

Education for Sustainability (EfS) for Indonesian Higher Education: A Literature Review

Nuur Insan Tangkelangi

Universitas Cokroaminoto Palopo, Indonesia

nuurinsan@uncp.ac.id

Abstract

Indonesia currently faces various problems in multiple aspects: social, economic, and environment. The problems become complex because they are interconnected each other. Due to this complexity, it is crucial to find a solution to overcome those problems. The concept of sustainability focusing on creating sustainable development in various aspects (social, economic, and environment) can be appropriate to be adapted. Then, to internalize the concept into a country, education is the best medium since it can build societies' awareness on the importance of this concept and change their perceptions, attitudes, and behaviours. The internalization of sustainability concept in education is called Education for Sustainability (EfS) which adapts sustainability in institution management and curriculum. To show the opportunities of EfS implementation in Indonesia, challenges and solutions of EfS implementation in other countries are firstly discussed in this article followed by how EfS can be applied in Indonesian universities. At the end, conclusion and recommendations related to EfS implementation in Indonesian universities are proposed.

Keywords/Kata Kunci: *Education for sustainability, higher education, Indonesian context*

Introduction

Indonesia currently faces various problems in multiple aspects: social, economic, and environment. In social aspect, the significant increase of population is the most influential factor that causes problems in other aspects. Data from Indonesian Central Bureau of Statistics (2012) shows that the number of people in Indonesia increase by 24.58% within twenty years which promotes various problems to emerge since it indicates that more people need to fulfil their primary and tertiary needs. Moreover, it is revealed that Indonesia lost approximately 498 thousand hectares of forest each year from 2000-2010 (World Food Agency, 2011, as cited in Widjajanti, Matakupan, & Didham, 2014) and 727 thousand hectares in 2012-2013 (Indonesian Ministry of Environment and Forestry, 2015). This condition is not only caused by unintentional fire, but also by illegal logging to satisfy the societies' needs; food, space to live, and employment (Priyanto, Djati, Soemarno, & Fanani, 2013). Furthermore, Asian Development Bank (2014) reports that due to the dependency of the Indonesian societies on coral reefs, currently 32% of Indonesian coral reefs are in poor condition and 37% are moderate. Besides, Indonesia also has problems on a massive increase of urbanization which promotes the change of land use in cities. Residents who move to cities

but cannot afford land in the central of the cities choose to build houses around the rivers, marsh, and city forests (Mulyadi et al., 2015). As the results, the rivers contain much household waste and the temperature of the cities is high due to the lack of city forests which are cleared to provide space for houses, offices, and industries.

Looking at the complex problems faced by Indonesia which are interconnected each other, it is crucial to find a solution to overcome those problems. The concept of sustainability focusing on creating sustainable development in various aspects (social, economic, and environment) can be appropriate to be adapted (Janeiro, 1992, as cited in Listiswati, 2013; Segara, 2015; Widjajanti, Matakupan, & Didham, 2014). To internalize the concept into a country, education is the best medium since it can build societies' awareness on the importance of this concept and change their perceptions, attitudes, and behaviours (Priyanto et al., 2013).

The internalization of sustainability concept in education is called Education for Sustainability (EfS) which adapts sustainability in institution management and curriculum. This EfS concept has been implemented in Indonesian elementary and secondary schools (Listiawati, 2013; Priyanto et al., 2013), but not in higher education yet. This condition is not in line with the roles of universities for communities around. Talloires Declaration, 1990, as cited in Morris (2016) states that universities have "responsibilities to increase the awareness, knowledge, technologies, and tools to create an environmentally sustainable future" (p. 6). These responsibilities emerge because higher education is the place to prepare better stakeholders for the future. Looking at the gap between the important roles of universities and the absence of EfS concept in Indonesian universities, it is argued that EfS should be implemented in Indonesian higher education. To show the opportunities of EfS implementation in Indonesia, challenges and solutions of EfS implementation in other countries are firstly discussed in this article followed by how EfS can be applied in Indonesian universities. At the end, conclusion and recommendations related to EfS implementation in Indonesian universities are proposed.

