

# SUSTAINABILITY VALUES: A COMPREHENSIVE FRAMEWORK FOR ADULT EDUCATION

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**Abstract.** Sustainability means prioritising the needs of all life forms and of the planet by ensuring that human activity does not exceed planetary boundaries. Adult education plays an important role in empowering adult learners to foster sustainability and its values. Sustainability competence is guided by sustainability values. Competence is considered as an educational category, thereby adult education is aimed at infusing sustainability values into adult learning. However, sustainability values are an under-explored area in scientific literature. Only sustainability values for children have been listed. The aim of this research is to analyse sustainability values in scientific literature underpinning the creation of a framework of sustainability values to be embedded into adult education. The exploratory research is employed in this work as there is no well-defined framework of sustainability values. Scientific literature review as a method of investigation is deployed. Obtained data are processed via content analysis. A novel framework of inter-related sustainability values was created. The novel framework is based on the principles of interconnectedness and interdependency of sustainability values. The framework categorizes sustainability values from the external and internal perspectives. A new research question has been formulated: What are modern methods to foster adult learners' sustainability values?

**Keywords:** Adult education, external perspective, framework, internal perspective, sustainability, sustainability competence, sustainability values.

## **Introduction**

Sustainability is a response to the global pressing issue of the human impact on the environment (Griswold, 2016) and the Earth planet. Sustainability practice creates the tension between maintaining the status quo and changing our existing structures and relationships (Griswold, 2016). For the tension decrease, adult education plays an important role in empowering adult learners to foster sustainability and its values for promoting environmental, social and governance efficiency (Kwilinski, Lyulyov, & Pimonenko, 2023). Valuing sustainability guides the development of individuals' competences (OECD, 2019). Competence is considered as an educational category, thereby adult education aims at infusing sustainability values into adult learning for interdisciplinary problem solving (Walsh, Böhme, Lavelle, & Wamsler, 2020). However, sustainability values are an under-explored area in scientific literature.

The aim of this research is to analyse sustainability values in scientific literature underpinning the creation of a framework of sustainability values to be embedded into adult education.

The exploratory research is employed in this work as there is no well-defined framework of sustainability values. Scientific literature review as a method of investigation is deployed. The obtained data are processed via content analysis.

## **Research Methodology**

The methodological background of the present research implies the consideration of (OECD, 2019) the principles of

- Interconnectedness: Everything is connected, nothing is excluded, and everything is related.
- Interdependency: one phenomenon impacts the other existing or emerging phenomena.
- Everything in the universe is fluid and in motion.

The principles of interconnectedness, interdependency, and motion are reflected in the research methodology built as the system of external and internal perspectives (Zaščerinska, 2011). This methodology accentuates the existence of two perspectives – external and internal. The external perspective relates to the process, while the internal refers to the process results (Ahrens, Zascerinska, & Aleksejeva, 2021). The methodology proceeds from the external perspective to the internal perspective (Zaščerinska, 2011). Further on, both perspectives are inter-related and interdependent: results depend on the implemented process. If the process is carried out in accordance with the plan and schedule, the intended results are obtained. If the process has some deviations from the plan and schedule, results might be different if compared to the intended results. The

process is in fluid and in motion, therefore the result might change along with the shifts in the process implementation.

The present research is enabled by the research question: What are sustainability values to be infused into adult education?

As frameworks of sustainability values for adult education are under-represented, the exploratory research was used in this work. The exploratory research offers a high degree of flexibility (Ahrens, Foerster, Zašcerinska, & Wasser, 2020) for reaching the research objectives. The present exploratory research is based on the methodology of the system of external and internal perspectives. This exploratory research aims at establishing the formal structure to identify the framework of sustainability values (Ahrens, Foerster, Zašcerinska, & Wasser, 2020). This work benefits from the methodology of the system of external and internal perspectives as it helps shape the framework in a novel way.

