Mardiah, A. (2022). Students Engagement In Education As Sustainability: *Implementing An Ethical Dilemma-Steam Teaching Model In Chemistry Learning. Sustainability (Switzerland)*, 14(6). <https://doi.org/10.3390/Su14063554>.
- Rasmawan, R. (2022). Stoichiometry E-Book Based on Creative Problem Solving (CPS) to Solve Conceptual Problems. *Jurnal Pendidikan Kimia Indonesia*, 6(1), 70-78.
- Rohmah, D. M., & Nasrudin, H. (2015). Implementasi Model Pembelajaran Kooperatif Tipe Numbered Heads Together (NHT) untuk Melatihkan Keterampilan Berpikir Kritis Siswa pada Materi Stoikiometri di SMAN 3 Lamongan. *UNESA Journal of Chemical Education*, 4(2), 218–223.
<https://doi.org/10.26740/ujced.v4n2.p%25p>
- Sari, I. P. M., & Ermawati, F. U. (2021). Instrumen Tes Diagnostik Konsepsi Lima Tingkat Pada Materi Gerak Lurus: Pengembangan, Uji Validitas Dan Reliabilitas Serta Uji Coba Terbatas. *Pendipa Journal Of Science Education*, 5(2), 152–162. <https://doi.org/10.33369/Pendipa.5.2.152-162>.

- Sari, M., & Nugroho, A. (2024). Tantangan penerapan model pembelajaran kooperatif tipe NHT di kelas. *Jurnal Inovasi Pendidikan*, 14(1), 55–63.
- Sari, M., Hidayat, T., & Prasetyo, B. (2023). Implementasi model pembelajaran kooperatif tipe NHT dalam meningkatkan keaktifan siswa. *Jurnal Inovasi Pendidikan*, 13(2), 101–110.
- Siegel, S. Y. (1975). Nonparametric Statistic. *The American Statistician*, 11(3), 13–19.
- Simare, M. E., Asrial, A., & Harizon, H. (2018). Analisis Keterlaksanaan Model Pembelajaran Kooperatif Tipe Number Heads Together dan Pengaruhnya Terhadap Kemampuan Berpikir Kritis Siswa SMA. *Journal of The Indonesian Society of Integrated Chemistry*, 10(1), 12–20
- Simesso, M.D., et al. (2024). The Contribution of Using Cooperative Learning Methods ON Students' Achievement and Retention in Secondary Schools during Chemistry Lesson. *Education Research International*, 1–12. <https://doi.org/10.1155/2024/1830124>.
- Slavin, Robert E. (2005). *Cooperative Learning: theory, research and practice* (N.Yusron. Terjemahan). London: Allynmand Bacon.
- Sudijono, A. (2011). *Pengantar Evaluasi Pendidikan*. Jakarta: Rajawali Press.
- Sudirman. (2021). Identifikasi Pemahaman Materi Stoikiometri pada Mahasiswa Baru Pendidikan Kimia FKIP Undana. *Jurnal Beta Kimia*. 1(1): 2.
- Sukarelawan, I., Indratno, T. K., & Ayu, S. M. (2024). *N-Gain Vs Stacking: Analisis Perubahan Abilitas Peserta Didik dalam Desain One Group Pretest-Posttest*. Yogyakarta: Suryacahya.
- Susilo, B. E., Winarti, E. R., & Soedjoko, E. (2022). Analisis Kesulitan Belajar Kalkulus, Reduksi, Dan Strateginya Sebagai Upaya Konstruksi Kemampuan Berpikir Kritis Mahasiswa Calon Guru. Bookchapter Konservasi Pendidikan, 2, 163 194. <https://doi.org/10.1529/Kp.V1i2.47>.
- Taylor, R. D., & Dymnicki, A. B. (2020). Empirical Evidence of Social and Emotional Learning's Influence on School Success: A Commentary on "Building Academic Success on Social and Emotional Learning: What Does the Research Say?". *Journal of Teacher Education for Sustainability*, 22(1), 21–36.
- Turner, D. P. (2020). *Sampling Methods in Research Design*. Headache, 60(1), 8–12.
- Turner, J. L. (2014). *Using Statistics In Small-Scale Language Education Research*. Routledge Taylor & Francis Group.
- Twiningsih, A., Retnawati, H., & Cahyandaru, P. (2022). Pengaruh model pembelajaran kooperatif terhadap keterampilan berpikir kritis dan kreatif dalam pembelajaran IPA pada siswa Sekolah Dasar. Taman Cendekia: *Jurnal Pendidikan Ke-SD-an*, 6(2), 59–69. <https://doi.org/10.30738/tc.v6i2.13599>

- Utami, L. P., Nugroho, A., & Widodo, S. (2024). Kesulitan belajar siswa pada materi stoikiometri. *Jurnal Pendidikan Kimia Indonesia*, 8(1), 33–40.
- Veliesa, G., Haji, S., Sumardi, H., & Budi, A. S. (2023). *Meningkatkan kemampuan berpikir tingkat tinggi dan hasil belajar siswa melalui model Project Based Learning di kelas VIII MTs Baitul Makmur, Kota Bengkulu*. *MES: Journal of Mathematics Education and Science*, 8(2), 195–202. <https://doi.org/10.30743/mes.v8i2.6945>.
- Wahyono, B., Sutrisno, H., & Hidayat, T. (2025). Analysis of students' critical thinking skills in science learning. *Jurnal Pendidikan Sains Indonesia*, 13(1), 15–25.
- Widiastuti, S. (2022). Pembelajaran Sosial Emosional dalam Domain Pendidikan: Implementasi dan Asesmen. *Jurnal Pendidikan Mandala*, 7(4), 964-972.
- Wijayanti, D., Ibnu, S., Utomo, Y., & Munzil. (2024). The effectiveness of creative problem-solving learning on critical thinking skills and stoichiometry learning outcomes of grade X students at SMKN 1 Bakung Blitar, Indonesia. *World Journal of Advanced Research and Reviews*, 24(1), 327–338. <https://doi.org/10.30574/wjarr.2024.24.1.2980>.
- Yang, S., & Berdine, G. (2021). *Normality Tests*. The Southwest Respiratory And Critical Care Chronicles, 9(37), 87–90. <https://doi.org/10.12746/Swrccc.V9i37.805>.
- Yusuf, M., & Rahmawati, D. (2021). Implementasi Social Emotional Learning dalam pembelajaran kooperatif untuk meningkatkan hasil belajar siswa. *Jurnal Pendidikan Karakter*, 12(2), 145-156.