Challenges and Opportunities of EfS Implementation

EfS is not a new concept for other countries. Environmental education has taken part in Australia for more than thirty years (Gough & Sharpley, 2005). Issues on environment and education were widely discussed in Australia for the first time in a conference entitled "Education and the Environment Crisis" held by the Australia Academic of Science in 1970. Moreover, the concept of "Educating for a Sustainable Future" released in the first year of the United Nations Decade of Education for Sustainable Development in 2005 (Gough & Sharpley, 2005) is highly recommended to be implemented by the members of United Nations (UN) which currently reach 193 states. This is the period when many countries began implementing sustainability concept in their education with various names: Education for Sustainable Development (ESD), Education for Sustainability (EfS), and Learning for a Sustainability Future (LSF) (Smith, 2015).

In implementing sustainability concept in higher education, various challenges are faced. The high number of the challenges in implementing Higher Education for Sustainability (HEfS) indicates that it might be hard to apply the concept, but it is inevitable that sustainability is

the most suitable solution for the various problems faced worldwide. The following paragraphs present the challenges and the ways to anticipate and to overcome the barriers which are divided into three major types: defining sustainability, managing the institutions, and internalizing the sustainability concept in curriculum.

Challenge and solution in defining sustainability

Among all challenges discussed in this article, the most crucial one is how to define sustainability. This barrier contributes to the emerge of other challenges both in institutional management and curriculum implementation. In defining sustainability, some people perceive it as a concept that only focuses on growing green, while others perceive sustainability in a broader way covering social and economic issues (McFarlane & Ogazon, 2011). This different view contributes to the different practices in the implementation. Once a university perceives sustainability as a concept which merely focus on environmental issues, the programs provided will be merely concerned on reaching sustainable environment. This condition is not the ideal one since the problems faced by the whole world currently is not only related to environmental issues, but also social and economic issues which are interconnected each other. Therefore, the primary challenge that should be firstly handled before implementing HEfS is the scope in defining the term of sustainability development.

To anticipate the misunderstanding in defining sustainability, all staff, educators, and students should have clear and comprehensive understanding on the concept. Two directions namely bottom-up (academic staff and or student driven) and top-down (university management driven) can be the way to comprehensively internalize the concept in an institution and the combination of them is identified as the best solution: top-down direction supported by bottom-up direction (Higgins and Thomas, 2016). Thus, all management staff of the university are expected to clearly define the sustainability concept which is then followed by the educators' and the students' comprehension.

Challenges and solutions on managing institution

After defining sustainability concept clearly and comprehensively, the next challenges that should be tackled are related to how to run institution by internalizing sustainability concept. Regarding the implementation of sustainability concept in managing the institutions, twelve challenges are mentioned by Velazquez, Munguia, and Sanchez (2005), namely: "lack of awareness, interest, and involvement; less ready organisational structure for sustainability; lack of funding; lack of time; lack of data access; lack of opportune communication and information; resistance to change; profits mentality; lack of rigorous regulations; lack of policies to promote sustainability; and technical problems" (p. 385). From all these twelve barriers, the conventional organisational structure and the lack of concern from the university community are the most challenging issues that should be tackled. To overcome these challenges, Higgins and Thomas (2016) state that the organisational structure of the institution should be prepared to produce a supportive management in the institution. Therefore, the institution should be managed by people who know well about sustainability and numerous training on it can be also provided for them who do not comprehend the concept well.

Once the barriers of organisational structure and lack of concern come together, other obstacles might be worse. Projects and programs promoting sustainability might be hard to conduct since the community does not comprehensively understand and does not have any interest in the importance of sustainability. Funding support from the institution and involvement of the university staff, educators, and students might be difficult to gather. These individuals might not devote their time to give any contribution and resist to change. Furthermore, building communication and sharing information among departments in relation to the implementation of sustainability across curriculum through programs and projects might be hard to do. Thus, out of twelve challenges identified by (Velazquez et al., 2005) above, conventional organisation structure and lack of awareness, interest, and involvement are the two obstacles that should be firstly overcome by building the awareness of all parties, particularly the officials, on the importance of HEfS for the future. Once, the rector or the director of the university, the deans of all faculties, and the head of study program are aware on the benefits of HEfS, the other staff, educators, and students might easily follow their steps (Saito, Hawe, Hadiprawiroc, & Empedhe, 2008).

