

**PENERAPAN *COMMUNITY OF INQUIRY* (CoI) TERHADAP
KETERAMPILAH KOLABORASI PADA MATERI PENCEMARAN
LINGKUNGAN**

SKRIPSI

*Diajukan untuk memenuhi sebagian dari syarat memperoleh gelar sarjana
Pendidikan Biologi*



Oleh :

Amalia Karim

NIM. 1702574

**PROGRAM STUDI PENDIDIKAN BIOLOGI
DEPARTEMEN PENDIDIKAN BIOLOGI
FAKULTAS PENDIDIKAN MATEMATIKA DAN ILMU PENGETAHUAN ALAM
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Amalia Karim

Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar sarjana Pendidikan Biologi pada Fakultas Pendidikan Matematika dan Ilmu Pengetahuan Alam

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LEMBAR PENGESAHAN
AMALIA KARIM

**PENERAPAN *COMMUNITY OF INQUIRY* (CoI) TERHADAP
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LINGKUNGAN**

Disetujui dan disahkan oleh pembimbing :

Pembimbing I,



Dr. Hj. Sri Anggraeni, M.S.

NIP. 195801261987032001

Pembimbing II,



Dr. Hj. Any Fitriani, M.Si.

NIP. 196502021991032001

Mengetahui, Ketua Program Studi Pendidikan Biologi,



Dr. Amprasto, M.Si

NIP. 196607161991011001

KATA PENGANTAR

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Penulis menyadari bahwa dalam penyusunan skripsi ini masih jauh dari kata sempurna, karena itu penulis sangat mengharapkan kritik dan sarat yang bersifat membangun dari seluruh pihak untuk menyempurnakan skripsi ini. Penulis berharap skripsi ini dapat bermanfaat bagi para pembaca, juga bagi penulis sendiri. Penulis juga berharap semoga penelitian yang telah dilaksanakan dapat menjadi sebuah inovasi untuk membangun pendidikan di Indonesia. Akhir kata, penulis mengucapkan terima kasih kepada seluruh pihak yang telah mendukung dan membantu dalam penyusunan skripsi ini.

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ABSTRAK

Pengembangan keterampilan kolaborasi merupakan hal yang penting demi mempersiapkan siswa menghadapi era globalisasi pada abad 21. Penelitian ini bertujuan untuk menganalisis bagaimana penerapan CoI terhadap keterampilan kolaborasi siswa pada materi pencemaran lingkungan. Metode yang digunakan adalah *quasi experimental* dengan desain *non-equivalent control group design*. Partisipan penelitian ditentukan dengan teknik *purposive sampling* dengan karakteristik merupakan siswa kelas X MIPA yang memiliki akun zoom dan Google Classroom, juga terbiasa dalam berkomunikasi melalui aplikasi WhatsApp. Pembelajaran menggunakan CoI diterapkan pada kelas eksperimen, sementara pada kelas kontrol diterapkan pembelajaran *guided discovery learning*. Data utama dijangin menggunakan tes keterampilan kolaborasi berupa *pre-test* dan *post-test* sebanyak empat belas soal, lembar observasi dan lembar *peer assessment*, sedangkan data pendukung menggunakan angket respon siswa dan lembar observasi keterlaksanaan model pembelajaran CoI. Hasil analisis data pada instrument utama menunjukkan bahwa kedua kelas berada pada kategori keterampilan yang tinggi dan sangat tinggi dengan peningkatan yang lebih besar pada kelas eksperimen. Hasil uji N-Gain terhadap kelas eksperimen menunjukkan nilai peningkatan yang rendah yaitu sebesar 0,122. Kesimpulan yang diperoleh dari penelitian ini adalah, model pembelajaran CoI kurang berpengaruh terhadap keterampilan kolaborasi.

