

## ST. Paul University Philippines' Thrust Towards Education for Sustainable Development

Sr. Merceditas Ang\*

*St. Paul University Philippines, Tuguegarao City, Cagayan, Philippines*

**Corresponding author:** Sr. Merceditas Ang, E-mail: [angmerceditas@yahoo.com](mailto:angmerceditas@yahoo.com)

### ARTICLE INFO

#### *Article history*

Received: June 28, 2021

Accepted: October 21, 2021

Published: October 31, 2021

Volume: 9 Issue: 4

Conflicts of interest: None

Funding: None

### ABSTRACT

Educators have a pivotal role in promoting education for sustainable development (ESD). It is imperative to focus on sustainable development in order to survive and thrive in the present, and thus ensure that there would be a bright future for humankind. This descriptive study delineates the policy imperatives and integral implementation of ESD enhanced by the service learning program (SLP), and aligned with the United Nation's Sustainable Development Goals (SDG) at St. Paul University Philippines (SPUP).

**Key words:** Education For Sustainable Development, Service Learning, Sustainable Development Goals

### INTRODUCTION

Education is upended by the COVID-19 pandemic and learning modalities have shifted to the digital platforms. A core competence for educators is about learning to survive and thrive in a transforming world in the new normal (Hannon & Peterson, 2017). Policy makers, educators, professionals and practitioners are concerned on efforts to adapt, improve, and develop for the better. But our reform efforts and change initiatives must be desirable, doable, and sustainable. There is a need to integrate sustainability in our policies, strategies and practices.

As we face a global crisis due to the COVID-19 pandemic with negative impact on health and economy but positive impact on the environment (Varney & Adalja, 2021), the issue of sustainability is most relevant and important. Although the lockdown was a learning opportunity to have a cleaner and greener environment (Khan et al, 2020), yet it is imperative to focus on sustainable development to ensure that there would be a bright future for humankind. Education is crucial for the achievement of sustainable development; it must be transformative and facilitate individual and collective action to change our societies and care for the planet. The students and learners of all ages must be prepared to find solutions for the challenges of today and the future (UNESCO, 2021). Sustainability leadership is most needed in navigating the challenging era of the fourth industrial revolution with skills and wisdom. Education 4.0 must be anchored on values and directives leading towards sustainable development and quality of life and work.

Sustainability Leadership supports the triple bottom line concept of People, Planet, and Prosperity, thereby involving mindful actions and global world-view that recognize the connection between the planet and humanity through

personal and organizational choices that effect positive environmental and social change (Burns et al., 2015; Way, 2012; Mccann & Holt, 2010). As an administrative platform, sustainability leadership fosters care for people and the environment for posterity; it reflects consciously living in ways and means that account for ecological and social impacts and benefits (Ferdig, 2007; Bendell & Little, 2015).

The United Nation's 2030 Agenda for Sustainable Development and Social Transformation (UN, 2019) with its 17 Sustainable Development Goals (SDG), clearly provide pathways to achieve a better future. SDG 4 promotes quality education while target number 7 of this goal is specific about education for sustainable development (UNESCO, 2017). The prominent features of education for sustainable development (ESD) can effectively enhance education 4.0, to wit: interdisciplinary and holistic, values-driven, critical thinking and problem-solving, multi-method, participatory decision-making, applicability, and locally relevant (López-Alcarria et al., 2019; Straková & Cimermanová, 2018; UNESCO, 2004). ESD "empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning, and is an integral part of quality education." (UNESCO, 2019). Moreover, ESD is transformational education which addresses learning content and outcomes, pedagogy and the learning environment (UNESCO, 2019). Based on research, ESD will develop empathy, innovation, responsibility, participation, futures, criticality, transdisciplinarity, attentiveness, systems, engagement, action, and decisiveness (Vare et al., 2019). Apparently, the cognitive, affective and behavioral aspects are encompassed to deepen understanding of sustainability

and development problems, and most likely cultivate values, attitudes, perspectives, and lifestyles that create and provide solutions and interventions.

St. Paul University Philippines (SPUP) is an autonomous and international university located in Tuguegarao City in the northern part of Luzon, in the Philippines. It has incorporated education for sustainable development (ESD) in its teaching process, learning activities and advocacies. SPUP takes on the cudgel of responsibility of sustainability leadership for Education 4.0. The new call in the fourth industrial revolution (4IR) during this pandemic and beyond is to create a positive convergence of humanity, spirituality, technology, quality, and sustainability. Sustainability is the new advantage.

