

DAFTAR PUSTAKA

- Abdul, Latif S W, Matzin R, Jawawi R, Mahadi M A, Jaidin J H. Mundia L, Shahrill M. 2017. *Implementing the Flipped Classroom Model in the Teaching of History*. *Journal of Education and Learning*. Vol. 11 (4) pp. 374-381. DOI: 10.11591/edulearn.v11i4.6390.
- Abeysekera, L., & Dawson, P. 2015. *Motivation and cognitive load in the flipped classroom: definition, rationale and a call for research*. *Higher Education Research and Development*, 34(1), 1–14.
<https://doi.org/10.1080/07294360.2014.934336>
- Agustina, M., Achmad, A., & Yolida, B. 2018. *Pengaruh model Pembelajaran inkuiri terbimbing terhadap keterampilan berpikir kritis dan hasil belajar siswa*. *Jurnal Bioterdidik: Wahana Ekspresi Ilmiah*, 6(3), 1-9. Tersedia pada:
<http://jurnal.fkip.unila.ac.id/index.php/JBT/article/view/9253/5891>. Diakses 30 November 2018.
- Ahmed, M. 2016. *The Effect Of A Flipping Classroom On Writing Skill In English As A Foreign Language and Students' Attitude Towards Flipping*. *US-China Foreign Language*. 14(2), pp. 98-114. DOI 10.17265/1539-8080/2016.02.003.
- Akçayır, G., & Akçayır, M. 2018. *The Flipped Classroom: A Review Of Its Advantages And Challenges*. *Computers & Education*, 126, 334–345.
<https://doi.org/10.1016/j.compedu.2018.07.021>.
- Alamri, M. M. 2019. *Students Academic Achievement Perfomance and Satisfaction In A Flipped Classroom In Saudi Arabia*. *Int.J. Technology Enhanced Learning*, 11(1), 103-119. Tersedia pada <https://doi.org/101504/IJTEL.2019.0907B0>
- Alisa Moric Johnson, PhD. 2013. *Saponins As Agents Preventing Infection Caused By Common Waterborne Pathogens*. Presented to the Faculty of the Graduate School of The University of Texas at Arlington in Partial Fulfillment of the Requirements for the Degree of Doctor Of Philosophy The University Of Texas At Arlington.
- Anwar, Saifuddin. 2010. *Metode Penelitian*. Yogyakarta: pustaka pelajar
- Arends, R. I. 2012 *Learning to Tech* (9th Edition). Boston: McGraw-Hill.

- Arifin, Zainal. 2014. *Penelitian Pendidikan : Metode dan Paradigma Baru*. Bandung : PT Remaja Rosda Karya
- Asmuniv. 2015. *Pendekatan Terpadu Pendidikan STEM Upaya Mempersiapkan Sumber Daya Manusia Indonesia Yang Memiliki Pengetahuan Interdisipliner Dalam Menyosong Kebutuhan Bidang Karir Pekerjaan Masyarakat Ekonomi ASEAN (MEA)*. Diakses dari <http://www.vedcmalang.com/pppptkboemlg/index.php/menutama/listrikelect%20ro/%201507-asv9>.
- Banks, F & D. Barlex. 2014. *Teaching STEM in the Secondary School: Helping Teachers Meet the Challenge*. London: Routledg 130e.
- Basal, A. 2015. *The Implementation Of A Flipped Classroom In Foreign Language Teaching*. *Turkish Online Journal Of Distance Education*, 16(4), 28–37. Diambil dari <https://files.eric.ed.gov/fulltext/EJ1092800.pdf>
- Bergmann, J., & Sams, A. 2012. *Flip Your Classroom : Reach Every Student in Every Class Every Day*. (L. Gansel & T. Wells, Eds.). USA: Courtney Burkholder.
- Beers, S. 2011. *21st Century Skill: Preparing Students For Their Future*. Diakses: http://www.yinghuaacademy.org/21st_century_skills.pdf
- Bishop, Jacob. 2013. *The Flipped classroom: A Survey Of The Research*. *Research Article: Utah State University*. Diambil pada tanggal 23 maret 2018 dari <https://www.asee.org/public/conferences/20/papers>.
- Box, G.E.P. & Draper N. R. 1987. *Empirical Model-Building and Response Surface*. New York: John Wiley & Sons.
- Brewer, R., dan Movahedazarhouligh, S. 2018. *Successful Stories and Conflicts: A Literature Review On The Effectiveness Of Flipped Learning In Higher Education*. *Journal of Computer Assisted Learning*, 3(4), 409–416. <https://doi.org/10.1111/jcal.12250>.
- Bybee, R. W. 2013. *The Case For STEM Education: Challenges And Opportunity*. Arling, VI: National Science Teacher Association (NSTA) Press.
- Cai, J., Yang, H. H., Gong, D., MacLeod, J., & Zhu, S. 2019. *Understanding The Continued Use Of Flipped Classroom Instruction: a personal beliefs model in Chinese higher education*. *Journal of Computing in Higher Education*, 31(1), 137–155. <https://doi.org/10.1007/s12528-018-9196-y>
- Candiasa, I M. 2004. *Analisis Butir Disertai Aplikasi Dengan ITEMAN, BIGSTEPS dan SPSS*, Singaraja: Unit Penerbitan IKIP Negeri Singaraja