Kata kunci : *Community of Inquiry (CoI), keterampilan kolaborasi, dan Pencemaran lingkungan*

ABSTRACT

The development of collaboration skills is important in order to prepare students for 21st century's globalization. This study aims to analyze how the application of CoI to students's collaboration skills on environmental pollution material. The method used is quasi-experimental design with non-equivalent control group design. Research participants determined by purposive sampling technique with characteristics of class X MIPA students who have zoom and Google Classroom accounts, also accustomed to communicating through the WhatsApp. Learning using CoI was applied to the experimental class, while *guided discovery learning* was applied to the control class. The main data was collected using collaboration skills tests in pre-test and post-test with fourteen questions, observation sheets and *peer assessment* sheets, while the supporting data used student response questionnaires and observation sheets on the implementation of the CoI learning model. The results of data analysis on the main instruments showed that both classes were in the high and very high skill category with a higher increase in the experimental class. The results of the N-Gain test for the experimental class showed a low increase in value of 0.122. The conclusion obtained from this study is that the CoI learning model has less effect on collaboration skills.

Keywords: Community of Inquiry (CoI), collaboration skills, and environmental pollution

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- Afrianita, R., & Dewilda, Y. (2013). SEBAGAI ADSORBEN DALAM MENYISIHKAN LOGAM BERAT KROMIUM (Cr). *Jurnal Teknik Lingkungan*.
- Akcaoglu, M., & Lee, E. (2016). Increasing social presence in online learning through small group discussions. *International Review of Research in Open and Distance Learning*, 17(3), 1–17. <https://doi.org/10.19173/irrodl.v17i3.2293>
- Akram Awla, H. (2014). Learning Styles and Their Relation to Teaching Styles. *International Journal of Language and Linguistics*, 2(3), 241. <https://doi.org/10.11648/j.ijll.20140203.23>
- Akyol, Z., Vaughan, N., & Garrison, D. R. (2011). The impact of course duration on the development of a community of inquiry. *Interactive Learning Environments*, 19(3), 231–246. <https://doi.org/10.1080/10494820902809147>
- Amal, B. K. (2019). Pembelajaran Blended Learning Melalui Whatsapp Group (Wag). *Prosiding Seminar Nasional Fakultas Ilmu Sosial Universitas Negeri Medan*, 3, 700–702.
- Amry, A. B. (2014). The impact of WhatsApp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal*, 10(22), 116–136. <http://eujournal.org/index.php/esj/article/view/3909>
- Andayani, Y., Sridana, N., Kosim, Setiadi, D., & Hadi, G. (2018). Harapan Dan Tantangan Implementasi Pembelajaran IPA Dalam Konteks Kompetensi Keterampilan Abad 21 Di Sekolah Menengah Pertama. *Jurnal Edukasi Sumba (JES)*, 3(2), 53–60.
- Aprian, R., & Munawar, A. (2012). Pengolahan Sampah Plastik Menjadi Minyak Menggunakan Proses Pirolisis. *Envirotek : Jurnal Ilmiah Teknik Lingkungan*, 4(1), 44–53.
- Arifin, Z. (2015). PERILAKU REMAJA PENGGUNA GADGET; Analisis Teori Sosiologi Pendidikan. *Jurnal Pemikiran Keislaman*, 26(2), 287–316. <https://doi.org/10.33367/tribakti.v26i2.219>
- Arikunto, Suharsimi. 2001. *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta. : Rineka Cipta.ar
- Arsyad, A. (2011). *Media Pembelajaran*. Jakarta: PT Raja Grafindo Persada
- Azis, A. A., Selintung, M., & Zubair, A. (2016). Efektivitas Arang Aktif Dalam Mengadsorpsi Logam Cd dan Pb Dalam Air Limbah Industri. *Tugas Akhir Jurusan Teknik Sipil, Cd*, 1–10.
- Bell, S. (2010). Project-Based Learning for the 21st Century: Skills for the Future. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(2), 39–43. <https://doi.org/10.1080/00098650903505415>