Challenges and the solutions on curriculum internalization

Turning to the implementation of sustainability on curriculum, lack of time to design and to implement curriculum with multidisciplinary concept and a dilemma in prioritizing learning focus are identified as the challenges (Gale, Davison, Wood, Williams, & Towle, 2015; Velazquez et al., 2005). In relation to the lack of time, both university staff and educators do not have time to conduct projects and programs on sustainability because of their current duties (Velazquez et al., 2005). Moreover, due to the density of the current curriculum, educators have less time as well to design and to implement a new curriculum which needs to involve multi-disciplines (Gale et al., 2015). Furthermore, the three dimensions of sustainability concept covering social, economic, and environmental issues are not equally concerned in every subject which becomes a barrier to internalize the full concept of sustainability in all subjects (Gale et al., 2015). Then, the last challenges related to the implementation of sustainability concept in curriculum is a dilemma in preparing the students for their future: whether their learnings should be focused on how to deal with economic crisis or how to contextualize sustainable development is still a confusing point (Gale et al., 2015).

To overcome the barriers above, the solution suggested for the challenges related to the management system which is discussed in the previous section can be utilized. All parties including staff, students and especially the educators should comprehensively and clearly understand the importance of HEfS. Therefore, the challenges of the lack of time to design and to implement the curriculum and the dilemma in learning priority can be resolved when all educators within the institution have the same understanding, vision and mission related to the implementation of HEfS in the institution.

Referring to the description of the challenges and the opportunities above, it can be concluded that even though some challenge takes place, the solutions for those problems are there. Therefore, looking at the opportunities to implement HEfS and the importance of this concept, HEfS is highly recommended to be implemented in all countries around the world, especially in Indonesia which currently faces various problems in multi different aspects. The

explanation of how HEfS might be implemented in Indonesia is presented in the following section.

Implementing HEfS in Indonesia

Since EfS is not a new concept in Indonesia, implementing HEfS might not be significantly challenging. This section presents some important points related to how to implement the sustainability concept in running Indonesian university institutions and internalizing sustainability in curriculum.

Managing the institution

In implementing sustainability concept in a university, it will be effective if the concept is applied in all aspects and involves all parties within the institution (Gough & Sharpley, 2005). In this case, the aspects refer to the institution management, the projects and the programs provided in the university, while the parties refer to the university community including the staff, educators, and students. This issue is related to one of the challenges discussed previously, namely how to define sustainability and the lack of awareness, interest, and involvement of the university community. The clear understanding about sustainability of all community members should be concerned since it will influence the practices done in the future. Furthermore, Regarding the lack of awareness, interest, and involvement of community members, three points are covered in this barrier which is related each other: once the community are aware of the significances of sustainable development, it might draw their attention and be interested in the EfS implementation. Once those two first points have been tackled, the community's active involvement in the programs and the projects of sustainable development will be stimulated. Therefore, the officials including the rector or the director of the university, the deans of all faculties, and the head of study program should be firstly concerned since it might stimulate the other community members' active involvement (Saito et al., 2008).

Internalizing sustainability in curriculum

Even though EfS is not a new concept in Indonesia, a study conducted by Listiawati (2013) indicates that the sustainability concept practiced in projects and programs by some formal and non-formal institutions in Indonesia including at elementary and secondary schools merely focuses on environmental issues. Therefore, to anticipate the same cases in implementing HEfS, three options of curriculum model can be utilized, namely sustainability across curriculum, full programs, and opt-in.

Sustainability across curriculum refers to the implementation of EfS by proving units which discuss sustainability development in all courses within the institution (Catholic Education Melbourne, 2010). This model is also known as subject-based model (Dyment, Hill, & Emery, 2015). In its practice, all students are required to take some units related to sustainability development which are:

- “... (1) providing students with basic understanding of the concept of sustainability;
- (2) understanding sustainability and its importance to human and environment; (3)

describing and explaining examples of sustainable practices in operations management across various industries, and business in general; (4) citing examples of sustainability practices in personal and community settings; (5) developing an appreciation of the challenges and rewards of sustainability and sustainability education; and (6) understanding the history and development of sustainable practices.” (McFarlane & Ogazon, 2011, pp. 100-101)

In this occasion, students from all departments of the university will have fundamental understanding on sustainability which can be better if the issues discussed in their classes are modified based on their fields of study. This curriculum model can be a suitable model for Indonesia since it prepares university students to internalize sustainability in their future jobs. Then, in the future, it is expected that it contributes to find solutions for the various problems which currently emerge in Indonesia. Furthermore, this contextual learning might be more optimal if sustainability is added as one of the core values which is discussed in each unit provided by all departments (Dyment et al., 2015). Thus, the sustainable development issues are discussed in all units.

