

## DAFTAR PUSTAKA

- Adyawati, N. (2011). Pembelajaran Berbasis Proyek Untuk Meningkatkan Kreativitas dan Hasil Belajar Tentang Hidangan Bali. *Pendidikan dan Pengejaran*, 44(1-3): 52-59.
- Arbuthnot, K. (2009). Education for Sustainable Development Beyond Attitude Change. *International Journal of Sustainability in Higher Education*, 10(2), 152-163.
- Barth, M., Godemann, J., Rieckmann, M., & Stoltenberg, U. (2007). Developing key competencies for sustainable development in higher education. *International Journal of Sustainability in Higher Education*, 8(4), 416-430. <https://doi.org/10.1108/14676370710823582>
- Bell, S. (2010). Project-Based Learning for the 21st Century: Skill for the Future. *The Clearing House: A Journal of Education Strategies, Issue and Ideas*, Vol 83, 39-43.
- Boix Mansilla, V., & Bughin, J. (2011). Educating for Global Competence: Preparing Our Youth to Engage the World. In E. Omerso (Ed.), *Asia Society*. New York.
- Brundiers, K., Barth, M., Cebrián, G., Cohen, M., Diaz, L., Doucette-Remington, S., Dripps, W., Habron, G., Harré, N., Jarchow, M., Losch, K., Michel, J., Mochizuki, Y., Rieckmann, M., Parnell, R., Walker, P., & Zint, M. (2021). Key competencies in sustainability in higher education—toward an agreed-upon reference framework. *Sustainability Science*, 16(1), 13-29. <https://doi.org/10.1007/s11625-020-00838-2>
- Burmeister, M., & Eilks, I. (2012). An example of learning about plastics and their evaluation as a contribution to Education for Sustainable Development in secondary school chemistry teaching w. *Chem. Educ. Res. Pract*, 13, 93-102.

<https://doi.org/10.1039/c1rp90067f>

Burmeister, M., Rauch, F., & Eilks, I. (2012). Education for Sustainable Development (ESD) and chemistry education. In *Chemistry Education Research and Practice*. Royal Society of Chemistry, 13(2), 59–68.

<https://doi.org/10.1039/c1rp90060a>

Cebrian, G., & Junyen, M. (2005). Competencies in education for sustainable development: Exploring the student teacher views. *Sustainability*, 7, 2768-2786.

Dariah, A. R. (2016). A New Approach for Sustainable Development Goals in Islamic Perspective. In *3rd Global Conference on Business and Social Science*, 219, 59–166.

Daub, C., Hasler, M., Verkuil, A. H., & Milow, U. (2020). Universities talk , students walk : promoting innovative sustainability projects. *International Journal of Sustainability in Higher Education*, 21(1), 97–111.  
<https://doi.org/10.1108/IJSHE-04-2019-0149>

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment*, 11(2), 130–141.  
<https://doi.org/10.1002/bse.323>

Farida, E.R & Kumoro, A.C. (2013). Penurunan Kadar Kafein dan Asam Total Pada Biji Kopi Robusta Menggunakan Teknologi Fermentasi Anaerob Fakultatif Dengan Mikroba Nopkor. *Teknologi Kimia*, 2(2), 70-75.

Fibonacci, A. (2012). Peningkatan Hasil Belajar Ipa Siswa Kelas X Tkr 1 Smk N 7 Semarang Melalui Joyful Learning Menggunakan Game Guess My Word. *Jurnal Penelitian Pendidikan Unnes*, 29(2), 93-100.  
<https://doi.org/10.15294/jpp.v29i2.5650>