- Bergman, R., & Zerbe, J. (2008). *Primer on Wood Biomass for Energy*. January, 1–10.
http://www.fpl.fs.fed.us/documnts/fpmu/biomass_energy/primer_on_wood_biomass_for_energy.pdf
- Blumenfeld, P., Marx, R., Soloway, E., & Krajcik, J. (1996). Learning With Peers: From Small Group Cooperation to Collaborative Communities. *Educational Researcher*, 25(8), 37–40.
- Brailas, A., Avani, S. M., Gkini, C., Deilogkou, M. A., Koskinas, K., & Alexias, G. (2017). Experiential learning in action: A collaborative inquiry. *Qualitative Report*, 22(1), 271–288. <https://doi.org/10.46743/2160-3715/2017.2551>
- Brown, R. E. (2001). The process of community-building in distance learning classes. *Journal of Asynchronous Learning Network*, 5(2), 18–35. <https://doi.org/10.24059/olj.v5i2.1876>
- Carlson, S., Bennett-Woods, D., Berg, B., Claywell, L., Leduc, K., Marcisz, N., Mulhall, M., Noteboom, T., Snedden, T., Whalen, K., & Zenoni, L. (2012). The community of inquiry instrument: Validation and results in online health care disciplines. *Computers and Education*, 59(2), 215–221. <https://doi.org/10.1016/j.compedu.2012.01.004>
- Castro, R. S. D., Ferreira, G., Padilha, P. M., Saeki, M. J., Zara, L. F., Martines, M. A. U., & Castro, G. R. (2011). *Banana Peel Applied to the Solid Phase Extraction of Copper and Lead from River Water : Preconcentration of Metal Ions with a Fruit Waste*. 3446–3451.
- Chen, J. P., Chen, W. R., & Hsu, R. C. (1996). Biosorption of copper from aqueous solutions by plant root tissues. *Journal of Fermentation and Bioengineering*, 81(5), 458–463. [https://doi.org/10.1016/0922-338X\(96\)85148-8](https://doi.org/10.1016/0922-338X(96)85148-8)
- Child, S., & Shaw, S. (2016). Collaboration in the 21st century: Implications for assessment. *A Cambridge Assessment Publication*, 22, 17–22. <https://www.cambridgeassessment.org.uk/Images/374626-collaboration-in-the-21st-century-implications-for-assessment.pdf>
<http://www.cambridgeassessment.org.uk/research-matters/>
- Darmayanti, D., Rahman, N., & Supriadi, S. (2012). Adsorpsi Timbal (Pb) Dan Zink (Zn) Dari Larutannya Menggunakan Arang Hayati (Biocharcoal) Kulit Pisang Kepok Berdasarkan Variasi pH. *Jurnal Akademika Kimia*, 1(4), 224156.
- Dharma, H. R., & Dewi, U. P. (2017). Basic Japanese Grammar and Conversation e-learning through Skype and Zoom Online Application. *Procedia Computer Science*, 116(September 2019), 267–273. <https://doi.org/10.1016/j.procs.2017.10.055>
- Falahudin, I. (2014). Pemanfaatan Media dalam Pembelajaran. *Jurnal Lingkar Widyaaiswara*, 1(4), 104–117.
- Fernando, A., Monteiro, S., Pinto, F., & Mendes, B. (2009). Production of

