Sustainability Education and Instructional Leadership Practices in Thailand: Perspectives of Thai School Principals

Emmanuel Jean-François¹

¹Ohio University, USA

Correspondence: Emmanuel Jean-Francois, Ohio University, USA.

Email: jeanfran@ohio.edu

Doi: 10.23918/ijsses.v9i3p280

Abstract: Thailand is one among various countries in the world that have integrated sustainability education in their curriculum. Their sufficiency-based curriculum is a local (national) version of global sustainability education. School principals have a primary responsibility to provide instructional leadership so that sustainability education or education for sustainability is implemented in ways that are adequate and effective. Therefore, the perspectives and practices of school principals on sustainability education could be instrumental in providing insights regarding the potential to achieve the sustainable goals set for 2030 within the context of the Sustainable Development Goals (SGDs). This study intends to focus on Thailand as a local (national) context to study the perspectives of a key category of stakeholder (school principal) regarding a global challenge (sustainability education). Consequently, the purpose of this study is to explore perspectives of Thai school principals on sustainability education in relation to their instructional leadership practices.

Keywords: Comparative Education, Global Education, International Education, Environmental Education, Glocal Study

1. Introduction

Thailand is one among various countries in the world that have integrated sustainability education in their curriculum. For example, the Sufficiency School Center (2015) reported the existence of a network of more than 14,000 schools in Thailand that have successfully implemented a sufficiency-based curriculum. This implementation includes the development of implementation guides for educational administrators, classroom lesson for teachers to use, and training for teachers and supervisors. The sufficiency-based curriculum is a local (national) version of global sustainability education. It is based on the Thai sufficiency economy principles related to the King philosophy of self-reliance and resilience, which Thai citizens should apply in their daily lives and work duties. Recently UNESCO (2018) had organized a workshop in Bangkok (Thailand) for Southeast Asian teachers, including Thai teachers, to increase their awareness about the roles they are called upon to play to facilitate the achievement of target 7 in Sustainability Development Goal 4. It is important to stress that the world has been dealing with many challenges related to climate change, loss of biodiversity, resource depletion, as well as gentrification that

Received: July 5, 2022 Accepted: August 24, 2022

Jean-Francois, E. (2022). Sustainability Education and Instructional Leadership Practices in Thailand: Perspectives of Thai School Principals. *International Journal of Social Sciences and Educational Studies*, *9*(3), 280-290.

negatively impact every life in our global planetary citizenry. In 2015, the United Nations General Assembly adopted the Sustainable Development Goals (SDGs) for all the countries to achieve by 2030 in order to the sustainability of our planet for future generations (United Nations, UN, 2015).

As part of the SDGs, there is an aim for "all learners acquire knowledge and skills needed to promote sustainable development..." (SDG 4 Target 7) and that "people everywhere have the relevant information and awareness for sustainable development" (SDG 12 Target 8). Sustainability education in the local (national) context of Thailand is occurring within the global framework of the SDGs. Educational institutions, especially primary and secondary schools are keys to materialize the SDGs by 2030. Prior to that, the United Nations Educational Scientific and Cultural Organization (UNESCO) World Conference on Education for Sustainable Development (ESD) recommended the incorporation of sustainability education in k-12 curricula (UNESCO, 2009). Additionally, existing literature on education for sustainability found that many teachers lack content on education for sustainability and advocated for professional development training that would enable them to use student-centered and participatory pedagogical strategies in their practices. Obviously, all stakeholders have a role to play to that end. However, school principals have a primary responsibility to provide instructional leadership so that sustainability education or education for sustainability is implemented in ways that are adequate and effective. Therefore, the perspectives and practices of school principals on sustainability education could be instrumental in providing insights regarding the potential to achieve the sustainable goals set for 2030 within the context of the SGDs. This study focused on Thailand as a local (national) context to study the perspectives of a key category of stakeholder (school principal) regarding a global challenge (sustainability education). The purpose of this study is to explore perspectives of Thai school principals on sustainability education in relation to their instructional leadership practices in Thailand.

2. Literature Review and Conceptual Framework

As mentioned earlier, the purpose of this study was to explore the instructional leadership practices of Thai school principals to implement sustainability education. Instructional leadership was used as a conceptual framework to explore the practices of school principals in Thailand on sustainability education.