- Fletcher, G. J. O., Simpson, J. A., & Thomas, G. (2000). Ideals, perceptions, and evaluations in early relationship development. *Journal of Personality and Social Psychology*, 79(6), 933–940. <https://doi.org/10.1037/0022-3514.79.6.933>
- Genc, M. (2015). The project-based learning approach in environmental education. *International Research in Geographical and Environmental Education*, 24(2), 105–117. <https://doi.org/10.1080/10382046.2014.993169>
- Gilbert, R., Stevenson, D., Girardet, H., & Stren, R. (2013). Making cities work: The role of local authorities in the urban environment. In *Earthscan Library collection*, London: Sterling
- Glesser, H., & Hirsh, J. (2016). *Toward the Development of Robust Learning for Sustainability Core Competencies*. *Sustainability*, 9(4), 121-134. <https://doi.org/10.1089/SUS.2016.29054>
- Hamalik, O. (2002). Pendidikan Guru Berdasarkan Pendekatan Kompetensi . Jakarta : PT Bumi Aksara.
- Hargraves, A. (2000). Four Ages of Profesionalism and Professional Learning . *Teacher and Teaching*, 6(2), 151-182.
- Harting, Matthew R., & Declan Fahy. (2011). Communicating Chemistry for Public Engagement. *Nature Chemistry*, 3, 674-677.
- Hofstein, A., Eilks, I., & Bybee, R. (2011). Societal issues and their importance for contemporary science education-a pedagogical justification and the state-of-the-art in Israel, Germany, and the USA. *International Journal of Science and Mathematics Education*, 9(6), 1459–1483. <https://doi.org/10.1007/s10763-010-9273-9>
- Hofstein, A., & Kesner, M. (2006). Industrial Chemistry and School Chemistry : Making chemistry studies more relevant. *International Journal of Science*

*Education*, 28(9), 1017–1039. <https://doi.org/10.1080/09500690600702504>

Indratim D. A., & Hariadi, P.P. (2016). ESD (Education for Sustainable Development) melalui Pembelajaran Biologi. *Prosiding Symbion Symposium on Biology Education*, 317-382.

Ishartono, & Raharjo, S.T. (2012). Sustainable Development Goals (SDGs) dan Pengentasan Kemiskinan . *Share: Social Work Jurnal*, 1-15.

Jegstad, K.M., & Sinnes, A. T. (2015). Chemistry Teaching for the Future: A Mode for Secondary Chemistry Education for Sustainable Development. *International Journal of Science Education* , 37(4), 655-683.

Juntunen, M. & Aksela, M. (2012). Education for Sustainable Development in Chemistry-Challenges, Possibilities, and Pedagogical Models in Finland and Elsewhere. *Chemistry Education Research and Praticce*, 1-15.

Juntunen, M. (2015). Holistic and Inquiry-based education for sustainable development in chemistry. In *Department of Chemistry, Faculty of Science, University of Helsink*. Department of Chemistry, Faculty of Science, University of Helsink.

Kamdi, W. (2006). Pembelajaran Berbasis Proyek Model Potensial untuk Peningkatan Mutu Pembelajaran. *Online* <http://lubisgrafura.wordpress.com/2006/09/23>.

Kioupi, V., & Voulvoulis, N. (2019). Education for sustainable development: A systemic framework for connecting the SDGs to educational outcomes. *Sustainability (Switzerland)*, 11(21). <https://doi.org/10.3390/su11216104>

Komasinski, A., Ishimura, G., & \*\*, 石). (2017). Critical Thinking and Normative Competencies for Sustainability Science Education サステイナビリ

ティ学教育に対するクリティカル・シンキング的と規範的コンピテンシ  
ー. *J. Higher Education and Lifelong Learning*, 24.

Lambrechts, W., Mulà, I., Ceulemans, K., Molderez, I., & Gaeremynck, V. (2013). The integration of competences for sustainable development in higher education: An analysis of bachelor programs in management. *Journal of Cleaner Production*, 48, 65-73. <https://doi.org/10.1016/j.jclepro.2011.12.034>

Laszlo, P. (2006). On the Self-Image of Chemist, 1950-2000. *International Journal for Philosophy of Chemistry*, 12(1), 99-130.

Leal Filho, W., Shiel, C., & Paço, A. (2016). Implementing and operationalising integrative approaches to sustainability in higher education: the role of project-oriented learning. *Journal of Cleaner Production*, 133, 126–135. <https://doi.org/10.1016/j.jclepro.2016.05.079>

Listiawati, N. (2011). Relevansi Nilai-nilai ESD dan Kesiapan Guru dalam Mengimplementasikannya di Sekolah. *Jurnal Pendidikan dan Kebudayaan*, 17(2), 135-152.

Mageswary, K. Z. (2006). Greening the high school chemistry curriculum to address education for sustainable development. *Proceedings for The International Science Education Conference 2006-series Education: What Works* ( 404-13). Singapore: Nanyang Technological University.