- biosorbents from waste olive cake and its adsorption characteristics for Zn²⁺ ion. *Sustainability*, 1(2), 277–297. <https://doi.org/10.3390/su1020277>
- Freeman, Diane Larsen and Anderson, M. (2010). *Techniques-Principles-Language-Teaching* (Oxford (ed.); Third). Oxford University Press.
- 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>
- Gallagher, J. E., Dobrosielski-Vergona, K. A., Wingard, R. G., & Williams, T. M. (2005). Web-based vs. traditional classroom instruction in gerontology: a pilot study. *Journal of Dental Hygiene: JDH / American Dental Hygienists' Association*, 79(3), 7.
- Garrison, D., & Arbaugh, J. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *Internet and Higher Education*, 10(3), 157–172. <https://doi.org/10.1016/j.iheduc.2007.04.001>
- Garrison, D. R. (2019). Online Community of Inquiry Review: Social, Cognitive, and Teaching Presence Issues. *Online Learning*, 11(1), 61–72. <https://doi.org/10.24059/olj.v11i1.1737>
- Garrison, D. Randy, Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *International Journal of Phytoremediation*, 21(1), 7–23. <https://doi.org/10.1080/08923640109527071>
- Garrison, R., & Anderson, T. (2003). *E-Learning in the 21st Century*. RoutledgeFalmer.
- Greenstein, L. (2012). *Assessing 21st century skills: A guide to evaluating mastery and authentic learning*. Corwin Press.
- Gibson, C. (2017). An Examination Of How Middle School Science Teachers Conduct Collaborative Inquiry And Reflection About Students' Conceptual Understanding. *Contemporary Issues in Education Research (CIER)*, 10(2), 169–178. <https://doi.org/10.19030/cier.v10i2.9933>
- Giyatmi, Z. K., & Melati, D. (2008). *Penurunan Kadar Cu, Cr Dan Ag Dalam Limbah Cair Industri Perak Di Kotagede Setelah Diadsorpsi Dengan Tanah Liat Dari Daerah Godean*. In *Prosiding Seminar Nasional IV SDM Teknologi Nuklir, Yogyakarta*. 25–26.
- Hake, R. (1999). ANALYZING CHANGE/GAIN SCORES. *Indiana*, 6(1). <https://doi.org/10.24036/ekj.v1.i1.a10>
- Häkkinen, P., Järvelä, S., Mäkitalo-Siegl, K., Ahonen, A., Näykki, P., & Valtonen, T. (2017). Preparing teacher-students for twenty-first-century learning practices (PREP 21): a framework for enhancing collaborative problem-solving and strategic learning skills. *Teachers and Teaching: Theory and Practice*, 23(1), 25–41. <https://doi.org/10.1080/13540602.2016.1203772>

- Halim, A. (2012). Pengaruh Strategi Pembelajaran dan Gaya Belajar Terhadap Hasil Belajar Fisika Siswa SMPN 2 Secanggang Kabupaten Langkat. *Jurnal Tabularasa PPS UNIMED*, 9(2), 141–158.
- Hidayanti, E., Savalas, L. R. T., & Ardhuha, J. (2020). Keterampilan Kolaborasi : Solusi Kesulitan Belajar Siswa SMA dalam Mempelajari Kimia. *Seminar Nasional Pendidikan PGSD UNRAM*, 1–7. <http://prospek.unram.ac.id/index.php/inklusif/article/view/33>
- Hidayati, N. (2018). Collaboration skill of biology students at Universitas Islam Riau, Indonesia. *International Journal of Scientific and Technology Research*, 8(11), 208–211.
- Hilliard, L. P., & Stewart, M. K. (2019). Time well spent: Creating a community of inquiry in blended first-year writing courses. *Internet and Higher Education*, 41(September 2018), 11–24. <https://doi.org/10.1016/j.iheduc.2018.11.002>
- Hoskins, B. J. (2012). Connections, Engagement, and Presence. *Journal of Continuing Higher Education*, 60(1), 51–53. <https://doi.org/10.1080/07377363.2012.650573>
- Kim, J., Kwon, Y., & Cho, D. (2011). Investigating factors that influence social presence and learning outcomes in distance higher education. *Computers and Education*, 57(2), 1512–1520. <https://doi.org/10.1016/j.compedu.2011.02.005>
- Kirschner, P. A., Sweller, J., Kirschner, F., & Zambrano, J. R. (2018). From Cognitive Load Theory to Collaborative Cognitive Load Theory. *International Journal of Computer-Supported Collaborative Learning*, 13(2), 213–233. <https://doi.org/10.1007/s11412-018-9277-y>
- Kobbe, L., Weinberger, A., Dillenbourg, P., Harrer, A., Hämäläinen, R., Häkkinen, P., & Fischer, F. (2007). Specifying computer-supported collaboration scripts. *International Journal of Computer-Supported Collaborative Learning*, 2(2–3), 211–224. <https://doi.org/10.1007/s11412-007-9014-4>
- Kosasih, L., & Iqbal, M. (2013). E-Learning dengan Menggunakan COI Framework. *ComTech: Computer, Mathematics and Engineering Applications*, 4(2), 856. <https://doi.org/10.21512/comtech.v4i2.2523>
- Kreijns, K., Van Acker, F., Vermeulen, M., & Van Buuren, H. (2014). Community of Inquiry: Social presence revisited. *E-Learning and Digital Media*, 11(1), 5–18. <https://doi.org/10.2304/elea.2014.11.1.5>
- Kurniawati, F. N., Susanto, S., & Munir, A. (2019). Promoting Students' Collaboration Skill Through Project Based Learning of English Writing. *ANGLO-SAXON: Jurnal Ilmiah Program Studi Pendidikan Bahasa Inggris*, 10(1), 29. <https://doi.org/10.33373/anglo.v10i1.1890>
- Kurniawati, N., Maolida, H., & Anjaniputra, A. G. (2018). The praxis of digital literacy in the EFL classroom: Digital-immigrant vs digital-native teacher. *Indonesian Journal of Applied Linguistics*, 8(1), 28–37. <https://doi.org/10.17509/ijal.v8i1.11459>

