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Editorial

A Co-evolutionary Perspective in the Search for Sustainable Education

Dear readers and members of the Open Network of the Journal of Teacher Education for Sustainability (JTES) associated with Daugavpils University UNESCO Chair on Interplay of Tradition and Innovation for Education for Sustainable Development,

With each issue of the JTES, we are becoming wiser and seeing more clearly the path of our own action research as JTES development. The need to choose this path becomes important both for those who participate in the building of the Journal identity with their first research article and for those who have done it repeatedly. The path has been walked for a long time and the need for a dialogue and reflexive conversations about the purpose of the path is shaping all of us. In the introductory article to the current issue of the JTES, we will address two situations where authors who submit their articles to the JTES for the first time may "slip up", and where the experienced members of the network may also "slip up".

The first situation for slip-up: the article does not reflect the specific topic and does not meet the JTES requirements.

- Since 2007, the JTES has not been publishing articles if they only explore a topical educational issue but do not address the topic of *teacher education for sustainability*. To maintain a common orientation, authors are encouraged to link their topic of specific interest to the use of the ideas of *sustainability education, the phenomenon of sustainability* and *sustainable development*.
- Since 2016, the JTES authors are offered to engage *in the development of the JTES philosophy and identity*, in addition to their specific research engagement with sustainability. Therefore, authors are offered the opportunity to look at their original research *from a broader perspective* and to explore the views of authors published in previous issues of the JTES. Through the discussion of the shift in the perspective of the research, it may appear that a shift in the perspective can lead to the discovery of unsustainable relationships.

The second situation for slip-up: the current Anthropocene epoch has diminished education researchers' interest in the co-evolution of nature and man. There is much to do in this area because the Anthropocene has reduced human sensitivity to nature and learning via nature. We have lost an understanding of the causes of the complex problems of the current climate change, diversity, causes of sustainable education and other wicked issues.

A broader perspective on the phenomenon of co-evolution also challenges the recognition and use of transdisciplinary approach in the search for sustainable education, and the investigation of more natural development of individual sensitivity and sensibility on the nature in the context of inseparable relationships between nature and humanity. The current unsustainable state of education expects solutions that are "learning through nature" type. This is the one way in which we can influence what happens around us.

The current issue of the JTES presents 12 research papers developed by 37 authors from 16 countries. In their research, our authors move towards the investigation of current complex problems and encourage us to search for the harmony between nature and human being, and to explore the deepest roots of humanity.

Research papers of our authors are available at https://sciendo.com/journal/jtes and the summaries of 12 research papers are presented below.

In the first article, *Ecocriticism Course: Development of English Pre-service Teachers' Pedagogical Content Knowledge of Sustainability*, Jepri Ali Saiful, representing Taiwan and Indonesia, and Ari Setyorini from Indonesia address a paucity of knowledge on a way to enhance pedagogical content knowledge of sustainability (PCKS). The authors of the study developed an ecocriticism course and investigated its impact on English pre-service teachers' PCKS. The results showed that during the course the English pre-service teachers developed their PCKS, i.e., knowledge to create and provide learning opportunities for English learners to enhance their sustainability capacity. The authors suggested integrating an ecocriticism course into the curriculum in order to orient English teacher education institutions towards sustainability.

The team of authors – Mykyta Peregrym representing Ukraine and Slovakia, Ingrid Turisová (Slovakia), Alexander Tashev (Bulgaria), Erika Pénzesné Kónya (Hungary), Nataliia Matsai and Yuliia Havryliuk (Ukraine) – in the second article, *Using Citizen Science Tools for Distance Field Study of Botanical Cycle Disciplines in Times of Pandemic and Beyond*, present a future oriented vision of the solution to biodiversity and sustainability education. The authors generalized their experience and developed protocols through iNaturalist platform (https://www.inaturalist.org/) for effective use of citizen science tools not just for distance learning of botanical cycle disciplines in the pandemic time and beyond, but also for collecting valuable data about plant distribution during this process.

In the third paper, *The Relationship Between Sustainability and Food Consumption in Teacher Training*, Patricia Esteve-Guirao, Isabel Banos-González and Magdalena Valverde Pérez from Spain explore the relationships that future teachers establish between food consumption and sustainability, as well as their intentions to act and their competences in ESD, after a training program. The results showed that, although the future teachers set adequate relationships, they still had significant difficulties in accepting the need for ambitious changes in their diets. Their educational proposals are focused on the diagnosis of the problems instead of the assessment of the sustainability of eating habits and the empowering of learners to take responsible decisions and actions.

In the fourth paper, *Promoting Householders' Participation in Household Waste Sorting: A Case for Learning Aluminum Packaging Recycling in Spain*, the authors – Olga Roger-Loppacher, Pilar Buil, Mireia Tintor from Spain and Vanessa Prieto-Sandoval from Colombia – propose informal education to raise awareness among homemakers about recycling, especially aluminum packaging recycling, using workshops and compensating the factors that act as barriers to recycling in Spain. The results are the "Spaces

for Dialogue" strategy to increase knowledge, awareness, and recycling intention. The findings present the main barriers to closing the gap between intention to action, and the study highlights the role that mentors play as teachers in facilitating communication and education for sustainable development.