Another option of EfS implementation in higher education is full program which refers to independent courses offered by the university. One of the example courses is Sustainable Business which are provided for graduate and undergraduate degrees by Bainbridge Graduate Institute (McFarlane & Ogazon, 2011). As the result, the students who graduate from those degrees internalize the context of sustainable development in their professionalism contexts. However, once an institution merely applies this model, sustainable development concept is only discussed by the students who choose the sustainability courses, while the other students who choose the regular ones might not learn about sustainability.

The final option for EfS implementation model is opt-in. In this model, sustainability concept is internalized in extracurricular programs providing opportunities for the students to participate in various practices which promote the sustainable development (Dyment et al., 2015). In Indonesia, university students have big opportunities to conduct events such as workshops and seminars for society around. It can be a medium to spread the importance of sustainability concept to the communities and invite them to do sustainability practices in everyday life. However, since opt-in is an extracurricular model, it does not require all students to join, only them who are interested in the programs. Moreover, since the programs are designed to fit all students within the university not specifically concerned on an area of study. Consequently, the students might not get comprehensive understanding of the sustainability concept in their expertise. This condition might not contribute much on the internalization of the concept in their professionalism in the future.

Beside of the curriculum models, other components that should be also considered are units provided and teaching approaches. Providing units concerning on certain issues on sustainability contributes better on the students’ understanding compared to providing more units with superficial content (Fisher & McAdams, 2015). Furthermore, regarding the teaching approach, it is suggested that teaching-learning activities designed should promote “transformative, learner-centred, constructivism, and social critical learning modes” (Bedi & Germein, 2016, p. 126) to reach the learning outcomes which focus on the students’ comprehensive understanding on sustainability concept based on their fields of study.

Referring to the explanation above, it can be concluded that it is important to ponder curriculum models, units provided, and teaching approaches in implementing HEfS in Indonesia as those components influence the outcomes. Focusing on curriculum model, it is suggested to implement the sustainability across curriculum model while keep applying the two other models to maximize the outcomes. The sustainability across curriculum model enables all students from all departments to learn about sustainable development. Meanwhile, full program and opt-in models give opportunities to the students, who are interested in the courses and the programs provided, to explore more about sustainability. The implementation of these three models can lead to the comprehensive understanding of all students on sustainable development across their fields of study which then contributes to their attitudes in their future professionalism.

Conclusion

Based on all explanations above, it can be concluded that HEfS should be implemented in Indonesian universities since EfS covering social, economic, and environmental aspects can be the solution for multiple problems faced by Indonesia currently. Even though implementing HEfS might face some challenges which are experienced by other institutions in other countries, some steps to anticipate those barriers can be taken. Then, in implementing HEfS, the first point that should be concerned is the same perspectives of all university community members on the sustainability concept. Moreover, the awareness of the importance of HEfS for the future also should be internalized by all parties. Then, regarding internalizing sustainability in curriculum, three components should be considered: units provided, teaching approach, and curriculum models covering sustainability across curriculum, full programs, and opt-in models.

Looking at the positive points of HEfS which can be the solution for multiple problems of Indonesia, three points are recommended. First, HEfS should be implemented in all universities in Indonesia and should be actively promoted by Indonesian Directorate General of Higher Education. Second, the issues discussed in the units which internalize sustainability should be contextualized based on the students' fields of study. The issues also should be more practical rather than theoretical. Third, to maximize the implementation of HEfS in a university, it is recommended to combine the three models of curriculum. The university can provide courses which internalize sustainability concept in all units or provide some compulsory units related to sustainability in each course. Moreover, full programs which focus on sustainability can be also provided. Then, to give students more opportunities to explore sustainability concept and its practices, on campus organization can be established. Thus, the students will be exposed with sustainability concept and practices during their studies in universities.