- Langgeng, Sajidan, & Prayitno. (2017). PENGEMBANGANIMPLEMENTASIMODEL PEMBELAJARAN INKUIRI KOLABORATIF DENGAN MEMANFAATKAN POTENSI LOKAL PADA MATERI TUMBUHAN LUMUT DAN PAKU. *Jurnal Inkuiri*, 6(1).
- Latif, S. (2016). Learning Engagement in Virtual Environment. *International Journal of Computer Applications*, 148(11), 7–13. <https://doi.org/10.5120/ijca2016911289>
- Lawrie, G. A., Gahan, L. R., Matthews, K. E., Weaver, G. C., Bailey, C., Adams, P., Kavanagh, L. J., Long, P. D., & Taylor, M. (2014). Technology supported facilitation and assessment of small group collaborative learning in large 1st year classes. *Journal of Learning Design*, 7(2). <https://doi.org/10.5204/jld.v7i2.204>
- Le, H., Janssen, J., & Wubbels, T. (2018). Collaborative learning practices: teacher and student perceived obstacles to effective student collaboration. *Cambridge Journal of Education*, 48(1), 103–122. <https://doi.org/10.1080/0305764X.2016.1259389>
- Lee, D., Huh, Y., & Reigeluth, C. M. (2015). Collaboration, intragroup conflict, and social skills in project-based learning. *Instructional Science*, 43(5), 561–590. <https://doi.org/10.1007/s11251-015-9348-7>
- Lee, J., & Lee, Y. (2006). Personality types and learners' interaction in web-based threaded discussion. *The Quarterly Review of Distance Education*, 7(1), 83–94.
- Lee, S. M. (2014). The relationships between higher order thinking skills, cognitive density, and social presence in online learning. *Internet and Higher Education*, 21, 41–52. <https://doi.org/10.1016/j.iheduc.2013.12.002>
- Lowell, V. L., & Ashby, I. V. (2018). Supporting the development of collaboration and feedback skills in instructional designers. *Journal of Computing in Higher Education*, 30(1), 72–92. <https://doi.org/10.1007/s12528-018-9170-8>
- Lydia, S. (2011). Karakteristik luas permukaan karbon aktif dari ampas tebu dengan aktivasi kimia. *Jurnal Teknik Kimia Indonesia*, 10(3), 149–156. <https://doi.org/10.5614/jtki.2011.10.3.6>
- Lynn, T., & Macdonald, C. J. (2005). *Community building , emergent design and expecting the unexpected : Creating a quality eLearning experience*. 8, 233–249. <https://doi.org/10.1016/j.iheduc.2005.06.004>
- Mager, U., & Nowak, P. (2012). Effects of student participation in decision making at school. A systematic review and synthesis of empirical research. *Educational Research Review*, 7(1), 38–61. <https://doi.org/10.1016/j.edurev.2011.11.001>
- Maheshwari, G. (2021). Factors affecting students' intentions to undertake online learning: an empirical study in Vietnam. *Education and Information Technologies*, 26(6), 6629–6649. <https://doi.org/10.1007/s10639-021-10465-8>
- Maulidah, E. (2019). Character Building Dan Keterampilan Abad 21 Dalam