- Chen, K.-S., Monrouxe, L., Lu, Y.-H., Jenq, C.-C., Chang, Y.-J., Chang, Y.-C., & Chai, P. Y.-C. 2018. *Academic Outcomes Of Flipped Classroom Learning: a meta-analysis*. *Medical Education*, 52(9), 910–924.
<https://doi.org/10.1111/medu.13616>
- Cholisoh dan Fatimah. 2015. *Kemampuan Berpikir Kritis Pada Pembelajaran IPA Terpadu Ditinjau Dari Motivasi Belajar*. *Jurnal Pendidikan Fisika Indonesia* 11 (2). 134-141. Tersedia pada
<http://journal.unnes.ac.id/nju/index.php/jpfi>
- Depdiknas. 2003. *Undang-undang RI No.20 tahun 2003.Tentang Sistem pendidikan nasional*.
- Direktorat Jendral Sumber Daya IPTEK dan DIKTI. 2018. *Era Revolusi Industri 4.0, Saatnya Generasi Millennial Menjadi Dosen Masa Depan*. Jakarta.
<http://sumberdaya.ristekdikti.go.id/index.php/2018/01/30/erarevolusi-industri-4-0-saatnya-generasi-millennial-menjadi-dosen-masadepan/>
- Ennis, H.*The Critical Thinking Skills*, Allyn & Bacon.1985. Boston
- Ennis, R. H. 2011. *The Nature of Critical Thinking: An Outline of Critical Thinking Disposition and Abilities*. Last Revised. Emeritus Proffessor: University of Illinois.
- Fazio, Maria, Antonio Celesti, Antonio Puliafito, and Massimo Villari. *Big Data Storage In The Cloud For Smart Environment Monitoring*, *Procedia Computer Science* 52 (2015): 500-506.
- Facione, P. A. 2011. *Critical Thinking: What It Is and Why It Counts*. Millbrae: Measured Reasons and The California Academic Press.
- Facione, P.A. 2013. *Critical Thinking: What It Is and Why It Counts*. Millbrae CA: Measured Reason and The California Academic Press.
- Felder, R. M dan R. Brent. 2016. *Teaching and Learning STEM: A Practical Guide*. San Francisco: Jossey-Bass.
- Fitriani dan Gunawan. *Berpikir Kreatif Dalam Fisika Dengan Pembelajaran Conceptual Understanding Procedures (Cups) Berbantuan LKPD*. *Jurnal Pendidikan Fisika dan Teknologi*, Vol. 3, No.1, Juni 2017.
- Fuad, N. M., Zubaidah, S., Mahanal, S., & Suarsini, E. 2017. *Improving Junior High Schools' Critical Thinking Skills Based On Test Three Different Models Of Learning*. *International Journal of Instruction*, 10(1), 101–116.
<https://doi.org/10.12973/iji.2017.1017a>

