



Developing Ethical Awareness Towards a Sustainable Ecosystem Through Character Education in Higher Education

Meitty Josephin Balontia

Email: meitty.josephin@binus.ac.id

Character Building Development Center, School of Computer Science, BINUS University, Jakarta, Indonesia

Abstract

This study explores the impact of character education in developing ethical awareness for ecosystem sustainability, focusing on BINUS University students through a project-based learning approach. The character education in question is education that is based on the principles of Pancasila, which emphasizes the development of ethical behavior, social responsibility, and collective action to maintain a sustainable ecosystem. This study explores the relationship between ethical awareness and ecosystems by analyzing the results of student projects and interviews. The results show that students recognize the importance of collaboration between individuals, governments, and other stakeholders in ensuring environmental sustainability. The main findings highlight three important aspects: collective ethical awareness, shared values, and sustainable benefits. Collective ethical awareness is a universal value where students understand that maintaining an ecosystem requires cooperation and moral responsibility. Shared values, especially those embedded in Pancasila, strengthen students' beliefs that justice for nature is a collective obligation between individuals and institutions. Sustainable benefits refer to the long-term benefits to the environment and society that arise from maintaining a sustainable ecosystem. This study concludes that character education is very important in shaping students' moral perspectives and actions towards environmental conservation. Through project-based learning, students develop a deeper understanding of the complex relationships between human activities and ecosystems, ultimately fostering resilient communities that can cope with rapid environmental change. This research underscores the importance of integrating ethics education into higher education for future environmentally conscious leaders.

Keywords: Sustainable, Ecosystem, Pancasila Values, Project Based Learning, Character Education

INTRODUCTION

In recent years, global attention regarding environmental issues and sustainable ecosystems has been increasing. This can be seen, from one perspective, in the Indonesian government's view during the 61st AALCO (Asian-African Legal Consultative Organization) meeting, where the world is facing a "triple crisis" consisting of climate change, pollution, and the rapid loss of biodiversity (PPID | Kementerian Lingkungan Hidup Dan Kehutanan | Indonesia Serukan 3 Isu Lingkungan Dan Pembangunan Berkelanjutan Di AALCO Ke-61, n.d.). Ecosystem sustainability is not only related to the preservation of natural resources, but a multidimensional aspect that involves social, economic, and cultural factors. Ultimately, this can impact the overall quality of human life.



For the Indonesian nation, the perspective on maintaining sustainable ecosystems is internalized through character education based on Pancasila as the state philosophy, instilled in every citizen. As an example, the first principle of Pancasila, which states "Believe in God," serves as a moral foundation that guides the relationship between humans and God, humans with one another, and humans with the nature they inhabit (Fios & Sudirman, 2020).

Character education becomes a key element in developing ethical awareness to sustain and improve sustainable ecosystems. This brings about a structure of ethical relations, strong morality, and social responsibility. However, this desire needs to be developed within an individual, taking root to become a strong initiative in their daily life. This can be understood through Plato's view of the concept of Eudaimonia, which is based on virtue. Simply put, it can be translated as "happiness." Eudaimonia is manifested as the highest aim of moral thought and behavior, and virtue is the formation of dispositions or abilities to attain it (Price, 2011). In this context, character education can be integrated with an understanding of sustainable ecosystems to shape individuals who not only have scientific knowledge but also find happiness in their moral framework as agents of change, supporting environmentally friendly practices. At higher education, particularly among students, integration of character education and sustainability is important. Students are future assets as individual actors or leaders who will have a significant influence on many levels of society, including the development of ecosystem sustainability. Students are expected to come up with environmentally responsible ideas that not only focus on individual gains but to ensure practices which support the sustainability of ecosystems. However, to create leaders who are environmentally conscious, character education that emphasizes moral and ethical responsibility towards the environment is essential. Students need to understand that an act of success is not only measured by short-term profits in a pragmatic sense, but also by its impact on the environment and society. Character education can shape attitudes and behaviors that support sustainable personal gain, where decisions are made with consideration of their long-term impact on ecosystems.

This article seeks to address the impact of character education in developing ethical awareness in higher education to promote sustainable ecosystems. Through this, it is hoped that a deeper understanding can be gained regarding the role of education in preparing students to become intelligent, well-charactered leaders capable of supporting ecosystem sustainability.