- Pembelajaran Di Era Revolusi Industri 4.0. *Prosiding Seminar Nasional PGSD, 27 April 2019*, 138–146.
- Millah, E. (2009). *Pemanfaatan Arang Aktif dari Biji Buah Jambu sebagai Adsorben*. 1–2.
- Muiz, A., Wilujeng, I., Jumadi, & Senam. (2016). Implementasi Model Susan Loucks-Horsley Terhadap Communication and Collaboration Peserta Didik Smp. *Unnes Science Education Journal*, 5(1), 1079–1084. <https://doi.org/10.15294/usej.v5i1.9565>
- Murphy, E. (2004). Recognising and promoting collaboration in an online asynchronous discussion. *British Journal of Educational Technology*, 35(4), 421–431.
- Njiro, E. (2015). Community of Inquiry and Its Application for Distance Education. *Journal of Educational and Social Research*, January. <https://doi.org/10.5901/jesr.2015.v5n1p123>
- Notari, M. P., & Baumgartner, A. (2010). Do social skills play a role in collaborative project-based learning? Impact of the distribution of perceived social skills within learning groups in a Computer Supported Collaborative Learning- setting: An empirical pilot study. *Learning in the Disciplines: ICLS 2010 Conference Proceedings - 9th International Conference of the Learning Sciences*, 2(January 2010), 288–289.
- Nurhasni, N., Hendrawati, H., & Saniyyah, N. (2014). Sekam Padi untuk Menyerap Ion Logam Tembaga dan Timbal dalam Air Limbah. *Jurnal Kimia VALENSI*, 4(1). <https://doi.org/10.15408/jkv.v4i1.1074>
- OECD. (2016). OECD Economic Surveys. In *OECD Economic Surveys* (Issue October). <https://doi.org/10.1787/9789264064706-uk>
- Panda, S., & Mishra, S. (2007). E-Learning in a Mega Open University: Faculty attitude, barriers and motivators. *Educational Media International*, 44(4), 323–338. <https://doi.org/10.1080/09523980701680854>
- Pham, T. T. T., Le, H. A., & Do, D. T. (2021). The Factors Affecting Students' Online Learning Outcomes during the COVID-19 Pandemic: A Bayesian Exploratory Factor Analysis. *Education Research International*, 2021. <https://doi.org/10.1155/2021/2669098>
- prof. dr. sugiyono. (2011). prof. dr. sugiyono, metode penelitian kuantitatif kualitatif dan r&d. intro (PDFDrive).pdf. In *Bandung Alf*.
- Pujotomo, I. (2017). POTENSI PEMANFAATAN BIOMASSA SEKAM PADI UNTUK PEMBANGKIT LISTRIK MELALUI TEKNOLOGI GASIFIKASI. *Teknik Elektro, Sekolah Tinggi Teknik PLN*, 9(June), 126–135.
- Purnama, P., Dewi, G., & Ratnayani, K. (2015). KAPASITAS ADSORPSI BEBERAPA JENIS KULIT PISANG TERAKTIVASI NaOH SEBAGAI ADSORBEN LOGAM TIMBAL (Pb). *JURNAL KIMIA*, 9(2), 196–202.
- Rahmawati, A. (2019). Analisis Keterampilan Berkolaborasi Siswa SMA Pada