- Garrison, D. R., dan Kanuka, H. 2004. *Blended Learning: Uncovering Its Transformative Potential In Higher Education*. The Internet and Higher Education, 7(2), 95–105.
- Graham, C. R. 2006. *Blended Learning Systems: Definition, Current Trends And Future Directions*. In C. J. Bonk, & C. R. Graham (Eds.). In , Handbook of blended learning: *Global perspectives, local designs*. San Francisco: Pfeiffer.
- Hanover, Research. 2011. *K-12 STEM education overview*
- Jdaitawi, M. 2019. *The Effect Of Flipped Classroom Strategy On Students Learning Outcomes*. International Journal of Instruction, 12(3), 665–680. <https://doi.org/10.29333/iji.2019.12340a>
- Jeong, K.-O. 2017. *The Use Of Moodle To Enrich Flipped Learning For English As A Foreign Language Education*. Article in Journal of Theoretical and Applied Information Technology, 95(18). www.jatit.org
- Elaine, Johnson, B. 2012. CTL – *Contextual Teaching & Learning Menjadikan Kegiatan Belajar Mengajar Mengasyikkan dan Bermakna*. Bandung : Kaifa.
- Khoiriyah, N., Abdurrahman, A., dan Wahyudi, I. 2018. *Implementasi Pendekatan Pembelajaran STEM Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa SMA Pada Materi Gelombang Bunyi*. Jurnal Riset Dan Kajian Pendidikan Fisika, 5(2), 53. <https://doi.org/10.12928/jrkpf.v5i2.9977>
- Knewton. 2011. *Flipped Classroom: A New Method Of Teaching Is Turning The Traditional Classroom On Its Head*. New York: Knewton, <http://www.knewton.com/flipped-classroom/2011>.
- Lai, C., dan Hwang, G. 2016. *A Self-Regulated Flipped Classroom Approach To Improving Students' Learning Performance In A Mathematics Course*. Computers & Education, 1–47. <https://doi.org/10.1016/j.compedu.2016.05.006>
- Nurmayani, L., Doyan, A., dan Verawati, N. N. S. P. 2018. *Pengaruh Model Pembelajaran Inkuiri Terbimbing Terhadap Kemampuan Berpikir Kritis Peserta Didik*. Jurnal Pendidikan Fisika Dan Teknologi, 4(1), 98–104. <https://doi.org/10.29303/jpft.v4i1.548>
- Normaya, K. 2015. *Kemampuan Berpikir Kritis dalam Pembelajaran Matematika dengan Menggunakan Model JUCAMA di Sekolah Menengah Pertama*. Edu-Mat Jurnal Pendidikan Matematika. 3(1), 92—104. Retrieved

from <http://ppjp.unlam.ac.id/journal/index.php/edumat/article/view/634/542>

- Nugraha dan Suyitno. 2017. *Analisis Kemampuan Berpikir Kritis Ditinjau dari Keterampilan Proses Sains dan Motivasi Belajar Melalui Model PBL*. Journal of Primary Education 6 (1). Tersedia pada <http://journal.unnes.ac.id/nju/index.php/jpe>.
- Permanasari, Anna. 2016. *STEM Education : Inovasi dalam Pembelajaran Sains*. Bandung: Prosiding Seminar Nasional Pendidikan Sains.
- Prihartiningsih, Zubaidah, S., & Kusairi. 2016. *Kemampuan Berpikir Kritis Siswa SMP pada Materi Klasifikasi Makhluk Hidup*. Prosiding Seminar Nasional Pendidikan IPA Pascasarjana UM, (1)1053-1062.
- Puspitasari, R. D., Herlina, K., & Suyatna, A. 2020. *A Need Analysis of STEM-integrated Flipped Classroom E-module to Improve Critical Thinking Skills*. Indonesian Journal of Science and Mathematics Education, 3(2), 178–184. <https://doi.org/10.24042/ij sme.v3i2.6121>
- Rahmiza, S., Adlim, dan Mursal. 2015. *Pengembangan LKS STEM (Science, Technology, Engineerin, and Mathematics) dalam meningkatkan Motivasi dan Aktivitas Belajar Siswa SMA negeri 1 Beutong pada Materi Induksi Elektromagneti*. Jurnal Pendidikan Sains Indonesia, 239-250.
- Ratnaningtyas, Yessy. 2016. *Kemampuan Berpikir Kritis Siswa Smp Kelas VIII Dalam Menyelesaikan Soal Higher Order Thinking Ditinjau Dari Kemampuan Matematika*. Jurnal Ilmiah Pendidikan Matematika. Vol 1 No. 5 Tahun 2016: Hal 86-94.
- Rofa'ah. 2016. *Pentingnya Kompetensi Guru dalam Kegiatan Pembelajaran Dalam Perspektif Islam*. Yogyakarta: Deepublish
- Reidsema, Carl. *The Flipped Classroom. Practice and Practices in Higher Education*. Singapore: Springer, 2017.
- Rusman. 2012. *Model-model Pembelajaran*. Depok, PT Rajagrafindo Persada
- Santrock, J. W. 2014. *Adolescence (14th ed.)*. UK: McGraw-Hil Education.
- Santyasa, I. W. 2017. *Pembelajaran Inovatif*. Singaraja: Undiksha.
- Shahali, E. H. M., Halim, L., Rasul, M. S., Osman, K., & Zulkifeli, M. A. 2016. *STEM learning through engineering design: Impact on middle secondary students' interest towards STEM*. EURASIA Journal of Mathematics, Science and Technology Education, 13(5), 1189-1211. <https://doi.org/10.12973/eurasia.2017.00667a>