### PURPOSE OF THE STUDY

This study is intended to discuss the importance of education for sustainable development (ESD) as implemented at St. Paul University Philippines. Specifically, it delineates the following:

- a. Policy Imperatives and ESD Implementation;
- b. Service learning Program, and
- c. Implementation of the UN Sustainable Development Goals (SDG)

### METHODOLOGY

The descriptive and qualitative methods were used in the study. The data gathered including manuals, reports, publications, minutes of meetings, curricula, instructional materials, strategic plan, etc. were reviewed, evaluated, interpreted and subjected to the documentary analysis technique. Focus group discussions were conducted with representatives from the administration, faculty, staff, students, parents, alumni, and other stakeholders. A random sample of 8 school administrators, 15 teachers, and 80 students provided feedbacks and shared their observations, experiences, and insights on the implementation of the ESD, SLP, and SDGs.

### RESULTS AND DISCUSSION

#### Policy Imperatives and ESD Implementation

The UNESCO policy imperatives and the United Nations' Sustainable Development Goals 2030 have impelled the development of the SPUP ESD program. Sustainability is integrated in the institutional policies, co-curricular activities, advocacies, and teaching-learning process. In 2015, SPUP launched its Internationalization Program vis-à-vis the thrust towards quality education and sustainable development. This was carried out with a policy for inclusive growth and sustainability. It was anchored on SPUP's vision-mission to uphold quality education and sustainable development to effect social transformation through creative evangelization, academic excellence, research and innovation, internationalization, and community services. Likewise, considered were the Paulinian core values of Christ-centeredness, Charity, Community Development, Charism, and Commission. The

institutional strategic framework includes education for sustainable development as one of the strategic directions, citing the UN SDG#4 on quality education with the number 7 target to promote education for sustainable development. The SPUP ESD program which was formulated in 2016 fosters the holistic convergence of academic excellence, social responsibility, Paulinian spirituality and core values through care for people and environment in an integral, inter-disciplinary, inter-cultural, local-global approach, and transformational learning milieu.

Sustainability Literacy was an enabler in the SPUP ESD program and in the creation of a learning environment as hub of sustainability. The transfer of knowledge, skills, and values were coursed through the homeroom activities, sample cases cited in the lessons, webinars and videos on sustainable practices, project-based solutions and interventions to community problems on sustainability, and the interactive discussions during classes. It is interesting to consider the study on student engagement in sustainable living using experiential learning (Qureshi, 2020). Enabled by technology, the students learned and were motivated to practice sustainability. At SPUP, the students experienced sustainable living as guided by the teachers through learning activities, projects and reflection papers. Due to the COVID-19 pandemic and physical restrictions, the students stayed at home while learning online. Based on reports and feedback, the students learned to value life, health, clean air, quality and equity in education, technology and innovation, peace and collaboration, economic recovery, environmental stewardship, etc. They opted for healthy food products, avoided the use of plastics and non-biodegradable materials, and expressed new perspectives and action plans on sustainable living during and post-pandemic. The students depicted their learning outputs on sustainability in a video challenge activity entitled "Creating a Sustainable World and Better Tomorrow." A virtual exhibit was done on the students' projects and initiatives.

SPUP embraces learning in the new normal with a transformative approach towards quality and sustainability for a peaceful, just, and better world. Accordingly, the administrators, faculty, staff, and students have exemplified a paradigm shift in perspective, practices, and lifestyle, thus supporting ESD as reflected in terms of: a) teaching and learning process; b) inclusivity and interculturality c) sustainable technology integration in the curriculum and instruction; d) collaborative research on ESD; e) resource management and capability-building based on triple bottom line of people, planet, prosperity; f) implementation of the UN sustainable development goals 2030, and g) community outreach and service learning.