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- Pembelajaran Berbasis Proyek Daur Ulang Minyak Jelantah. *Jurnal Pendidikan Dan Pembelajaran Kimia*, 8(2), 1–15.
- Riduwan, M.B.A. (2012). Skala Pengukuran Variabel-variabel Penelitian. Bandung: Alfabeta
- Riwayati, I., Hartati, I., & Purwanto, H. S. (2014). Adsorpsi Logam Berat Timbal Dan Kadmium Pada Limbah Batik Menggunakan Biosorbent Pulpa Kopi Terxanthasi. *Snast, November*, 211–216.
- Riyanda, A. R., Herlina, K., & Wicaksono, B. A. (2020). Evaluasi Implementasi Sistem Pembelajaran Daring Fakultas Keguruan dan Ilmu Pendidikan Universitas Lampung. *Jurnal IKRA-ITH Humaniora*, 4(1), 66–71. <https://journals.upi-yai.ac.id/index.php/ikraith-humaniora/article/view/669>
- Rovai, A. P. (2002). Development of an instrument to measure classroom community. *Internet and Higher Education*, 5(3), 197–211. [https://doi.org/10.1016/S1096-7516\(02\)00102-1](https://doi.org/10.1016/S1096-7516(02)00102-1)
- Sadikin, A., & Hamidah, A. (2020). Pembelajaran Daring di Tengah Wabah Covid-19. *Biodik*, 6(2), 109–119. <https://doi.org/10.22437/bio.v6i2.9759>
- Santoso, S. (2014). Statistik Multivariat : Konsep dan Aplikasi dengan SPSS (Edisi Revisi). Jakarta: Elex Media Komputindo.
- Saptoadi, H. (2008). The Best Biobriquette Dimension and its Particle Size. *Asian J. Energy Environ.*, 9(3), 161–175.
- Saragih, & Sehat, A. (2008). Pembuatan dan Karakterisasi Karbon Aktif dari Batubara Riau sebagai Adsorben. *Universitas Indonesia*, 6. pengertian akuntansi biaya
- Shaharane, I. N. M., Jamil, J. M., & Rodzi, S. S. M. (2016). Google classroom as a tool for active learning. *AIP Conference Proceedings*, 1761(June 2018). <https://doi.org/10.1063/1.4960909>
- Shea, P., & Bidjerano, T. (2009). Community of inquiry as a theoretical framework to foster “epistemic engagement” and “cognitive presence” in online education. *Computers and Education*, 52(3), 543–553. <https://doi.org/10.1016/j.compedu.2008.10.007>
- Sholihah, U. (2018). Project – Based Learning (Pjbl) To Improve Students’ Writing Capability. *Science, Engineering, Education, and Development Studies (SEEDS): Conference Series*, 1(1), 57–72. <https://doi.org/10.20961/seeds.v1i1.20278>
- Simanjuntak, M., Bukit, N., Sagala, Y. D. A., Khairani putri, R., Utami, laksmitha zaskya, & Motlan. (2019). Desain Pembelajaran Berbasis Proyek Terhadap 4C. *Jurnal Inovasi Pembelajaran Fisika (INPAFI)*, 7(3), 38–46.
- Sinambela, P. N. (2017). Kurikulum 2013 dan Implementasinya dalam Pembelajaran. *Generasi Kampus*, 6 (2)
- Sipayung, H., Rahmatsyah, Sani, R., Bunawan, & Lubis. (2019). *PENGARUH*

MODEL PEMBELAJARAN COLLABORATIVE INQUIRY TERHADAP KETERAMPILAN 4C SISWA DI SMA. 8(1).