- Siregar, Syofian. 2014. *Statistika Deskriptif untuk Penelitian*. Jakarta: Rajawali Sudarsono. Heri. 2009. *Bank dan Lembaga Keuangan Syariah, Deskripsi dan Ilustrasi*. Yogyakarta: Ekonisia
- Siregar, N. A. R., Deniyanti, P., & Hakim, L. El. 2018. *Pengaruh Model Pembelajaran Core Terhadap Kemampuan Berpikir Kritis Dan Disposisi Matematis Ditinjau Dari Kemampuan Awal Matematika Siswa SMA Negeri Di Jakarta Timur*. *Jurnal Penelitian dan Pembelajaran Matematika*. <https://doi.org/10.30870/jppm.v11i1.2997>
- Slameto. 2015. *Belajar dan Faktor-faktor yang Memengaruhinya*. Jakarta: Rineka Cipta.
- Slavin, R.E. 2017. *Psikologi Pendidikan Teori dan Praktek*. Jakarta: PT. Indeks
- Smallhorn, M. 2017. *The flipped classroom: A learning model to increase student engagement not academic achievement*. *Student Success Volume 8, Issue 2*, pp. 43-53.
- Solihin, M. W. Sri, Prastowo, H. B. Supeno. 2018. *Pengaruh Model Pembelajaran Inkuiri Terbimbing Terhadap Kemampuan Berpikir Kritis Siswa Sma*. *Jurnal Pembelajaran Fisika*, Vol. 7 No. 3, September 2018, hal 299-306.
- Souse, D.A. dan T. Pilecki. 2018. *From STEM to STEAM Brain-Compatible Strategies and Lesson That Integrate the Arts (Second Edition)*. California: Corwin SAGE
- Soh, T. M. T., N. M. Arsad, dan K. Osman. 2010. *The Relationship of 21st Century Skills on Students' Attitude and Perception towards Physics*. *Procedia Social and Behavioral Science*. 7(C): 546-554.
- Stehle, S. M., dan Peters-Burton, E. E. 2019. *Developing student 21 st Century skills in selected exemplary inclusive STEM high schools*. *International Journal of STEM Education*, 6(1), 39. <https://doi.org/10.1186/s40594-019-0192-1>
- Sudrajat, Akhmad. 2011. *Model Pembelajaran Langsung (Direct Instruction)*. [Online]. Tersedia di <http://akhmadsudrajat.wordpress.com/2011/01/27/model-pembelajaran-langsung>
- Suardi, S. 2020. *Implementasi Pembelajaran Berbasis Stem Untuk Meningkatkan Kemampuan Dalam Berpikir Kritis, Kreatif Dan Bekerjasama Peserta Didik Kelas VII A SMP Negeri 4 Sibulue*. *Jurnal Sains Dan Pendidikan Fisika*, 16(2), 135. <https://doi.org/10.35580/Jspf.V16i2.12557>
- Suwarma, I. R., Astuti, P., Nur. 2015. *"Balloon Powered Car" Sebagai Media Pembelajaran IPA Berbasis STEM (Science, Technology, Engineering, And*