Acknowledgment

I want to express my gratitude to the Almighty God who has given us blessing and guidance in finishing article. Moreover, I would also like to express my big thanks to our relatives and friends for their meaningful support. This study would not have been completed without these parties. Thank you very much

References

- Asian Development Bank, A. D. (2014). *State of the coral triangel: Indonesia*. Retrieved from <http://coraltriangleinitiative.org/sites/default/files/resources/SCTR-IN.pdf>.
- Bedi, G., & Germein, S. (2016). Simply good teaching: Supporting transformation and change through education for sustainability. *Australian Journal of Environmental Education*, 32(1), 124-133. <https://doi.org/10.1017/aee.2015.52>
- Catholic Education Melbourne. (2010). *Education for sustainability in the Archdiocese of Melbourne*. Retrieved from <http://www.cem.edu.au/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=22469&libID=22490>.
- Dymment, J. E., Hill, A., & Emery, S. (2015). Sustainability as a cross-curricular priority in the Australian curriculum: A Tasmanian investigation. *Environmental Education Research*, 21(8), 1105.
- Fisher, P., & McAdams, E. (2015). Gaps in sustainability education: The impact of higher education coursework on perceptions of sustainability. *International Journal of Sustainability in Higher Education*, 16(4), 407-423.
- Gale, F., Davison, A., Wood, G., Williams, S., & Towle, N. (2015). Four impediments to embedding education for sustainability in higher education. *Australian Journal of Environmental Education*, 31(2), 248-263. <https://doi.org/10.1017/aee.2015.36>
- Gough, A., & Sharpley, B. (2005). *Educating for a sustainable future*. Carlton: Curriculum Corporation.
- Higgins, B., & Thomas, I. (2016). Education for Sustainability in universities: Challenges and opportunities for change. *Australian Journal of Environmental Education*, 32(1), 91-108. <https://doi.org/10.1017/aee.2015.56>
- Indonesian Central Bureau of Statistics. (2012). Penduduk Indonesia menurut provinsi. Retrieved from <https://www.bps.go.id/linkTabelStatis/view/id/1267>
- Indonesian Ministry of Environment and Forestry. (2015). *Statistik: Kementerian lingkungan hidup dan kehutanan tahun 2014*. Retrieved from www.menlhk.go.id/download.php?file=STATISTIK_2014.pdf.
- Listiawati, N. (2013). Pelaksanaan Pendidikan untuk Pembangunan Berkelanjutan oleh Beberapa Lembaga. *Jurnal Pendidikan Dan Kebudayaan*, 19(3), 430-450. <https://doi.org/10.24832/jpnk.v19i3.302>
- McFarlane, D. A., & Ogazon, A. G. (2011). The challenges of sustainability education. *Journal of Multidisciplinary Research*, 3(3), 81-107.
- Morris, N. A. (2016). *Relocating education for sustainability: From the campus to the community*. (10306824 Ph.D.), Kent State University, Ann Arbor. Retrieved from ProQuest Dissertations & Theses Global database.
- Mulyadi, M., et al. (2015). *Pembangunan berkelanjutan: Dimensi sosial, ekonomi, dan lingkungan*. Jakarta: Azza Grafika.
- Priyanto, Y., Djati, M., S., Soemarno, & Fanani, Z. (2013). Environmental perspective education towards sustainable development. *Wacana*, 16(1).
- Saito, E., Hawe, P., Hadiprawiroc, S., & Empedhe, S. (2008). Initiating education reform through lesson study at a university in Indonesia. *Educational Action Research*, 16(3), 391-406. <https://doi.org/10.1080/09650790802260372>
- Segara, N. B. (2015). Education for sustainable development. *Social Science Education Journal*, 2(1), 22-30.

- Smith, K. (2015). *The status of education for sustainability development (ESD) in the United States*. Retrieved from [https://www.sustainabilityprofessionals.org/sites/default/files/ESD in the United States final.pdf](https://www.sustainabilityprofessionals.org/sites/default/files/ESD%20in%20the%20United%20States%20final.pdf)
- Velazquez, L., Munguia, N., & Sanchez, M. (2005). Deterring sustainability in higher education institutions: An appraisal of the factors which influence sustainability in higher education institutions. *International Journal of Sustainability in Higher Education*, 6(4), 383-391.
- Widjajanti, D., Matakupan, S., & Didham, R. J. (2014). *Pengantar pemahaman pendidikan konsumsi berkelanjutan*. Retrieved from https://pub.iges.or.jp/pub_file/indonesianationalescguidelinesbahasa1pdf/download