- Siswati, T. I. N. D. (2012). *Energi Alternatif Melalui Konversi Thermal. 12(1), 117–122.*
- Situmorang, M. (2021). *Kimia Lingkungan*. penerbit fakultas matematika dan ilmua pengetahuan alam universitas negeri medan.
- Smadi, O., Parker, S., Gillham, D., & Müller, A. (2019). The applicability of community of inquiry framework to online nursing education: A cross-sectional study. *Nurse Education in Practice, 34*(July 2018), 17–24. <https://doi.org/10.1016/j.nepr.2018.10.003>
- Soleh, A. R., & Arifin, Z. (2021). Integrasi Keterampilan Abad 21 dalam Peembangan Perangkat Pembelajaran pada Konsep Community of Inquiry. *Qalamuna - Jurnal Pendidikan, Sosial, Dan Agama, 13(2), 473–490.* <https://doi.org/10.37680/qalamuna.v13i2.995>
- Sugiyono. (2009). *Metode Penelitian Kualitatif Kuantitatif dan R&D*. Bandung : Alfabeta
- Sugiyono. (2011). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta
- Sugiyono. (2012). *Metode Penelitian Kuantitatif Kualitatif R&D*. Bandung: Alfabeta
- Sugiyono. (2013). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Sujarweni, Wiratna. (2014). *Metodologi penelitian: Lengkap, praktis, dan mudah dipahami*. Yogyakarta: PT Pustaka Baru
- Susanti, E., & Arista, A. (2019). Analisa Tingkat Pengetahuan Guru terhadap Kompetensi 4C. *Prosiding Seminar Nasional Ilmu Sosial Dan Teknologi (SNISTEK), September, 73–78.* <http://ejournal.upbatam.ac.id/index.php/prosiding/article/view/1509>
- Swan, K., Garrison, D. R., & Richardson, J. C. (2009). A constructivist approach to online learning: The community of inquiry framework. *Information Technology and Constructivism in Higher Education: Progressive Learning Frameworks, January, 43–57.* <https://doi.org/10.4018/978-1-60566-654-9.ch004>
- Syarifuddin, Setyosari, P., Sulton, Kuswandi, D., & Sartika, D. (2020). The effect of the community of inquiry (COI) learning model and learning style towards social skills. *European Journal of Educational Research, 9(2), 569–578.* <https://doi.org/10.12973/eu-jer.9.2.569>
- Tantri, N. R. (2018). Kehadiran Sosial Dalam Pembelajaran Daring. *Jurnal Pendidikan Terbuka Dan Jarak Jauh, 19(2010), 19–30.*
- Topping, K. (1998). Peer assessment between students in colleges and universities.

- Review of Educational Research*, 68(3), 249–276.
<https://doi.org/10.3102/00346543068003249>
- Triarisanti, R., & Purnawarman, P. (2019). the Influence of Interest and Motivation on College Students' Language and Art Appreciation Learning Outcomes. *International Journal of Education*, 11(2), 130.
<https://doi.org/10.17509/ije.v11i2.14745>
- Ugheoke, I. B., & Mamat, O. (2012). A critical assessment and new research directions of rice husk silica processing methods and properties. *Maejo International Journal of Science and Technology*, 6(3), 430–448.
<https://doi.org/10.14456/mijst.2012.31>
- Van den Bossche, P., Gijselaers, W., Segers, M., Woltjer, G., & Kirschner, P. (2011). Team learning: Building shared mental models. *Instructional Science*, 39(3), 283–301. <https://doi.org/10.1007/s11251-010-9128-3>
- Vanada, D. (2014). Practically Creative: The Role of Design Thinking as an Improved Paradigm for 21st Century Art Education. *Techne Series: Research in Sloyd Education and Craft Science A*, 21(2), 20–33.
- Vaughan, N., & Garrison, R. (2006). How Blended Learning Can Support a Faculty Development Community of Inquiry. *Online Learning*, 10(4).
<https://doi.org/10.24059/olj.v10i4.1750>
- Wahyudi, A., Wiranegara, D. A., & Bagus, K. P. (2020). Utilizing collaborative works: an attempt to enhance learners' participation in English class. *JETLe (Journal of English Language Teaching and Learning)*, 1(2), 1.
<https://doi.org/10.18860/jetle.v1i2.8897>
- Wardhana, W. (2004). *Dampak pencemaran lingkungan / Wisnu Arya Wardhana*. Yogyakarta: Andi
- Wibawanto, T. (2020). Pemanfaatan video conference dalam pembelajaran tatap muka jarak jauh dalam rangka belajar dari rumah. *Jurnal Teknologi Pendidikan*, 1(1), 1–9.
- Widiyanto, Joko. 2010. SPSS For Windows. Surakarta: Muhammadiyah University Press.
- Yuliana, N. (2018). Penggunaan Model Pembelajaran Discovery Learning Dalam Peningkatan Hasil Belajar Siswa Di Sekolah Dasar. *Pedagogi: Jurnal Ilmu Pendidikan*, 18(2), 56. <https://doi.org/10.24036/fip.100.v18i2.318.000-000>
- Zambrano, J., Kirschner, F., Sweller, J., & Kirschner, P. A. (2019). Effects of group experience and information distribution on collaborative learning. *Instructional Science*, 47(5), 531–550. <https://doi.org/10.1007/s11251-019-09495-0>