2.1 Sustainability Education

Sustainability and sustainable development have become an issue of concern and a major goal for many countries around the world in the face of the challenges posed by migration, poverty, hunger, loss of biological diversity, and climate change. Sustainability education has emerged as a key strategy to develop awareness and competencies that can help citizen prioritize behavior, actions, and decision making to contribute to sustainable living and sustainable development. Taimur and Onuki (2020) assert that sustainability education is designed to "empower learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society for present and future generations" (p. 248). In other words, sustainability education should provide learners the tools to engage in transformational initiatives and actions (Talwar et al., 2011) while enable future leaders with the ability to contribute to building sustainable societies (Onuki & Mino, 2009). More importantly, leaders, especially educational leaders, have a responsibility to nurture teachers who can educate critical thinking, autonomous, and self-determined learners who can be an asset for sustainable development (Wals, 2011).

2.2 Instructional Leadership

The term instructional leadership is used to refer to the role of a school principal in managing curriculum and instruction to positively affect effective student learning. According to Hallinger and Murphy (1985), instructional leadership involves the behaviors of a school principal to promote teaching and learning by involving all the stakeholders into the process. Hallinger and Murphy (1985) further argued that instructional leadership involves three key dimensions: (1) Defining the school mission, (2) Managing the instructional program, and (3) Promoting a positive school-learning climate. Later, Murphy (1988) proposed a fourth dimensions, which is developing a supportive work environment. Duke (1991) explained that the purpose of instructional leadership is to enhance learning effectiveness through six key functions: (1) staff development, (2) instructional support, (3) resource acquisition and allocation, (4) quality control, (5) coordination, and (6) troubleshooting. This is almost similar to Andrew et al. (1991) who assert that instructional leaders use four key strategies to support student learning, which are: (1) resource provision, (2) instructional resource, (3) communication, and (4) visible presence. Regardless of the model, existing literature suggests the key to instructional leadership is to provide a vision, mobilize resources and support, and create a school environment that involves all stakeholders in providing effective teaching and learning for student academic success (Brown & Chai, 2012; Spillane, 2015).

Hallinger (2004) examined the changing role of principals in Thailand using a cultural lens. The traditional role of the school principal has been that of administrator or manager. Efforts by principals to act in ways that depart from this conservative or managerial orientation are likely to face overt and covert resistance from above and below, as well as inside and outside the school. In the light of this tendency, what could be more disconcerting to a school administrator than sudden pressure to assume the role of a leader of innovation? If it is true that a managerial orientation characterizes the historical role of American principals, scholars have argued that this tendency is even stronger in Thailand and other Asian nations (Dimmock, 2000). Thai principals emphasize their managerial role and rely strongly on the use of position power. In the Thai school, for example, the principal is traditionally viewed as the sole decision maker. Principals naturally expect their orders to be followed with relatively little discussion, few questions from staff, and no overt dissent. This would be the same in terms of relationships between principals and their subordinates, as well as between teachers and their students. This managerial approach served both Thai principals and the school system well during periods of stability. It allowed the educational system to develop its internal capacity while gradually adapting to incremental changes in its environment. However, in this era of global educational reform, a managerial emphasis may be less effective. Leithwood (1996) cogently noted some of the reasons for this changing requirement:

From this [recent] redistribution of power and responsibility [in school systems] has emerged a decidedly different image of the ideal educational organization ... This is an organization less in need of control and more in need of both support and capacity development. Organizational needs such as these seem more likely to be served by practices commonly associated with the concept of leadership ... than administration. (p. vi)

The traditional position power of Southeast Asian principals remains a useful tool during the change process. It can be used, for example, to gain staff attention during the initial stages of change, to obtain

and coordinate resources for training and support, to reinforce the change as a school priority, to exert pressure on staff members who resist the change over a longer period of time, and to gain passage of policy adjustments that would support institutionalization of the change. However, Leithwood (1996) suggested that successful implementation of the current era's educational reforms will require Southeast Asian principals to develop a broader repertoire of behaviors commonly associated with leadership. This leadership role will require principals to use several new capacities (Fullan, 2001): (1) Vision—Understanding educational trends as they are evolving globally and interpreting them in ways that help local practitioners make sense of them; (2) Motivating—Shaping a school culture that motivates and supports students and staff for lifelong learning and change; (3) Organizing—Organizing the school's fiscal, educational, and human resources to achieve its vision of new educational practices. Therefore, it is possible that Thai school principal could provide instructional leadership to facilitate the implementation of sustainability education.