As shown in Figure 1, the ESD Program of SPUP encompasses the aspects of knowledge, values, skills, and behaviour of the constituents and stakeholders of the University. For a more effective implementation, the ESD is incorporated in the curriculum and instruction, learning activities, systems, structures, and processes. The institutional development plan and strategic directions include ESD principles and goals. In a way, the SLP and implementation

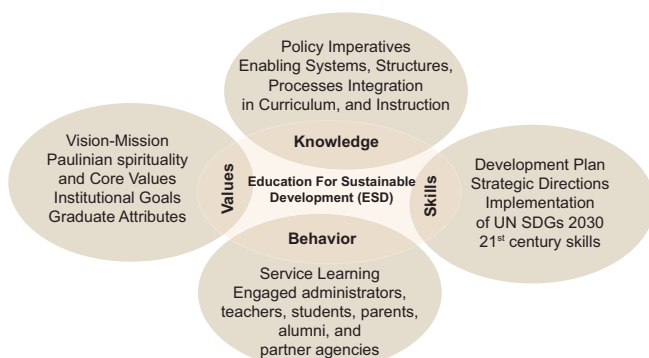
of the UN SDGs have facilitated the active awareness and engagement of the school's constituents, partners and other stakeholders on the relevance of ESD and the mandate for sustainable development especially during the COVID-19 pandemic and beyond.

In the context of 21<sup>st</sup> century learning enhanced by the 4IR educational technologies, SPUP seeks to achieve greater relevance, level up in quality, create new models for transformation and sustainability, and demonstrate deeper spirituality and excellence. Cognizant of the unprecedented changes, innovations and disruptions in the educational landscape and the labor market, SPUP has implemented the ESD program to ensure the school's sustainability, and prepare the students and graduates to survive and thrive in a transforming world. This is demonstrated by the following institutional endeavors:

1. Incorporation of the ESD principles in the teaching and learning process and school activities;
2. Pioneer programs, projects and advocacies that implement the 17 Sustainable Development Goals 2030 of the United Nations;
3. Integration of the 4IR technologies in the curriculum and instruction;
4. Matching the students and graduates' skills and competencies with the current industry needs and demands in the local and global labor market;
5. Re-inventing and re-tooling of teachers and personnel in the 4IR ecosystem;
6. Formation and training on spirituality and values, morality and ethics, soft skills and humane attributes;
7. Research and innovations enhanced by the 4IR technologies, and
8. Lifelong learning and adult education that promote quality life and sustainable development

**Service Learning Program**

The teaching and learning in the 4IR must be anchored on the 21<sup>st</sup> century global competencies enriched with character and service learning. The mandate to make a difference goes with a wise approach and scheme on resource mobilization and sustainable development. SPUP is propelled by the three pillars of a university, to wit: Quality Teaching and Learning, Research and Innovation, and Service Learning.

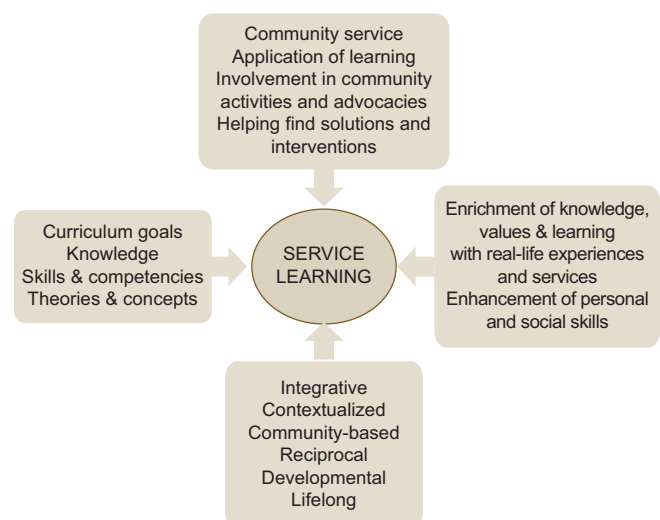


**Figure 1.** SPUP framework on education for sustainable development

SPUP has formulated its Service Learning Program (SLP) to enable the students, with the guidance of the teachers and the cooperation of the people in the community, to apply what they learn in the classroom to real-life situations in the community. This develops deeper understanding of the curriculum through learning experiences and involvement in community services and advocacies that are beneficial to the people in the community and for the common good. This approach is experiential and transformative for the students who become more responsible, socially-aware of the plight of others, and more involved in the exercise of their civic duties as citizens of the country and members of the global community.