METHOD

Research in this article is conducted through qualitative methods with a phenomenological approach. Creswell in his writing stated that qualitative methods are different than quantitative methods even though there are similarities, qualitative methods relies on texts and visual data, unique data analysis methods, and provide diverse perspectives (J. W. Creswell & Creswell, 2023). It is further stated that qualitative research involves readers in the model and purpose used, discussions on the samples used, and further evolves into data analysis steps and methods used to present the data, which offer potential outcomes of the research. Unlike other methods, qualitative research involves comments on the author's role and personal reflections, as well as the qualitative strategies employed. (J. W. Creswell & Creswell, 2023). Meanwhile, according to Creswell (2013), the phenomenological approach in qualitative research describes the common meaning of several individuals based on their life experiences as a concept or phenomenon. Creswell further explains that the basis of the phenomenological approach is to reduce individual experiences through a described phenomenon into universal essences (J. Creswell, 2013).

Participant of this research are five groups of BINUS University students in Bandung

which underwent character-building education and took sustainable ecosystem as their theme. The groups consist of six to seven members on each group which will undergo a combination of individual and collective experience as a team. Data collection conducted through interviews, observations of their submitted materials, activity reports, as well as other form of documentation such as photos or videos provided by the students. Participants are given two main questions related to their experience based on context and situation influencing those experiences. Data analysis conducted by horizontalization derives from their significant statements, in order to develop clusters of meaning to construct a theme (J. Creswell, 2013). Authors also compile significant statements to describe factors which influencing participants' experiences in relation to phenomenon they experienced (structural description). All these then synthesized into a written description showing the essence of phenomenon. Furthermore, visual representation of the research design will be presented in figure 1 below.

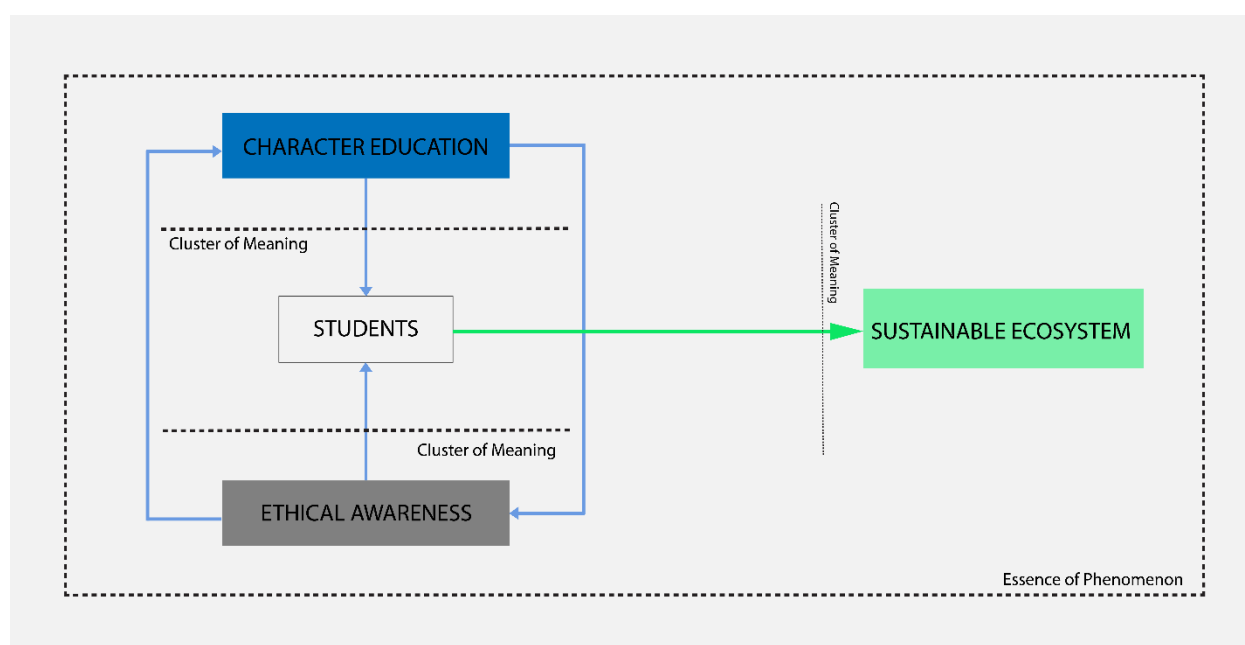


Figure 1 – Research Design

RESULT AND DISCUSSION

Character Education and National Value

Character Education in Bina Nusantara University

Character Education in Bina Nusantara University is a set of mandatory courses which have to be completed by students as part of their university life. Character Education consists of national character building, and spiritual character building to form student's character which intelligent, critical, religious, tolerant, inclusive, ethical, wise, nationalistic, and patriotic (*Character Building – Character Building*, n.d.). In this character-building education, students will undergo and are expected to achieve several learning outcomes, which include:

1. **Comprehension:** To describe Pancasila as the primary foundation for character education. In this outcome, students are expected to form relevant concept and ideas which are complete, consistent and detail, regarding said topic.
2. **Application:** To solve social issues related to the implementation of Pancasila, national life and citizenship, and interfaith relations. In this outcome, students are expected to proposed feasible solutions suits to the context and also affordable.

3. **Analysis:** To analyze the relationship between Pancasila and national life in Indonesia. In this outcome, students are expected to be able to analyse the importance of Pancasila as Indonesian Ideology.
4. **Synthesis:** To compose group reflections on the development of science and technology based on ethical foundations in the implementation of Pancasila in Indonesia. In this outcome, student are expected to demonstrate a conscious and thorough understanding of the given topics, give examples to support their claims and making applicable connections with appropriate and well structured language.
5. **Synthesis:** To design and implement project-based learning processes according to the chosen theme. In this outcome, student are expected to be able explain a clear and complete social problems in global society context.

Students are learning the basis of Indonesian value, namely Pancasila as their main source of theoretical learning courses in class including several assesment sets. Those assesment sets are;

1. **Formative assesment** in form of classroom quizzes, participation and discussions, and paper writing.
2. **Summative assesment** in form of midterm exams and oral presentation
3. **Practical assesment** in form of case studies in class
4. **Authentic assesment** in form of group project as a colaborative work to solve simulated social problems.
5. **Creative and innovative assesment** in form of project based learning which include designing and implementing projects to solve social problems in global society, creating video documentation of said project, and poster presentation as their final evaluation of said project.

Additionally project based learning as their final assesment related to their respected courses at the end, has goals to tackle real life global issues regarding their choosen topics which based on The 17 Goals of Sustainable Development. Project-based learning can be described as a semi-decentralized activity model where the role of the lecturer is primarily as a supervisor or regulator, while students are given the freedom, within a certain timeframe, to develop practical solutions. This allows the author to get a balanced input to observe development of student's ethical awarenes. As the project-based learning model enables students to directly interact with the problems they face providing balance between reality and theory they traditionally receive in class sesions, eliminating the notion that the lecturer is the primary source of input in their ethical awareness development. Therefore, author hopes to obtain novel results based on the individual values of students, the foundational Pancasila education received in class, and the realities in the field.

Pancasila and Sustainable Ecosystems

Pancasila as Indonesian national value consists of five foundations in which related to sustainable ecosystem, those values can be described as the five principles below.

First Principle

The first principle of Pancasila holds the view that belief in the existence of God Almighty encourages humans to utilize all the potential that God has given. This brings awareness that everything around humans is a blessing from God and needs to be cared for and preserved. Therefore, it can be concluded that the sustainability of ecosystems is something that humans must uphold, not only as a form of faith in God but also as part of the relationship between humans and their surrounding environment (Hasna, 2016). This also provides an intrinsic relation within ecotheology regarding the paradigm of the universe, where there is a natural unity in human relationships that can be realised through loving another humans and nature (Fios & Sudirman, 2020).

Second Principle

The Second Principle of Pancasila emphasizes justice and civility in humanity. In the perspective of the second principle, Pancasila accommodates the relationship between human beings. This is related to the limitation of land ownership and the obligation of landowners to protect their assets, which involves the values of respect and concern for the environment that must be maintained according to its needs. Generally, the second principle can be interpreted as the right of every individual to have a good and healthy environment, as well as the availability of information related to the environment and the role of human management of the environment in accordance with applicable laws (Hasna, 2016).