3. Methodology

This study used a qualitative approach (Creswell, 2013) to explore the instructional leadership practices of Thai school principals to implement sustainability education. The study was guided by the following research questions: (1) What is the meaning of sustainability education for Thai school principals? (2) What are the instructional leadership practices of Thai school principals to implement sustainability education?

A purposeful sampling was used to select the participants for the study. The participants were selected based on whether they were principals in a school that is currently implementing a sustainability education curriculum. Principals from schools without a formal sustainability education curriculum were not eligible. A total of 11 Thai school principals participated in the study. Approval for Institutional Review Board (IRB) was sought and obtained to conduct this study. The interview protocol included questions on the demographic profile of the participants, their meaning of sustainability education, and their leadership practices to implement sustainability education.

The participants were interviewed between 20 and 30 minutes through Microsoft Teams, which helps generate a transcript right after an interview. I used memoing after each interview as a way to reflect on the participant's responses in relation to the context and the conceptual framework (Polkinghorne, 2005). I elected to use pseudonyms to protect the identities of the participants. For the data analysis aspect of the study, I used an open coding process (Creswell, 2013). Then, I categorized the raw codes to generate the emerging themes. I have reached out to about 50% of the participants by sharing the transcripts with them, as a way of doing member checking and ensure the trustworthiness of the data.

4. Findings

4.1 Profile of the Participants

A total of 11 Thai school principals agreed to participate in the study. To honor the promise of protecting their anonymity and privacy, the names of the schools and participants will not be revealed. Whenever it is needed, an alias will be used to refer to a given participant. The participants were all principals in a school that includes sustainability education as part of their curriculum. As described in Table 1, 5 of the

participants were females and 6 were males. The majority of the participants were from primary schools, have a bachelor's degree, and years of experience as a school principal ranging from 3 to 12 years.

Table 1: Profile of the participants by gender, education, years of experience as principal, and school level

Participant alias	Gender	Education	Years of experience as principal	School level
Anong	Female	Master's degree	10	Secondary
Aroon	Male	Bachelor degree	5	Secondar
Chai	Male	Master's degree	12	Secondary
Chariya	Female	Bachelor degree	7	Primary
Decha	Male	Master's degree	8	Primary
Fon	Female	Bachelor degree	9	Primary
Hom	Female	Master's degree	4	Secondary
Mae	Female	Bachelor degree	3	Primary
Panit	Male	Bachelor degree	4	Primary
Sayang	Male	Bachelor degree	6	Primary
Somsak	Male	Master's degree	7	Secondary

4.2 Findings for Research Question 1. What Is the Meaning of Sustainability Education for Thai School Principals?

During the first coding process, there were recurrent words and phrases that were consistent regarding the meaning the study participants assign to the term sustainability education. The participants were repeatedly using phrases such, something about the environment, educating about the planet earth, teaching about climate change, sufficiency living, learning on biodiversity, teaching resilience, learning about the globe, and other similar concepts. However, when collapsing the keywords from the first order of coding, the main themes that cut across the majority of the participants' answers were educating for sufficiency mindset, environmental education, global citizenship education, and an ongoing challenge.

4.3 Educating for Sufficiency Mindset

From the first minutes of the interviews through the end, participants were referring a lot to the King sufficiency economy philosophy. For them, such philosophy serves as the basis for sustainability education, which they believe is about educating students to learn to manage the limited resources that are available in their environment. Chai, a male secondary school principal, said:

Our school is all about a sufficiency mindset. We embrace the sustainable economy philosophy to education. Our students learn how to be resilient and to live a balanced life. We are recently certified as a school. I am very proud about that.

Further, the participants shared that having a sufficiency mindset is a way of life that is integrated in the curriculum of their schools. As Chai said, "Sustainability education is teaching students to be resilient, self-reliant, and know how to take care of their community".

UJSSES IJSSES

4.4 Environmental Education

Many participants believe that sustainability education aims to develop awareness, character, and a mindset regarding the environment. In fact, many participants believe that sustainability education is synonymous of environmental education. Sayang said "It is teaching how to protect the environment". Fon put it that way, "Sustainability education is to teach how to protect our environment and live a better life". Others said, it about helping students understand how to love their community and protect it. For example, Chariya shared, "For me, sustainability education is about protecting our environment. This is where we live. We need to protect it and educate our children how to protect it as well."