As shown in Figure 2, the SPUP SLP is the interplay of the curriculum goals and classroom teaching with the real life application of learning through community service. The approach is integrative with community life and goes beyond the traditional classroom teaching-learning process. It is contextualized to the community setting and the realities of life and provides interactive immersion opportunities. The resources in the community are utilized as well as the strengths and capacities of the members of the community. The service learning relationship is beneficial to both the students and community members (Clevenger et al., 2012). As the students give their time, talent, ability and service to the community, they also deepen their learning of the course materials and enhance their competencies. On the other hand, the community members' gain from the services and involvement of the students as the former participate as co-educators in forming the values and service orientation of the students. It is also developmental in the sense that it is monitored and evaluated for improvement. Apparently, the effect and impact of service learning is lifelong and becomes part of the continual growth of the students beyond the academic term. It can influence their values, sense of community, career choice, mindset and convictions. Truly, service learning can enrich and enhance effective learning to promote sustainable development.

The advocacies of SPUP are ultimately geared towards promoting quality life, sustainability and social transformation. The students and employees are actively engaged



**Figure 2.** SPUP service learning program

in service learning and community outreach to help the poor and marginalized. SPUP advocates quality and inclusive education, peace and social justice, pro-life, environmental stewardship, health and wellness, disaster and risk management, and poverty alleviation. The University's community extension services are developmental and have extensive coverage in Tuguegarao City and in the provinces of Cagayan, Isabela and Apayao. The beneficiaries are multi-sectoral including farmers, prisoners, juvenile delinquents, abused and abandoned women and children, indigenous people, and the pupils in public schools who are catechized and prepared for first holy communion. The SPUP Community Development Center Foundation, Inc. (CDCFI) has been organized and duly registered with the Securities and Exchange Commission as a non-stock and non-profit corporation, and accredited by the Department of Social Welfare and Development. The advocacies of SPUP are integrated in the learning activities and connected with the grassroots in society. Due to physical restrictions during the pandemic, the involvement of the faculty and students are limited but they are able to make their presence felt virtually through video-conferencing.

### Implementing the UN SDGs

In 2016, as part of the ESD program, a seminar-workshop; was held at SPUP on the United Nation's Sustainable Development Goals (SDG), under the platform of "Transforming Our World: the 2030 Agenda for Sustainable Development." The participants were teachers and student leaders. It was an orientation on the 17 SDGs and an exploratory discussion of implementation, impact and implication.

Subsequently, SPUP launched its Global Education initiatives and aligned the University's programs and projects with the implementation of the SDGs. There is a sort of interdependence of the local and global concerns as depicted in social, political, and economic systems. We go beyond our regional and national identity as we are citizens of the world. Global citizenship implies respect for human rights and shared values and goals that transcend culture, religion, race, ethnicity, and socio-political affiliation. At SPUP, we embarked on global citizenship education and incorporated it in the ESD and transcultural service learning. This covers advocacies on peace education, environmental stewardship, justice and equity, climate change, global health, and community development. We embrace the principles and issues of global citizenship education and advocacies towards the realization of the development sustainability goals 2030.

Before the school shutdown due to the pandemic starting in March 2020 here in the Philippines, SPUP conducted a training program on the competencies of educators to embed sustainability in the curriculum and instruction. As pointed out by Vare et al. (2019) there is a need for clarity of purpose and competence of the educators in the implementation of the ESD. SPUP adapted the authors' holistic approach of envisioning change and achieving transformation by underscoring integration, involvement, practice, and reflection.

Moreover, the SPUP experiences of implementing the UN SDGs affirm the resulting competencies in the study

(Vare et al., 2019) and demonstrate that ESD develops empathy, innovation, responsibility, participation, futures, criticality, transdisciplinarity, attentiveness, systems, engagement, action, and decisiveness of educators, students, and collaborators.

SPUP had undertaken various projects and programs in implementing the UN SDGs. Related to SDG#1 on Poverty Alleviation, the Child Protection Towards Enabling Childhood Development and Community Transformation (Child ProTECT) is SPUP's community development program with the indigenous people in Apayao and the Cordilleras mountains in the Philippines (Cabaddu, N., 2019). This project targets poverty alleviation and aimed at the holistic development of the indigenous children and their families, covering health and nutrition, literacy, family life, community development, including livelihood training and micro-financing for the parents. The Child ProTECT project of SPUP is funded by Child Fund International through the country representative in the Philippines. Also, the University has a Student Assistance Program, offering scholarships to students in college and graduate school.

For SDG#2 on Zero Hunger, the Science Agri-based Entrepreneurial High School (SABEHS) Program is an Alternative Learning System of SPUP for the children of indigent farmers in Baggao, Cagayan. The children are fully subsidized by SPUP for their board and lodging, and they are trained and equipped with farming skills. Related to this program on sustainable agriculture, we have micro-financing on technology-based agriculture towards food security. The University is engaged in feeding program.