Next paper, *Ensuring the Child's Right to Communication With Both Parents in the Context of Parental Divorce: A Lithuanian Case Study*, by Brigita Kairienė, Asta Valackienė and Jolanta Blauzdžiūnaitė-Pavlovič from Lithuania is aimed at examining the child's legitimate right to communicate with both parents in the context of divorce and support arrangements. The research problem is focused on analyzing the impact on sustainability, the child's emotional well-being and the protection of the child's rights in the situation of parental divorce. The results of this study reveal that the parent living with the child after the divorce acts contrary to the best interests of the child, denying the child's inherent right to be raised and educated by both parents.

In the study, *Who is the 'Guardian of the Sea'? A Narrative Practice Approach Analysis of a Short Story Book for Six to Eight Years Old on the Main Character's Environmental Identity Construction*, Athanasia Chatzifotiou from the United Kingdom used a story book "Ella Saves the Oceans" by J. D. Green (2019) for young readers (aged 6–8) to explore environmental identity features and their potential impact upon its young readers. The analysis showed a gradual construction of the main character's environmental identity; moving from passivity and ignorance to agency and knowledge. The idea of reading an environmental story as a "formative" experience is discussed in relation to literature relevant within sustainability education pedagogies.

In their paper, *Reflections of Good Practice of Infusing ESD to Improve Education Outcomes for Indigenous Learners in Light of a Global Pandemic*, Katrin Kohl and Charles Hopkins from York University, Canada, offer reflections on the potential of infusing Education for Sustainable Development in the classroom, the school and the community as a whole, to deal with known and yet unprecedented sustainability challenges in presenting commonalities of 32 good practice reports from 21 countries collected in advance and during the global pandemic.

The eighth paper by Katharina Ameli from Germany, *Where is Nature? Where is Nature in Nature and Outdoor Learning in Higher Education? An Analysis of Nature-Based Learning in Higher Education Using Multispecies Ethnography*, emphasizes the significant role of sustainable education in all educational institutions. The author claims that particularly in higher education, the inclusion of nature and animals in the curricula is underrepresented. By using the method of Multispecies Ethnography, the presence of nature in online-based nature and outdoor learning in higher education is discussed. The results of the study show that a relationship with nature leads to a change in one's worldview, which is evidence of the methodological importance of introducing nature in the learning process. The results also illustrate that direct interaction with nature is essential for a paradigm shift in education.

The ninth research paper, *New Wine Needs to Be Put Into New Bottles: Legitimating Education for Sustainability in South Korea's Higher Education Institutions*, by Sung-Sang Yoo and Minjeong Jeon from Korea critically examines the practices of teaching and learning for the Sustainable Development Goals (SDGs) in the context of higher education institutions (HEIs) in South Korea (Korea). By using a case study, the paper offers a close examination of the practices carried out at Seoul National University and Kyung Hee University in Korea, focusing on how the SDGs are embedded in teaching

and learning for sustainable development and identifying barriers and challenges in the process. The study reveals the gap between the rhetoric and the reality of teaching and learning for the SDGs from the perspective of transformative learning and offers policy suggestions to provide a well-rooted practice of educating the SDGs in Korean HEIs.

The tenth paper, *State of the Research on Teacher Education and Sustainability: A Bibliometrics Analysis*, by Mahendar Reddy Gavinolla representing India and Latvia, Agita Livina (Latvia) and Sampada Kumar Swain (India), examines the progress of the research on teacher education for sustainability in terms of growth, evolution, influence and significant research themes. The authors analyzed 1782 documents indexed in the Scopus database over three decades starting from 1991 to 2020 by using bibliometric analysis. Results show that there has been a significant increase in yearly publications and citations over the years, trending research papers, productive authors, institutions and countries and thematic areas of research. The most commonly published themes are education for sustainability, Agenda 21, sustainable development education, environmental education, and later the focus shifted to teacher training, teachers, education, values, teaching and education policy, and sustainability competencies.

Next paper, *Is Sustainable Development Really Sustainable – Theoretical Reflections, Statistics and the Need for Changes*, by Elita Jermolajeva and Inese Trusina from Latvia is aimed at explaining holistically the main provisions of sustainable development in the nature-society-human system based on the methodology for analyzing changes in energy flows and the power of socio-economic systems. The authors consider sustainable development in the nature-society-human system to be consistent with the laws of the global evolution of living nature and the laws of the historical development of humankind. The paper focuses on key questions concerning the new concepts of sustainable development; the methodology for designing the sustainable development using the concept of energy flows in open, non-equilibrium stable systems and power change analysis approach. Th authors highlight that one of the most important primary things in order to bring about change in people's thinking, understanding and attitude towards sustainability issues is their education in different forms – formal education and non-formal education opportunities.

The final paper, *Knowledge, Perceptions and Readiness of Nigeria's Beginning Teachers for Sustainability Education*, by the team of authors – Biodun Ogunyemi, Ayodeji Ifegbesan, Henrietta T. Benedict, Adeola O. Ogunsanya, Olufunmilayo T. Iyunade, Afolabi Olubela, Babalola Itasanmi, and Kehinde Edewor – from Olabisi Onabanjo University, Nigeria, states that beginning teachers should be adequately prepared for their roles as propagators of sustainable development core messages. Their study assessed current knowledge, perceptions and readiness of two hundred randomly selected final-year undergraduates from the Faculty of Education of the Nigerian University. Results revealed gaps in the awareness and understanding of sustainability concepts and issues among the respondents. The study recommends infusion of sustainability concepts in teacher education curricula and promotion of sustainable development issues through students' activities within and outside university campuses to address knowledge gap and sustain interests in sustainability education among beginning teachers.

We are thankful to all the authors of the JTES who contribute to the development of the Journal and show us the results of their research in different ways.

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