Malandrakis, G. P. (n.d.). An education for sustainable development self-efficacy scale for primary per-service teacher construction and validation. *The Journal of Environment Education*. 50(1), 23-36.

Moehariono. (2009). Pengukuran Kinerja Berbasis Kompetensi. Jakarta: PT. Ghalia Indonesia.

- Mukhadis, A. (diakses 20 mei 2020). Sosok Manusia Unggul dan Berkarakter Dalam Bidang Teknologi Sebagai Tuntutan Hidup di Era Globalisasi (online). <http://journal.uny.ac.id/index.php/jpka/article/view/1434>.
- Muliawati. (2010). Kelebihan dan Kelemahan Pembelajaran Berbasis Proyek . *Online at <http://id.shvoong.com/social-sciences/education/2197626>*.
- Nurhidayah, B., & Suryadi, A. . (2014). Pelatihan Berbasis Konsep Pendidikan untuk Pembangunan Berkelanjutan dalam Peningkatan Mutu Layanan Play Tutor di Komunitas Sahabat Kota Bandung. *Jurnal Pendidikan Luar Sekolah*, 10(2), 1-9.
- Palmberg, I., Bergholm, M. H., Jeronen, E., & Yli-Panula, E. (2017). Systems Thinking for Understanding Sustainability? Nordic Student Teachers' Views on the Relationship between Species Identification, Biodiversity and Sustainable Development. *Teaching Methods in Science Subjects Promoting Sustainability*, 7(72), 42–59. <https://doi.org/10.3390/books978-3-03842-651-6>
- Paraskeva, F., Karampa, V., Brinia, V. (2020). A constructivist Conceptual Framework for Smart Learning and Education. In F. K. Paraskeva, *Sustainable Development in Higher Education* (p. 18 ). Boca Raton: CRC Press.
- Perkasa, M., Agrippina, & Wiraningtyas. (2017). Sustainable Chemistry Oriented on Chemistry Learning to Increase Student Awareness to the Environment. *Jurnal Sainsmat*, VI(2), 63–72.
- Portal, C., Launay, D., Merritt, A., & Bradley, M. (2005). High throughput physical organic chemistry: Analytical constructs for monomer reactivity profiling. *Journal of Combinatorial Chemistry*, 7(4), 554–560. <https://doi.org/10.1021/cc050013e>
- Rieckmann, M. (2012). Future-oriented higher education: Which key competencies

should be fostered through university teaching and learning? *Futures*, 44(2), 127–135. <https://doi.org/10.1016/j.futures.2011.09.005>

Samana. (1991). *Profesionalisme Lingkungan Hidup*. Jakarta : PT. Rineka Cipta.

Segara, N. (2015). Education for Sustainable DEvelopment (ESD) sebuah upada mewujudkan Kelestarian Lingkungan . *Sosial Didaktika: Social Science Education Journal* , 2(1): 22-30.

Setiadi, R. Jawoto, S. Sophianingrum, M., Rosalia, D. . (2008). Indikator Pembangunan Berkelanjutan Kota Semarang. *Riptek*, 1(2), 1-15.

Silvius, A. J. G., & Schipper, R. (2010). *A Maturity Model for Integrating Sustainability in Projects and Project Management BT - 24th World Congress of the International Project Management Association (IPMA)*. Netherland.

Singh-Pillay, A. (2020). Pre-service Technology Teachers' Experiences of Project Based Learning as Pedagogy for Education for Sustainable Development. *Universal Journal of Educational Research*, 8(5), 1935–1943. <https://doi.org/10.13189/ujer.2020.080530>

Sipos, Y., Battisti, B., & Grimm, K. (2008). Achieving transformative sustainability learning: Engaging head, hands and heart. *International Journal of Sustainability in Higher Education*, 9(1), 68–86. <https://doi.org/10.1108/14676370810842193>

Sleurs, W. (2008). Competencies for ESD (Education for Sustainable Development) teachers. A framework to integrate ESD in the curriculum of teacher training institutes. In Willy Sleurs (Ed.). Brussel: CSCT Project.

Sudarmanto. (2009). *Kinerja dan Pengembangan Kompetensi SDM*. Yogyakarta: Pustaka Pelajar.