SDG#3 on Good Health and Well-being is being implemented through the Medical and Dental Mission, Fitness and Wellness Program, Sports Development Program, Service Learning on Health, Klinik-in-a-Box Program, partnership with the Department of Health, and the conduct of an International Health Congress. Since the flagship programs of SPUP are health-related, then this is an important thrust. The Health Congress provides opportunity for educators, researchers, professionals and partners in the academe, hospital, and healthcare industry to share and network on research findings, new technologies, health pedagogies, effective healthcare management and recent developments on health and wellness. In December 2018, SPUP hosted an International Health Congress on the "New Healthcare Technologies on the 4<sup>th</sup> Industrial Revolution." The interesting 4IR new technologies presented included artificial intelligence and humanoid robots, immunotherapy and precision medicine in the treatment of cancer, genome editing and bio-printing and body parts transplants, e-Medicine, etc. During this pandemic, the SPUP healthcare workers are frontliners and engaged in the vaccination program, telehealth, health protocols, and contact tracing for COVID-19 infections.

Quality Education is the focus of SDG#4. SPUP has enhanced the quality of Paulinian education through internationalization, research and innovation, technology integration in the curriculum and instruction, transformative learning, work and travel programs and immersion. Its

global education is resonated in the tagline "SPUP making a difference globally." The increasing population of international students is boosted by the transnational education and exchange program, with partner schools in other countries sending students and faculty to SPUP for studies and immersion. The #4.7 target of this goal is on Global Citizenship Education (GCED). In collaboration with the World Council for Curriculum and Instruction (WCCI), SPUP embarked on Global Citizenship Education (GCED) and advocacies on quality education and lifelong learning, peace education, environmental stewardship, climate change and biodiversity conservation, gender and development, health and well-being, poverty alleviation, and community development. Moreover, the University has long standing partnership with the National Association of UNESCO Clubs in the Philippines and received awards from UNESCO Philippines. The SPUP Center for Adult Education and Lifelong Learning is newly established.

SDG#7 on Affordable and Clean Energy is being implemented by SPUP through its Clean and Green Charcoal Project and the installation of solar panels on the roof of the school buildings. The Japanese Embassy has funded the Clean and Green Charcoal project. In response to deforestation, pollution, and environmental degradation, SPUP came up with a project to substitute wood-charcoal with corn cob as alternative material. So, with a briquetting equipment, we were able to produce clean and green charcoal out of corn cobs.

SDG#8 on Decent Work and Economic Growth was implemented by SPUP with its Family Welfare Program (FWP). This promotes the welfare of the SPUP employees and their families as a key to workplace productivity and improved employee-management relations. It is an advocacy that draws corporate support in promoting the workers' quality life and work by adopting a family-centered approach in the workplace. The students are prepared for employment through Job Fairs, On-the-Job Training and immersion in local and international industries.

To build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation define the imperative for SDG#9. At SPUP, this is implemented through the annual Cyber Summit and innovation bootcamp for students and practitioners of Information Technology and Engineering. The students are provided with inputs and workshops on the new technologies in the 4IR like, artificial intelligence, data analytics, robotics, block chain, cyber security, applied computing, automation, internet of things (IoT), 5G connectivity, and the latest trends and developments in industry 4.0. We have set-up laboratories for robotics, start-up innovations, simulations, business incubation, and smart classrooms.

SPUP implements SDG#10 on Reduced Inequalities through its inter-cultural and inclusive education that caters to a diverse population of local and international students, with differences in socio-economic status, cultural background, religious beliefs, and racial orientation. The University supports gender parity, apostolate to abandoned women and children, prison ministry, community outreach

to the indigenous people, and service learning to the poor and marginalized communities.

Aligned with SDG# 11 on Sustainable Cities and Communities are the SPUP advocacies on Peace Education, Environmental Stewardship, logical Conservation, and Heritage Conservation. Also, the University has an extensive Community Extension Services (CES) Program covering 22 barangays and poor communities of indigenous people, farmers, abused women and children, delinquent youth, and catechism to seven small public schools in the barrio. The Disaster and Risk Management is in preparation for any disaster or calamity to avoid or minimize damage and harmful effects.