Third Principle

The Third Principle of Pancasila reflects the reality of Indonesia as a diverse community consisting of various ethnicities, beliefs, religions, languages, races, and geographical formations. This implies that there are relationships between humans and their surrounding environment, which can be interpreted differently within the framework of diversity (unity in diversity). Ecologically, this points to the unity between the Indonesian nation and all other natural aspects in Indonesia, where they share the same structure of existence and therefore need to be preserved and cared for (Fios & Sudirman, 2020).

Fourth Principle

The Fourth Principle of Pancasila speaks of wisdom in deliberation and representation, which is embedded in the values of democracy. This reflects the formulation of decisions based on considerations of ecosystem sustainability. It includes fostering, raising, and developing awareness and responsibility for environmental management, increasing public awareness in managing the environment, and building partnerships between the public, businesses, and the government to preserve the carrying capacity of the environment (Hasna, 2016).

Fifth Principle

The Fifth Principle of Pancasila emphasizes the welfare of the Indonesian people. This can be interpreted as access to nature and its resources, which are provided to support the livelihood of the people. It also requires justice toward nature, so that the utilization of these resources can be carried out equitably, allowing nature the time to regenerate, aligning with the notion of a sustainable ecosystem (Fios & Sudirman, 2020).

In implementing project-based learning, the students grouped into five teams demonstrated perspectives that aligned with the principles of Pancasila. Although it must be acknowledged that the first principle received less attention, a strong sense of love for nature was clear. This cannot be separated from their awareness of other values, such as those embedded in the second and third principles of Pancasila. The students involved in this project held the belief that ensuring ecosystem sustainability would be impossible without active engagement in environmental preservation. A damaged ecosystem not only affects nature itself but also has broader implications for well-being, including public health.

In one of the student research projects titled “Addressing Climate Change in the Community of BINUS University Bandung,” the students discussed how ecosystems are interconnected. Damage to one ecosystem would have a cascading effect on the sustainability of species on Earth. Furthermore, they recognized that efforts to protect nature from uncontrolled climate change are crucial for the health of all humanity (Ramadhan, Arwen Sabitha et al., 2024). This aligns with the second principle, which emphasizes that as citizens of Indonesia, we must recognize that every individual has the right to attain and maintain good health. Therefore, all forms of environmental pollution that contribute to climate change must be stopped.

In a separate interview with another group of students, the author found a similar awareness regarding the interconnection between ecosystems. For instance, damage to marine ecosystems also affects the degradation of terrestrial ecosystems. Based on this awareness, the students began to contemplate concrete ethical steps they could take in relation to the realization of the second and third principles of Pancasila. They concluded that the only way forward is to implement appropriate actions, both from the government and individual perspectives. For them, it is essential for the government to take responsible and just actions toward nature. This, if we examine closely, is in line with the principles of the Fourth and Fifth Principles of Pancasila. The government needs to implement targeted environmental management, engage in dialogue with the community and relevant stakeholders, and raise public awareness of the importance of ecosystem sustainability, grounded in justice and common interest.

On the other hand, individuals within society must also commit at the personal level to preserving and conserving nature. This is based on the understanding that the application of Pancasila's values is not only the responsibility of the government but also of its citizens. Pancasila, as a worldview or ideology, requires us, the people of Indonesia, to treat nature justly and not exploitatively. Ultimately, this will lead to the common good and justice, not only for the Indonesian people but also for nature and the global community.

Ethical Awareness

Plato's Eudaimonia and Students' Ethical Awareness in Facing Sustainable Ecosystem Issues

Every human being is always in pursuit of happiness or well-being. The concept of happiness in Ancient Greek thought can be distinguished into two aspects: hedonistic happiness and happiness known as eudaimonia. Hedonic happiness follows the pattern of "approaching what is pleasurable and avoiding what is painful". Meanwhile, happiness in the sense of eudaimonia emphasizes a life that is meaningful and has a good purpose. Happiness is a state of enduring well-being that involves living a good life—one that is guided by moral reasoning, a life filled with meaning and purpose for the good of others. The elements associated with this concept include growth or development, self-realization, and self-meaning (Satinder Dhiman, 2021).