Sumanjuntak, F. (2017). Pendidikan untuk Pembangunan Berkelanjutan. *JDP*, 10(3), 304-331.

Syaifurrahman, & Ujiati, T. (2013). Manajemen dalam Pembelajaran . Jakarta: PT. Indeks.

Syakur, A. (2017). Education for Sustainable Development (ESD) Sebagai Respon Baru dari Isu Tantangan Global Melalui Pendidikan Berkarakter dan Berwawasan Lingkungan yang Diterapkan pada Sekolah Dasar, Sekolah Menengah dan Kejuruan di Kota Malang. *Eduscience: Jurnal Pendidikan dan Sains*, 1(1), 37-47.

Tristananda, P. (2018). Membumikan Education for Sustainable Development (ESD) di Indonesia dalam Menghadapi Isu-isu Global . *Jurnal Puwadita*, 2(2), 42-49.

UNESCO. (2020). Build back better: Education must change after COVID-19 to meet the climate crisis. In 18.06.2020. <https://en.unesco.org/news/build-back-better-education-must-change-after-covid-19-meet-climate-crisis>

UNESCO. (2005). *World decade of education for sustainable development*. Retrieved from <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/> . .

UNESCO. (2005a). *United Nation Decade of Education for Sustainable Development (2005-2014): Implementation Scheme*. UNESCO.

UNESCO. (2005b). *Guidelines and Recommendation for Reorienting Teacher Education to Address Sustainability: Education for Sustainable Development in Action, Technical Paper N 2*. Paris: UNESCO.

UNESCO. (2010). *Teaching and Learning for a Sustainable Future*. Retrieved from <http://www.unesco.org/education/tlsf>

UNESCO. (2014b). Retrieved from Roadmap for Implementing the Global Action Programme on Education for Sustainable Development: <http://en.unesco.org/gap>

UNESCO. (2018). *Education for sustainable development*. Retrieved from <http://en.unesco.org/themes/education-sustainable-development> .

United Nations. (2018). *Water, Food and Energy/UN-Water*. <http://www.unwater.org/water-facts/water-food-and-energy/>

Uno, Hamzah B., Lamatenggo, Nina. (2016). *Tugas Guru Dalam Pembelajaran: Aspek yang Mempengaruhi* . Jakarta: PT. Bumi Aksara.

Vardon, D. R., Moser, B. R., Zheng, W., Witkin, K., Evangelista, R. L., Strathmann, T. J., Rajagopalan, K., & Sharma, B. K. (2013). Complete utilization of spent coffee grounds to produce biodiesel, bio-oil, and biochar. *ACS Sustainable Chemistry and Engineering*, 1(10), 1286–1294. <https://doi.org/10.1021/sc400145w>

Wheeler, S. F., & Harvey, D. J. (2000). Negative ion mass spectrometry of sialylated carbohydrates: Discrimination of N-acetylneuraminic acid linkages by MALDI-TOF and ESI-TOF mass spectrometry. *Analytical Chemistry*, 72(20), 5027–5039. <https://doi.org/10.1021/ac000436x>

Wiek, A, Mj, B., Rw, F., Cohen, M., Forrest, N., Kuzdas, C., Kay, B., Wiek, A., Bernstein, M. J., Foley, R. W., Cohen, M., Forrest, N., Kuzdas, C., Kay, B., & Keeler, L. W. (2016). Operationalizing Competencies in Higher Education for Sustainable Development. In M. Barth, G. Michelsen, M. Rieckmann, & I. Thomas (Eds.), *Routledge Book of Higher Education for Sustainable Development*, Issue January, pp. 241–260. New York: Routledge.

Wiek, Arnim, Withycombe, L., & Redman, C. L. (2011). Key competencies in

sustainability: A reference framework for academic program development. *Sustainability Science*, 6(2), 203–218. <https://doi.org/10.1007/s11625-011-0132-6>

Wiek, Arnim, Withycombe, L., Redman, C., & Mills, S. B. (2011). Moving forward on competence in sustainability research and problem solving. *Environment*, 53(2), 3–13. <https://doi.org/10.1080/00139157.2011.554496>

WIT. (2014). *Water-Energy-Food Nexus\_World Information Transfer*. <https://Witnewyork.Wordpress.Com/2014/06/05/Water-Energy-Food-Nexus/>.