To implement SDG#12 on Responsible Consumption and Production, SPUP mandates Zero Waste Management, Control of Plastic Use, Clean As You Go (CLAYGO), and Trash to Patterns wherein waste materials are remodelled and constructed into handicrafts, trophies, woodwork and decoratives. SDG#13 on Climate Action inspired the advocacy on climate change and the study on carbon footprints entitled "Productivity Indicators Through Environmental Sustainability Initiatives of SPUP."

Life on Land is the focus of SDG#15, particularly, the protection, preservation, conservation of biodiversity, and sustainable use of terrestrial and other ecosystems. Accordingly, SPUP has embarked on tree growing and reforestation project, backyard gardening, ecological conservation and protection of biodiversity. The students, employees, parents and alumni join the tree planting and advocate forest conservation.

SPUP advocates Peace Education and upholds justice and equity. This is aligned with SDG#16 on Peace, Justice and Strong Institutions. Embedded in the curriculum and instruction is the spiritual and leadership formation which supports the peaceful, just and non-violent ways of conflict resolution. The periodic *Kapihan with the Media* is an interesting opportunity to discuss the values and integrity of truthful and responsible reporting, particularly on issues affecting peace and security, human rights, justice and equality.

SDG#17 highlights on Partnerships for the Goals. The local and international partners of SPUP are very helpful in the programs and projects which are aligned with the implementation of the SDGs for sustainable development and social transformation. We have partnered with UNESCO Philippines, the Department of Social Welfare and Development (DSWD), and ChildFund Philippines for the University's projects for the poor and marginalized; the Paulinian Volunteers' Club is registered as a UNESCO Club. For educational programs and training, and research and advocacies, we have partnered with SEAMEO INNOTECH, the Commission on Higher Education (CHED), Department of Education (DepEd), the World Council for Curriculum and Instruction (WCCI). For internationalization programs, we have partner schools in Indonesia, China, Taiwan, Thailand, Japan, Australia, Singapore, Malaysia, and Qatar.

So far, SPUP has come up with a Primer on its various programs and projects on the ESD, SLP, and SDGs. Indeed, it is a relevant and worthwhile endeavor to implement the

ESD, SLP, and UN SDGs to promote sustainability and transformation in education. During the pandemic, the engagements and networking are done through the digital platforms.

## CONCLUSION

Sustainability is an imperative and essential factor to consider in order to ensure a better future. In this challenging task and responsibility, education has a vital role. St. Paul University Philippines (SPUP) has institutionalized the implementation of Education for Sustainable Development (ESD) and Service Learning, and aligned its institutional projects and activities with the implementation of the United Nations' Sustainable Development Goals 2030 (SDGs). This was carried out with a policy for inclusive growth and sustainability, and anchored on SPUP's vision-mission to uphold quality education and sustainable development to effect social transformation through creative evangelization, academic excellence, research and innovation, internationalization, and community services. ESD is likewise incorporated in the institutional strategic thrusts and directions, along with service learning and the implementation of the UN SDGs.

Some of the noteworthy features and highlights of the successful implementation of the ESD, SLP, and SDGs at SPUP include the following: a) rooted on the vision, mission and shared goals; b) institutionalized and incorporated in the teaching-learning process; b) holistic approach and touched on the cognitive, affective, attitudinal and behavioral aspects; c) values-driven and competency-based; d) harnessed the new technologies to enhance quality and promote sustainability; e) strategic, developmental and life-long; f) service-oriented and transformational; g) local and global contexts, and h) collaborative and community-based. Hopefully, the SPUP framework could create and provide sustainable development, endeavors, solutions, interventions and conservation for a better future.

The integral implementation of the ESD, SLP, and the SDGs at SPUP is a meaningful and transformative institutional experience. Since the study is limited to its university-wide scope and locality, then it is recommended to have a more expanded study involving several models of implementation and to have an impact evaluation on the participants and beneficiaries. It would be interesting to assess the effects and implications upon the students, teachers, administrators, and partners in the community in terms of learning, values, attitudes, perspectives, lifestyles, improvement, change and transformation of the person and the institution.