In this section of the discussion, we use the concept of happiness as eudaimonia in examining the development of ethical awareness among students regarding ecosystem sustainability. The concept of eudaimonia we employ is derived from Plato's thought in his work, Republic. For Plato, there is an intrinsic relationship between morality (being good) and eudaimonia. Being good means acting with virtue and being just. By doing both, Man can achieve eudaimonia. So, how can man act virtuously and be just? To answer this question, we need to consider how Plato views of man. According to Plato, man has three parts of souls: rationality (*Logistikon*), spirit (*Thymoeides*), which consists of honour and self-respect, and appetite (*Epithymetikon*) which consists of desires and physical needs. When rationality can balance spirit and appetite, eudaimonia can be achieved. Rationality must balance the two of them through the practice of a virtuous and just life. Living with virtue and justice is living in accordance with morality. From this, we can see that there is a relationship between knowledge, virtue, and justice. If knowledge is closely tied to rationality, we can say that someone demonstrates good knowledge if they are able to make moral and just decisions.

Based on the concept, eudaimonia can be attained only through the embodiment of moral values and justice in daily human life. Among students participating in project-based learning with a focus on ecosystem development, it was observed that their engagement in these projects heightened their awareness that environmental issues are inherently linked to ethical considerations. The understanding that knowledge pertaining to the development and

preservation of the environment must be grounded in moral values and principles of justice became evident throughout the students' learning process. For instance, a group of students who explored the theme "The Contribution of Reusable Goods in Maintaining Marine Ecosystem Cleanliness and Balance" demonstrated in their final critical reflections that active involvement from individuals is crucial. They acknowledged that it is imperative for them to contribute to solutions aimed at reducing plastic waste in marine environments. This realization is particularly significant, as they recognized that plastic pollution not only degrades marine ecosystems but also poses a broader threat to the sustainability of life and the overall well-being of humanity (Abhipraya & K, 2024). In the same reflection, they expressed their intention to start by reducing plastic waste on a personal level. Here, their focus is no longer on fulfilling personal desires but rather on the well-being and sustainability of the ecosystem. For the students involved in this study, collective happiness or well-being is not something that comes naturally, but rather is achieved through the active efforts of everyone. In the case of marine pollution caused by plastic waste, this requires practical choices based on moral values and justice, such as starting to use recycled goods and reducing personal plastic consumption.

Furthermore, from the results of interviews with another group of students, the researchers found that a sustainable ecosystem can only be realized if humans prioritize the common good over individual interests. This means that in managing and developing the environment, humans must not only think about personal gain but must also consider the well-being and justice for others and the environment. Humans should not rely solely on self-esteem (which is often mistakenly equated with the accumulation of wealth), nor on the desire to dominate nature, but must rely on respect for others and the environment. This respect is manifested in fair and responsible behavior toward nature. Fair and responsible behavior will ultimately lead to the creation of a sustainable ecosystem, and as a result, bring well-being and happiness to all humans.

Sustainability Ecosystem

A sustainable ecosystem can be defined as a condition of resilience where the ecosystem can maintain its characteristic diversity in accordance with its functional groups. Additionally, Chapin III defines ecosystem sustainability in its successional stages, where there are disturbances, colonization, and continuous development. Furthermore, Chapin views that ecosystems are not static but rather cycles that change in response to random (stochastic) events or continuous changes (Chapin et al., 1996). Here, the author will adopt one of the frameworks of sustainable ecosystems known as ecosystem stewardship. This framework promotes resilience and adaptability within social-ecological relationships. It is a development from maximizing yield towards a more holistic approach that considers multiple variables, one of which addresses resilience not only as something influenced by disturbances but also as an opportunity to transform and renew itself (Chapin et al., 2010). There are several important aspects when discussing ecosystem stewardship where education play an important role (Chapin et al., 2009). The first is the reduction of vulnerabilities arising from known pressures such as climate change, overgrazing, and the depletion of natural resources. The next is the strengthening of social learning to facilitate the adaptation to changes that occur. This concept connects multiple stakeholders and knowledge systems to enhance the adaptability and resilience of social-ecological systems. Social learning becomes crucial in governance systems to navigate uncertainty and unpredictable conditions. The third concept, as presented by Chapin III, addresses the issue of governance structures that can collaborate across multiple levels, meaning a polycentric governance system capable of distributing responsibilities across various organizational levels.

In this context, education is a powerful tool to connect several stakeholders and knowledge systems which enable societies to overcome uncertainty and give effective respond to environmental challenges. Educational initiatives can be promoted to social learning, which encourages collaboration among scientists, decision makers, local communities, resources users, and owners to form a strong collective adaptability. Furthermore, education plays an important role in ecosystem stewardship as it improves social learning, enhances adaptive capacity and supports the development of polycentric government systems. Such educational efforts are critical in shaping resilient societies capable of maintaining ecosystem amidst rapid environmental changes.