Scientific literature review as a method of investigation is deployed. Scientific literature review was carried out within the system of external and internal perspectives. The obtained data are processed via content analysis. Content analysis was implemented within the interpretive paradigm. The interpretive paradigm is applied to the analysis of the socially built meaningful reality (Zašcerinska, Aleksejeva, Zašcerinskis, Gukovica, & Aleksejeva, 2021). Interpretations create a meaning (Zašcerinska, Aleksejeva, Zašcerinskis, Gukovica, & Aleksejeva, 2021). Interpreters are the researcher who take part in the research (Ahrens, Purvinis, Zašcerinska, Micevičienė, & Tautkus, 2018).

The relevant findings, obtained from the data analysis, were structured and, thereby theoretical modelling (Ahrens et.al., 2023a) was used for the construction of a framework of sustainable values.

## **Research Results**

The current research follows the logical chain of analysis. The research will start with the analysis of sustainability in Phase 1, proceeding through the definition of values in Phase 2 to modelling the framework in Phase 3.

Our work is based on the finding that sustainability is the unity of external and internal perspectives (Ahrens, Zascerinska, & Aleksejeva, 2021). This definition of sustainability is now extended with sustainable processes belonging to the external perspective and process's results referring to the internal perspective as illustrated in Table 1.

Table 1 *Sustainability as the unity of external and internal perspectives (the authors)*

Sustainability	
<i>External sustainability</i>	<i>Internal sustainability</i>
Sustainable processes	Sustainability results

The notion of sustainability is not static, it is in fluid. The sustainability notion has changed together with the increased understanding of the processes underlying the development of the Earth ecosystem. Table 2 shows the shifts in perception of the notions and procedures of sustainability.

Table 2 *Summary of the changes in the concept of sustainability (the authors)*

Sustainability concept		
	20 <sup>th</sup> Century	21 <sup>st</sup> Century
<b>Notion</b>	Sustainable development is the development that meets the needs of the present generation without compromising the chances of future generations to meet their own needs and aspirations (United Nations, 1987).	Sustainability means prioritising the needs of all life forms and of the planet by ensuring that human activity does not exceed planetary boundaries (Bianchi, Pisiotis, & Cabrera Giraldez, 2022).
<b>Procedures</b>	Three types of approaches (United Nations, 1987): -Economic, -Social, -Environmental.	Nine Earth system processes (Bianchi, Pisiotis, & Cabrera Giraldez, 2022): 1) biosphere integrity, 2) land-use change, 3) climate change, 4) freshwater use, 5) ocean acidification, 6) biogeochemical flows (nitrogen and phosphorus cycles), 7) atmospheric aerosol pollution, 8) stratospheric ozone depletion, 9) release of novel chemicals.

Table 1 helps realise that sustainability is a complex phenomenon. Additionally, the understanding of sustainability is progressing together with the development of science.

Realisation of sustainable development depends on valuing sustainability. Values are the guiding principles that underpin what people believe to be important when making decisions in all areas of private and public life (OECD, 2019). They determine what people will prioritise in making a judgement, and what they will strive for in seeking improvement (Haste, 2018).

In adult education, values shape sustainability competence (OECD, 2019). Table 3 demonstrates elements of sustainability competence elaborated by Bianchi, Pisiotis, & Cabrera Giraldez (2022).

*Table 3 Sustainability competence (adapted from Bianchi, Pisiotis, & Cabrera Giraldez, 2022)*

<b>Sustainability competence</b>		
<i>Valuing sustainability</i>	<i>Supporting fairness</i>	<i>Promoting nature</i>
Personal values	Equity	Natural environment (geosphere, biosphere, hydrosphere, cryosphere and atmosphere)
	Justice	Other species
		Healthy and resilient ecosystems

It is worth pointing that the analysis of the elements of the sustainable competence elaborated by Bianchi, Pisiotis, & Cabrera Giraldez (2022) on the basis of the methodology of the present research, namely the system of the external and internal perspectives, allows determining them as related to the internal perspective. In other words, these elements are defined as results. Therefore, the sustainability competence is presented in a static manner. It seems that each individual has to decide how to approach this competence. In this uncertain situation related to steps that could bring an individual to the desired result - being the sustainability competence, adult education may perform an important and active role.