4.5 Global Citizenship Education

For more than half of the participants, sustainability education is not just about the local or national environment where one lives. Many participants made references to activities on global citizenship education that they attended. Such events were organized by UNESCO in connection to the 2030 sustainable development goals. It appears that participation in the UNESCO events has influenced their perspectives on the meaning of sustainability education. Many participants believe that sustainability must be seen locally, but also globally. Hom said:

Basically, it is to help people understand that we are citizens of the world. So, we need to worry about each other. What happens in other countries can affect us. We need to protect our values and culture also.

4.6 An Ongoing Challenge

All of our participants were from schools that have been certified for providing a sustainable education curriculum. Therefore, it is understandable that all of them had clear ideas about what sustainability education is. However, all of them acknowledged that sustainability education is a challenge to implement, because of the daily socio-economic reality of their stakeholders, particularly, their teachers, students, and their parents. Mae put it this way, "It is an ongoing challenge to teach sustainability education when teachers or even some parents think it is something that is imposed on them by international organizations or powerful countries". Additionally, the participants talked about the subtle resistances they encounter to implement sustainability education. This has informed how they perceive sustainability education. Panit confessed, "Sustainability education, sometimes I do think some of it is wishful thinking for low-income people or people who have very little...".

4.7 Findings for Research Question 2. What Are the Instructional Leadership Practices of Thai School Principals to Implement Sustainability Education?

Research question 2 asked "What are the instructional leadership practices of Thai school principals to implement sustainability education during covid-19" The themes that emerged were a unified vision for sustainability and sustainable living, self-directed learning initiatives, adopting a curriculum, motivating teachers and students on sustainability, connecting the school vision to sufficiency economy, and professional development for teachers on environmental education.

4.8 A Unified Vision for Sustainability and Sustainable Living

All the participants in the study emphasized the creation of a unified vision in their school for sustainability education and sustainable living. Some participants pointed to the fact that we live in a global world, and they believe it is their role to help their students, teachers, and parents understand that. Somsak, a secondary school principal, put it best:

The most important thing for me as a principal is the vision. I shared the vision to the teachers, the parents, the students...We do our best to practice it in our lesson plans, how we consume energy, use water, doing recycling, and so on and so forth...So, sustainability is a daily practice...

Obviously, providing a vision is a key function of instructional leadership. As Somsak quotation shows, it is not just to share the vision. It is important to know how to implement it. This requires a certain ability from a school principal. Some participants confided that when they started as a school principal, they were not versed in sustainability education or knew little to nothing about the subject. So, they had to make a personal effort through some self-directed learning initiatives.

4.9 Self-Directed Learning Initiatives

Principals shared that they started by educating themselves on sustainability education, so that they can be a support for their school. Some of them took initiatives such as actively searching for webinars on sustainability education and sustainable development, so that they can educate themselves. Others said, they have read information online, so they could learn more about the concept. Fon shared, "I hardly knew anything about it. I realized if I had to do my job as a principal, I had to learn about it. So, I made the effort to use resources and opportunities to educate myself, and learn, so that I could help my teachers and my school". Others explained that they scheduled times to participate in activities organized by their network.

4.10 Adopting a Curriculum

Nearly all the participants evoked adopting a curriculum as a key practice to implement sustainability education in their schools. Decha explained "We have a sufficiency-based curriculum in our school. Our teachers are trained on it....." It is important to note that the adoption of the curriculum was not necessarily based on a decision-making process controlled by the principals themselves. It was mostly the curriculum used by a network of schools. Fon said, "It is not like I chose the curriculum myself. But we have one that other schools use, and that works". The principals explained that they adopt an existing curriculum and embrace it as their own.

4.11 Motivating Teachers and Students on Sustainability

The participants consider sustainability as a way of life. They shared their efforts to try to motivate teachers and students as often as possible. Some participants explained that they put their focus on the teachers, so that teachers can help motivate students on sustainable living. Others said that they target both teachers and students in their intent to motivate on sustainability. For example, Aaron shared, "Sustainability is a way of life in our school. I try to uplift my teachers and my students by sharing messages with them.

Sometimes, it is a reminder about why we use electricity wisely, why we use water wisely. Other times, I find a motivating meme and I share it on Line..."