## REFERENCES

- Bendell, J., & Little, R. (2015). Seeking sustainability leadership. *Journal of Corporate Citizenship*, 60, 13-26.
- Burns, H., Diamond-Vaught, H., & Bauman, C. (2015). Leadership for sustainability: Theoretical foundations an pedagogical practices that foster change. *International Journal of Leadership Studies*, 9(1), 131-143.
- Cabaddu, N. (2019). Child Protect: Response to poverty alleviation in the Philippine indigenous community. *International Journal of Humanities and Social Science*, 9(2), 45-51.
- Clevenger-Bright, M., Hays, K., Henricksen, D., Hlebain, J., Maglalang, M., Packard, K., Cornforth, P., & Raftus, D. (2012). Service learning. Center for Teaching and Learning. University of Washington, USA. Retrieved from: <https://www.washington.edu/teaching/topics/engaging-students-in-learning/service-learning>
- Ferdig, M. (2007). Sustainability leadership: Co-creating a sustainable future. *Journal of Change Management*, 7(1), 25-35.
- Hannon, V., & Peterson, A. (2017). *Thrive: Schools re-invented for the real challenges we face*. Innovation Unit Press, Retrieved from: [http://www.innovationunit.org/wp-content/uploads/2017/04/Thrive\\_Preface.pdf](http://www.innovationunit.org/wp-content/uploads/2017/04/Thrive_Preface.pdf)
- Khan, S., Janjua, L., & Yu, Z. (2020). *COVID-19: A Learning Opportunity to Improve Environmental Sustainability*. Retrieved from <https://www.intechopen.com/books/carbon-capture/covid-19-a-learning-opportunity-to-improve-environmental-sustainability>
- López-Alcarria, A., Olivares-Vicente, A., & Poza-Vilches, F. (2019). A systematic review of the use of agile methodologies in education to foster sustainability competencies. *Sustainability* 2019, 11, 2915.
- Mccann, J., & Holt, R. (2010). Defining sustainable leadership. *International Journal of Sustainable Strategic Management*, 2(2), pp. 134-148.
- Oghenekohwo, J.E. and Oputu, E.A., (2017). "Literacy education and sustainable development in developing societies". *International Journal of Education and Literacy Studies*. Vol.5 No.2 pp. 126-131
- Qureshi, S.M.Q. (2020), "Learning by sustainable living to improve sustainability literacy", *International Journal of Sustainability in Higher Education*, Vol. 21 No. 1, pp. 161-178. <https://doi.org/10.1108/IJSHE-01-2019-0001>
- Straková, Z., & Cimermanová, I. (2018). Critical thinking development - A necessary step in higher education transformation towards sustainability. *Sustainability*, 10, 33-66.
- The Organisation for Economic Co-operation and Development (2018). The future of education and skills education 2030. Retrieved from: <https://www.readkong.com/page/the-future-of-education-and-skills-education-2030-9534054>
- The United Nations (2015). *Transforming our world: The 2030 agenda for sustainable development*. UN. New York, NY, USA, 2015. Retrieved from: [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)
- UNESCO (2020). *Education for Sustainable Development*. Retrieved from: <https://en.unesco.org/themes/education-sustainable-development>
- United Nations Educational, Scientific and Cultural Organization (2017). *Education for sustainable development*

- goals: *Learning objectives*. UNESCO: Paris, France, 2017. Retrieved from: <http://unesdoc.unesco.org/images/0024/002474/247444e.pdf>
- United Nations Educational, Scientific and Cultural Organization. (2004). *United nations decade of education for sustainable development 2005-2014- Draft International Implementation Scheme* United Nations, p.16.
- United Nations Educational, Scientific and Cultural Organization (2019). *What is education for sustainable development?* Retrieved from: <https://en.unesco.org/themes/education-sustainable-development/what-is-esd>
- Vare, P., Arro, G., Hamer, A., Gobbo, G., Vries, G., Farioli, F., Beltran, C., Kangur, M., Mayer, M., Millican, R., Nijdam, C., Reti, M., & Zachariou, A. (2019). Devising a competence-based training program for educators of sustainable development: Lessons learned. *Sustainability*. 2019 vol. 11,no.7, <https://doi.org/10.3390/su11071890>
- Varney, J., & Adalja, A. (2021). *Roundtable Recap: Sustainability in the era of COVID-19*. Retrieved from: <https://business.cornell.edu/hub/2021/02/22/roundtable-recap-sustainability-in-the-era-of-covid-19>
- Way, C. (2012). What is sustainability leadership? *Association for Talent Development*. June 4, 2012. Retrieved from: <https://www.td.org/insights/what-is-sustainability-leadership>