Adult education can be considered as the means of the development of an individual's sustainability competence. Due to the guiding role of values, they are expected to be embedded into every subject (OECD, 2019) in adult education. Individuals' competencies and, consequently, values are at the centre of their learning framework (OECD, 2019). While learning framework refers to tools that specify learning outcome (Travers, Jankowski, Bushway, & Duncan, 2019), sustainability value framework is based on framework understanding as the unity of concepts used for a particular study/work/field/etc (Ahrens & Zašcerinska, 2014). Hence, sustainability value framework is defined as the unity of values related to sustainability and, consequently, sustainable development.

Our search for a framework of sustainability values led us to the list of sustainability values for children developed by Barreto et.al. (2013). The list of sustainability values encompasses the following categories (Barreto et.al., 2013): resources, knowledge, feelings, community, environment, and myself. Detailed analysis of the sustainability values created by Barreto et.al. (2013) reveals that the authors included both sustainability processes and sustainability results in their list. Their list of sustainability values is a mixture of sustainability processes and sustainability results. The authors did not specify those in the values' descriptions. Table 4 reflects the list of sustainability values proposed by Barreto et.al. (2013) for children in the light of the system of external and internal perspectives.

*Table 4 Sustainability values in the light the external and internal perspectives (adapted from Barreto et.al., 2013 and extended by the authors)*

<b>Value</b>	<b>A short description</b>	<b>Perspective</b>
Efficiency	Avoid waste	Internal
Awareness	Being conscious about environmental issues	
Accountability	Feel responsible for	
Knowledge	Have general and specific information	
Costs	Learn to the difference between save, afford and worth	
Respect	Think of others and of the environment	
Fairness	Do the right thing	
Empathy	Understand and consider others	
Personal Effort	Commit and do more than required	
Future generations	Being selfless, humble, protective	
Thoughtful	Being considerate and polite	
Necessity	Dependence and importance of the environment for humankind survival	
Negative Consequences	Avoid punishment and unsanitary conditions	
Creativity	Transformation and initiative	External
Management of resources	Reduce, reuse, recycle, balance usage and consumption	
Ability to act	Feel empowered, ability to act and the children's influence on their parents	
Cooperation	Sharing and cooperation between different generations	
Communication	Interact with others and learn to share	
Preservation	Protect and save the environment	
Learning	Acquire skills	

Taking into consideration the results of our analysis carried out within the present research, Table 5 presents the framework of sustainability values.

*Table 5 Sustainability values from the external and internal perspectives (the authors)*

<b>Sustainability values</b>	
<i>External perspective</i>	<i>Internal perspective</i>
<i>Sustainable processes</i>	<i>Sustainability results</i>
Nature	Human individual
Other species	Personal values
Equity	
Fairness	
Justice	

It is worth noting that this list of sustainability values is not exhaustive. Together with the development of science and other aspects of our life, sustainable values presented in Table 4 can be updated.

As our research is based on the principle of interconnectedness and interdependence, the external and internal perspectives of sustainability are inter-related as well. Table 6 presents the framework of sustainability values from the external and internal perspectives.

*Table 6 Framework of sustainability values (the authors)*

<b>Sustainability values</b>	
<i>External perspective</i>	<i>Internal perspective</i>
<i>Sustainable processes</i>	<i>Sustainability results</i>
Use of resources	Low carbon
Reflection	Personal values
Green space	Well-being
Cooperative activities	Reduced socio-economic inequalities
Teamwork	Human health
Learning	Equity
Climate change	Psychological well-being, mental health, and emotions
Physical interaction with the natural environment	Feelings, restoration of nature
Safe and clean environment	Justice
Reduction of emissions	Climate neutrality
Shared economy	Decreased consumption

It should be noted that only a few examples of the inter-connections between sustainability values from the external and internal perspectives can be found in Table 5. In Table 5, the values in the framework are not just listed. They are shown in their interconnectedness and interdependency. Sustainability values related to results are dependent on the values referred to the sustainability process. As the sustainability process changes, sustainability results are in motion, too.

## **Discussion**

The present work supported the creation of a novel complex framework of inter-related sustainability values. This novel framework is not just a list of sustainability values if comparing to the research implemented by Barreto et.al. (2013). The novel framework of sustainability values is built on the principles of interconnectedness and interdependency of sustainability values. Moreover, the framework proposes a new approach to the categorization of sustainability values, namely the external and internal perspectives. Figure 1 demonstrates the novel framework of sustainability values.