4.12 Connecting the School Vision to Sufficiency Economy

For many participants, it is easy for any regular Thai person to relate to the concept sufficiency economy, because it originates from a King that the majority of Thai people love. Connecting education for sustainability is sometimes connected to sufficiency economy as a way to motivate all stakeholders. Hom said:

Thai people are very proud of the sustainable economy philosophy. And that philosophy is about sustainability education. So, when we connect the two, things are more acceptable to parents, teachers, and students. They buy into the philosophy, the vision, even if it is not always easy....

4.13 Professional Development for Teachers on Environmental Education

Every participant in the study talked about the role of professional development for teachers in order to implement sustainability education in their school. Some participants said that their school funds the participation of their teachers to professional development workshops, webinars by paying their attendance fees. Other participants explained how they shared every professional development opportunity with their teachers. Chai explained, "We help our teachers receive training for professional development. They develop learning tools for their class. Many teachers participate on workshops and webinars, and that helps a lot". Overall, all the school principals have engaged in instructional leadership practices of identifying resources and providing support to their teachers to benefit from such resources.

5. Discussion, Conclusion and Recommendations

As previously indicated, two main research questions guided the study: (1) What is the meaning of sustainability education for Thai school principals? (2) What are the instructional leadership practices of Thai school principals to implement sustainability education? Addressing research question 1, the majority of the participants' answers that sustainability education signifies educating for sufficiency mindset, environmental education, global citizenship education, and an ongoing challenge. With respect to their instructional leadership practices, the Thai school principals involved in the study shared about fostering a unified vision for sustainability and sustainable living, self-directed learning initiatives, adopting a curriculum, motivating teachers and students on sustainability, connecting the school vision to sufficiency economy, and professional development for teachers on environmental education.

The practices of Thai school principals in implementing sustainability education in their school suggest that they provide a great deal of instructional leadership. They provide the vision for sustainability education (e.g., unified vision for sustainability and sustainable living). They help in the implementation of the curriculum by supporting their teachers (e.g., adopting a curriculum). They contribute to create a school learning environment that is aware of sustainable living (e.g., Motivating teachers and students on sustainability, connecting the school vision to sufficiency economy, and professional development for teachers on environmental education). In other words, their practices involve the classic three dimensions

of instructional leadership, namely determining school missions, managing instructional programs, and creating school learning environment, reported in existing literature on educational leadership (Brown and Chai, 2012; Mattar, 2012). Previous studies have reported how such whole school approach rooted in instructional leadership can help in the implementation of Education for Sustainable Development (ESD) in schools (Mogren et al., 2018). The findings in this study corroborates the importance of the role of the principal in implementing an effective sustainable education, as supported by existing literature (Warner et al., 2015). The support of the school principal in fostering teacher professional development and growth is one of the ways to ensure that the benefits of instructional leadership reach the students (Kadji-Beltran et al., 2012). In fact, some studies have argued that it is important that the principal play an aggressive role in ensuring that sustainable education is implemented effectively (Mogren et al., 2019; Schelly et al., 2012).

This study has implications for practitioners in educational leadership with respect to the implementation of sustainability education. When implementing sustainability education programs, educational leaders should focus on a unified vision for sustainability and sustainable living. Educational leaders are not necessarily aware or knowledgeable of sustainability education content and practice. This should not be an unsurmountable challenge, because they can educate themselves through various means, including self-directed learning initiatives. Educational leadership should understand that they have a responsibility to embrace a curriculum and make it theirs. This enables a leader to become more comfortable in providing support for implementation, as well as motivating teachers and students on sustainability. Obviously, developing teacher competencies in implementing a sustainability education curriculum is essential. The educational leader can facility that by providing opportunities for teacher professional development. In addition, an educational leader can help foster an environment for the effective implementation of sustainability education by organizing events to motivate students about the future of their environment, community outreach initiatives, incorporating sustainability as a theme in school planning, targeting funding for sustainability activities, and developing a system of data collection and monitoring for continuous quality improvement.