The importance of education as one of the gateways to ecosystem sustainability is recognized by the Character-Building Development Center at BINUS University. As a result, in its project-based learning process, this unit includes Ecosystem Sustainability as one of the themes that students can explore. As mentioned above, there must be a collaboration between what is taught in our educational system and the various policies related to ecosystem sustainability. This awareness is also evident in the students' mindset when undertaking these projects. The students realize that ensuring ecosystem sustainability requires not only active individual participation but also appropriate government policies. This is particularly apparent in student projects with the theme "Addressing Climate Change," where their final reports illustrate how climate change, as one of the issues of ecosystem sustainability, is a shared responsibility of the international community, governments, and society at large (Widodo et al., 2024). There must be alignment stemming from collective decisions to ensure ecosystem sustainability at every level of society, from the global community to the individual level.

Furthermore, regarding the role of the government, education is needed for the public, especially concerning issues of ecosystem sustainability. For instance, the issue of water sanitation was raised by one student group in their project titled "Strategies and Solutions for Addressing Water Pollution." In their final report, they highlighted that the government needs to implement clean water infrastructure programs designed with a participatory approach, involving the community directly in both the planning and execution processes. This involvement presupposes that the community has knowledge about water sanitation. Therefore, the government's role in incorporating community sanitation training and education into its policies is essential (Ramadan et al., 2024). The importance of government involvement, as well as the participation of various societal layers, is also evident in the results of a project-based learning group that focused on the theme "Responsible Consumption and Production." In their final report, the group emphasized how deviations in supply chain practices and poor industrial waste management can lead to environmental pollution and social inequality. This issue needs to be addressed not only by business actors but also by the government (as policymakers) and the general public (Diandra et al., 2024).

CONCLUSIONS

In conclusion, author found strong relationships between ethical awareness and sustainability ecosystem through character education in form of three key points namely, collective ethical awareness, collective shared values, and sustainable gain. And the interconnectedness within those relationship acquired by students cannot simply be developed based solely on classroom theory. To foster an inner sense, it is necessary to build a concept of Plato's eudaimonia with real world interaction.

Collective ethical awareness is a value that took flight from their root as a human being, it can be called a universal value that an individual should have as a human being. The concept of happiness and prosperity is a universal value that individuals try to attain in their

lifetime. And they realize that such concepts must start from within, but they also expect other individuals to do it. As such they view character education to promote collectiveness and become a basis of motivation and guarantee other individuals will do the same thing which is to promote sustainability ecosystem to be happy and prosper together.

Collective shared values can only be shared among individuals which has same identifier marker, in this research author use Pancasila as a collective value for Indonesian. Students see this value as a stronger bond which has reciprocity effect. What students see from this is in form of justice, whereas government, organization, and other institution or decision makers which fall under the same jurisdiction must commit to uphold justice for nature and global community to create a sustainability ecosystem.

Sustainable Gain can be seen as a sustainable effect in terms of individuals, groups, sets of government or anyone that is able to profit from sustainable ecosystems. This can be said as an end game in which every aspect of nature can be maintained and both people and environments will be able to profit from sustainability ecosystems.

Authors found that during this research on students that took ecosystem sustainability as their theme, all students all aware that ecosystem sustainability can only be achieved through cooperation in which give a sense of togetherness. In which promoting students movement toward building a sustainable ecosystem is an important aspect to consider for both government and corporation alike. Students can be categorized as an idealistic part of society but overly idealistic might pose another issues in term of how realistically their ideas can be implemented to gain desirable results. While government and corporation alike can be categorized as realistic part of society since they deal with tangible aspects such as budgeting, timeframe, or manpower and intangible aspect such as culture, local community values and beliefs, and politics. So it can be said that the balance between them in term of creative ideas that born form and idealistic entity (students) and realistic ideas and real world managerial entity (government and corporation alike) is important. Both side can learned how to balance themselves to solve environmental issues to promote sustainable ecosystems. And another thing to consider is all of the actors are or were students once in their lifetime. But that does not necessarily mean that students are unable to do it alone, but fostering corporation will yield better results in term of promoting cooperation and collaboration toward a sustainable ecosystem.

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