- Mathematics*). Prosiding Simposium Nasional Inovasi dan Pembelajaran Sains 2015 (SNIPS 2015) 8 dan 9 Juni 2015.
- Sugiyono. 2019. *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung : Alfabeta.
- Sugiyanti, L., Alif, A., dan Mursalin, M. 2018. *Pembelajaran Pada Abad Ke 21 di SD*. Prosiding Seminar dan Diskusi Nasional Pendidikan Dasar.hlm. 439-444.
- Sulistyaningrum, H., Winata, A., dan Cacik, S. 2019. *Analisis Kemampuan Awal 21st Century Skills Mahasiswa Calon Guru SD*. *Jurnal Pendidikan Dasar Nusantara*, 5(1), 142. <https://doi.org/10.29407/jpdn.v5i1.13068>
- Suprihatiningrum, Jamil. 2013. *Strategi Pembelajaran Teori dan Aplikasi*. Yogyakarta: AR-RUZZ Media.
- Slameto. 2003. *Belajar dan Faktor-faktor yang mempengaruhinya*. Jakarta: Rineka Cipta.
- Syukri, M dan Halim, L. 2013. *Pendidikan STEM dalam Enterpreneurial Science Thinking "ESciT": Satu Perkongsian Pengalaman dari UKM untuk Aceh*. *Aceh Development International Confefence*.
- Sousa, D.A. 2018. *From STEM to STEAM brain-compatible Strategies and Lessons that Integrate the arts*. Thousand Oaks, Calif. : Corwin, 2018.
- Torlakson. T. 2014. *Innovate: A Blueprint For Science, Technology, Engineering, and Mathematics in California Public Education*. California: State Superintendent of Public Instruction.
- Ulfa, N. F. 2014. *Implementasi Strategi Flipped Classroom dalam Pembelajaran Matematika Terhadap Kemampuan Kognitif Ditinjau dari Keaktifan Belajar Siswa SMA Negeri 1 Surakarta*. Surakarta: Universtas Muhammadiyah Surakarta.
- Usman, E, A., Asrizal., Kamus, Z (2017). *Pengembangan LKS IPA Terpadu Mengintegrasikan Literasi Sainifik pada Materi Gerak Dalam Kehidupan untuk Siswa Kelas VIII SMP* . *Pillar of Physics Education*, Vol. 9 April 2017, hlm 25-23.
- Uzunboyly, H., dan Karagozlu, D. 2015. *Flipped Classroom : a review of recent literature*. *World Journal on Educational Technology*, 7(2), 142–147. <https://doi.org/10.18844/wjet.v7i2.46>
- W. E. Dugger.2010. "Evolution of STEM in the United States," *6Th Bienn. Int. Conf. Technol. Educ. Res.*, no. March, pp. 1–8.

- Winarni, J., Zubaidah, S., dan H, S. K. 2016. STEM: apa, mengapa, dan bagaimana. In Prosiding Seminar Nasional Pendidikan IPA Pascasarjana UM (Vol. 1, pp. 976–984)
- PISA. 2018. *Insights and Interpretations PISA 2018*. Diakses pada 20 November 2020 pada <https://www.oecd.org/pisa/PISA%202018%20Insights%20and%20Interpretations%20FINAL%20PDF.pdf>
- Pertiwi, Ratri Sekar. 2017. *Pengembangan Lembar Kerja Siswa Dengan Pendekatan STEM (Science, Technology, Engineering, Mathematics) Untuk Melatih Keterampilan Berpikir Kreatif Siswa Pada Materi Fluida Statis*. Universitas Lampung.
- Pangesti, K I., D. Yulianti dan Sugianto. 2017. *Bahan Ajar Berbasiss STEM Untuk Meningkatkan Penguasaan Konsep Siswa SMA*. *Unnes Physics Education Journal*. 6(3).
- Taber, K. S. 2013. *Modelling Learners and Learning in Science Education*. New York: Springer.
- Thibaut, L., Ceuppens, S., De Loof, H., De Meester, J., Goovaerts, L., Struyf, A., Depaepe, F. (2018). *Integrated STEM Education: a systematic review of instructional practices in secondary education*. *European Journal of STEM Education*. <https://doi.org/10.20897/ejsteme/85525>.
- Trianto. 2013. *Mendesain Model Pembelajaran Inovatif, Progresif, Konsep, Landasan, dan Implementasinya Pada Kurikulum Tingkat Satuan Pendidikan (KTSP)*. Jakarta: Kencana Prenada Media Group.
- Undang-Undang Sistem Pendidikan Nasional, 2003. Citra Umbara, Jakarta
- Voos, R. 2003. *Blended Learning what Is It And Where Might It Take Us?* *Sloan-C View*, 2(1), 2–5.
- Walsh, Kelly. 2016. *A Study of the Flipped Classroom and It's Effenctiveness in Flipping Thirty Percent of the Course Cotent*. *International Journal Of Information And Education Technology*, 6 (5). Hal: 348-351
- Wulandari, Dewi. 2017. *Efektivitas Model Pembelajaran Guided Inquiry Terhadap Kemampuan Berpikir Kritis Dan Keterampilan Proses Sains Siswa Kelas XI IPA SMA Materi Sistem Respirasi*. Tesis. Universitas Negeri Yogyakarta, Yogyakarta, Indonesia.