References

- Andrews, R.L., Basom, M.R. & Basom, M. (1991). Instructional leadership: Supervision that makes a difference, *Theory into Practice*, *30*(2), 97–101.
- Brown, G. T. L., & Chai, C. (2012). Assessing instructional leadership: A longitudinal study of new principals. *Journal of Educational Administration*, *50*(6), 753–772.
- Creswell, J. W. (2013). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed). Pearson Education.
- Dimmock, C. 2000. Designing the learning-centred school: A cross-cultural perspective. Falmer Press Duke, B. C. (1991). Education and leadership for the twenty-first century: Japan, American, and Britain. Prager.
- Fullan, M. (2001). Leading in a culture of change. Jossey-Bass.
- Hallinger, P., & Murphy, J. (1985). Assessing the instructional management behavior of principals. *The Elementary School Journal*, 86(2), 217–247.

- Hallinger, P. (2004). Meeting the challenges of cultural leadership: The changing role of principals in Thailand. *Discourse: Studies in the Cultural Politics of Education*, 25(1), 61-73.
- Kadji-Beltran, C.; Zachariou, A.; Stevenson, R. (2012). Leading sustainable schools: Exploring the role of primary school principals. *Environ Educ Res*, 19(3), 303-321.
- Leithwood, K. (1996). School restructuring, transformational leadership and the amelioration of teacher burnout. *Anxiety*, *Stress and Coping*, *9*, 199–215.
- Mattar, D.M. (2012). Factors affecting the performance of public schools in Lebanon *International Journal of Educational Development*, 32(2), 252-263.
- Murphy, J. (1988). Methodological, measurement, and conceptual problems in the study of instructional leadership. *Educational Evaluation and Policy Analysis*, *10*(2), 117-139.
- Mogren, A.; Gericke, N; & Sherp, H. (2018). Whole school approaches to education for sustainable development: A model that links to school improvement. *Environ Educ Res*, 25(4), 508-531.
- Mogren, A.; & Gericke, N. (2019). School leaders' experiences of implementing education for sustainable development: Anchoring the transformative perspective. *Sustainability* 2019, 11, 3343. DOI: 10.3390/su11123343.
- Onuki, M.; & Mino, T. (2009). Sustainability education and a new master's degree, the master of sustainability science: The Graduate Program in Sustainability Science (GPSS) at the University of Tokyo. *Sustainability Science*, 4(1), 55-59.
- Polkinghorne, D. E. (2005). Language and meaning: Data collection in qualitative research. *Journal of Counseling Psychology*, *52*, 137–145.
- Schelly, C.; Cross, J.; Franzen, W.; Hall, P.; & Reeve, S. (2012). How to go green: Creating a conservation culture in a public high school through education, modeling, and communication. *J Environ Educ*, *43*(3), 143-161.
- Spillane, J.P. (2015). Leadership and learning: Conceptualizing relations between school administrative practice and instructional practice. *Societies*, *5*(2), 277–294.
- Sufficiency School Centre 2015. *The characteristics of the Sufficiency Economy Learning Centre*: Report prepared by Sufficiency School Centre In-house Researchers.
- Talwar, S., Wiek, A., & Robinson, J.B. (2011). User engagement in sustainability research. *Science and Public Policy*, *38*(5), 379-390.
- Taimur, S., & Onuki, M. (2020). Effective implementation of sustainability education in higher education settings via transformative learning approach: Literature review and framework proposal. In Ş. Orakcı (Ed.), *Paradigm Shifts in 21st Century Teaching and Learning* (pp. 230-251). IGI Global. https://doi.org/10.4018/978-1-7998-3146-4.ch015
- United Nations Educational Scientific and Cultural (UNESCO, 2009). *UNESCO World Conference on Sustainable Development: Bonn Declaration*. Retrieved from: https://unesdoc.unesco.org/ark:/48223/pf0000185056
- United Nations Educational Scientific and Cultural (UNESCO, 2018). Regional expert and consultative meeting on the training manual for monitoring SDG 4 and on conducting the regional progress review of SDG 4 in Asia-Pacific. Retrieved from:

 https://bangkok.unesco.org/content/regional-expert-and-consultative-meeting-training-manual-monitoring-sdg-4-and-conducting
- United Nations (UN, 2015). Sustainable development goals. Retrieved from: https://sdgs.un.org/goals

- Wals, A. E. J. (2011). Learning our way to sustainability. *Journal of Education for Sustainable Development*, 5, 177-186.
- Warner, B., & Elser, M. (2015). How do sustainable schools integrate sustainability education? An assessment of certified sustainable k-12 schools in the United States. *J Environ Educ*, 46(1), 1-22.

290 JJSSES