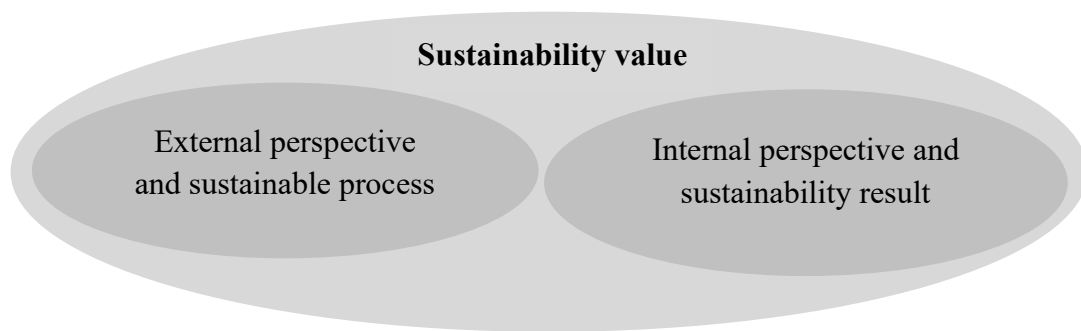


Figure 1 Sustainability value framework (the authors)

In adult education, sustainability values' infusion into adult learning is based on the regularities formulated by andragogy. Although, sustainability values outlined for children by Barreto et.al. (2013) can be applicable to adult education as adult learners might show different levels of competences and experience. However, the use of sustainable values, designed for adult education, in children education might be problematic due to the lack of children life experience required for understanding complex phenomena. It should be pointed that adult education is based on the regularities formulated by andragogy while children are educated by pedagogical means. Andragogy and pedagogy have some similar regularities. However, andragogy implies the education of experienced learners while pedagogy focuses on learners without previous experience. Therefore, the novel framework of sustainability values cannot fully be adapted to children education. Both andragogy and pedagogy recommend a gradual implementation of the educational process in certain sequence (Ahrens, Zascerinska, Filimonova, & Bikova, 2023). Conventionally, the educational process is built in an ascending manner: from the simple to the complex, and from the easy to the difficult. Therefore, there is the high-priority need in educators training to integrate sustainability into adult education (Bianchi, Pisiotis, & Cabrera Giraldez, 2022). Training has to empower educators to learn and to be able to transfer to adult learners how to bridge the major tension within sustainability practice, being the tension between maintaining the status quo and changing our existing structures and relationships (Griswold, 2016).

## Conclusions

The theoretical analysis of scientific literature allows concluding that sustainability values are an under-explored topic in scientific community.

The use of the methodological background is validated by the results of the present research. The achieved research results highlight the significance of the interconnectedness, interdependency and motion when determining the inter-relations between sustainable values from the external and internal perspectives.



The leverage of the exploratory methodology in the given work allows building a formal structure for the identification of a framework of sustainability values. It includes

- Analysis of the key concepts such as sustainability, values, and framework in Phase 1,
- Analysis of the existing models of frameworks of sustainability values and their comparison in Phase 2, and
- Creation of a new framework of sustainability values in Phase 3.

The theoretical analysis leads to the conclusion that sustainability values can be of the external and internal perspectives. Sustainability values of the external and internal perspectives are inter-related. Sustainability values develop and change together with the science progress. Sustainability values guide the development of individual's competences. Despite the guiding role of sustainability values in the development of individual's competences, sustainability values in adult education have not been adequately explored by the scientific community. Theoretical modelling of sustainability values from the external and internal perspectives facilitated the establishment of links between external and internal sustainability values. The use of sustainability values in adult education from only one perspective might mislead the development of individual's competences.

The new research question has been formulated: What are modern methods to foster adult learners' sustainability values?

The carried out research experienced some limitations. As the topic sustainable values is under-explored, only few works could be found via google search and analysed. For analysis only digital materials were selected. The research was also limited by the analysis of scientific literature in English only.

Further research intends to increase the search for non-digital materials for analysis. Analysis of scientific literature in other languages will be carried out, too. Implementation of empirical studies on use of sustainability values in adult education is proposed as well.

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