

Curriculum Innovation in Higher Education in our Interconnected World: Collaborative Learning for a more Equitable and Sustainable Future

Innovazione dell'insegnamento universitario nel contesto di un mondo interconnesso: l'apprendimento collaborativo per un futuro equo e sostenibile

Roberta Piazza

Full professor of Education | Department of Educational Sciences University of Catania (Italy) | r.piazza@unict.it

Jose Roberto Guevara

Associate Professor | International Development School of Global, Urban and Social Studies | RMIT University | Melbourne (Australia) | roberto.guevara@rmit.edu.au

OPEN ACCESS

Siped
Società Italiana di Pedagogia

Double blind peer review

Citation: Piazza R., & Guevara J.R. (2023). Curriculum Innovation in Higher Education in our Interconnected World: Collaborative Learning for a more Equitable and Sustainable Future. *Pedagogia oggi*, 21(2), 26-32.
<https://doi.org/10.7346/PO-022023-03>

Copyright: © 2023 Author(s). This is an open access, peer-reviewed article published by Pensa MultiMedia and distributed under the terms of the Creative Commons Attribution 4.0 International, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. *Pedagogia oggi* is the official journal of Società Italiana di Pedagogia (www.siped.it).

Journal Homepage

<https://ojs.pensamultimedia.it/index.php/siped>

Pensa MultiMedia / ISSN 2611-6561

<https://doi.org/10.7346/PO-022023-03>

ABSTRACT

This paper emphasizes the need to provide students and teachers with knowledge and skills to tackle global challenges as responsible professionals and citizens. To achieve this, universities need to encourage curriculum innovation to prepare students to contribute to a sustainable future through collaborative learning. Collaborative learning values interdisciplinary learning, boosts students' collaborative skills, and facilitates teachers and students working and learning together. To accomplish this, universities need to empower faculty members with professional development and supportive workplace policies that encourage collaboration. With less than a decade to achieve the Sustainable Development Goals (SDGs), and the rise of the technoscientific revolution and collaborative intelligences, understanding and acting on these intricate connections between the environment, prosperity, and social wellbeing is essential. We expect universities to collaborate, therefore university curricula need to recognise and build these capacities for collaboration in both staff and students not just for an inter-connected but for a better world.

Il contributo sottolinea l'urgenza di fornire alle persone competenze vitali per affrontare le sfide globali come professionisti e cittadini responsabili. Per raggiungere questo obiettivo, le università devono adattare curricula e metodi di insegnamento per preparare gli studenti a un futuro più equo e sostenibile.

Il modello di apprendimento trasformativo sostiene la cooperazione interdisciplinare, stimola la collaborazione fra studenti e evidenzia la necessità di un maggiore lavoro di squadra tra educatori e studenti per creare esperienze di apprendimento significative. A tal fine, le università devono potenziare i docenti per sostenerli in tali approcci. A meno di un decennio dalla scadenza del 2030 per il raggiungimento degli Obiettivi di Sviluppo Sostenibile (SDGs), e con l'esplosione della rivoluzione tecno-scientifica e dell'intelligenza collaborativa che evidenziano le intricate connessioni tra ambiente, prosperità e benessere sociale, le università devono collaborare e assumere ruoli cruciali nella co-creazione di approcci educativi per un mondo interconnesso e migliore.

Keywords: university | pedagogical approaches | collaboration | transformative learning | sustainability

Parole chiave: università | approcci pedagogici | collaborazione | apprendimento trasformativo | interconnessione della sostenibilità

Received: September 1, 2023

Accepted: October 26, 2023

Published: December 29, 2023

Corresponding Author:

Roberta Piazza, r.piazza@unict.it

Introduction

What is innovation? This was the central question that brought us together as part of the Jean Monnet Network on Social and Scientific Innovation to Achieve the Sustainable Development Goals (SSIASDG)¹. As passionate educators based at universities in Italy and in Australia, the Authors argued that any socio-scientific innovation will only succeed if we recognize the significance of incorporating learning not just to promote innovation, but as an integral part of innovation itself. Consequently, we began to reflect and share how our respective universities have committed to preparing students to confront the current global challenges within the framework of the SDGs. While it is crucial for universities, particularly at the leadership and policy level, to acknowledge these global challenges, for us, it is within the classroom that innovation takes place. Initially we shared our own individual innovative endeavours. However, we soon realised that while there are numerous pedagogical approaches that have identified what to teach – such as the popularity of 21st century skills or skills of global citizenship amongst educators committed to the SDGs –, and how to teach – exemplified by as collaborative and problem-based learning approaches, there is a limited recognition of the underlying characteristics that this innovation genuinely demands. This paper aims to share our reflections within the scope of our work, as educators and researchers, committed to contributing to a transformative pedagogy, drawing on our work within the university and the broader community. We particularly focus on re-thinking collaborative learning.

This article doesn't intend to prescribe actions for educators, like ourselves, to tackle the global challenges identified by the SDGs. Our approach is to mirror how we have identified the characteristics of pedagogical innovation required: to motivate educators to reflect on the pedagogies we have been educated with and have subsequently incorporated or adapted in our teaching roles within the university.

The article will initially contextualize the global challenges as framed by the SDGs and the UNESCO World Higher Education Conference 2022², situating ourselves within our professional challenges, and attempts at engaging with our students in Italy and Australia. We invite readers to consider what we have described as an innovative pedagogical approach, involving our re-thinking our own practice of collaborative learning.

1. Higher Education Institutions responding to the sustainability challenges

Higher Education Institutions (HEIs) have the obligation and the potential to contribute significantly to sustainability, addressing complex ecological, societal, and economic issues (UNESCO, 2022; Gibson, 2006). The United Nations Sustainable Development Goals (SDGs) (2015), consisting of 17 objectives and 169 targets, despite some criticism (Adelman, 2018), offer a viable framework for a more sustainable future. This framework highlights sustainability challenges as intricate *wicked problems*, demanding holistic and systemic approaches due to their complexity, time demands, and diverse stakeholders (Waddock, 2013). Within the SDGs, a specific target on education for sustainable development and global citizenship in SDG4 focuses on accessible and inclusive education, empowering individuals with expertise, skills, and values crucial for respectable living, personal growth, and societal contribution (UNESCO, 2021a).

Universities, serving as bastions of unfettered expression and communal dialogue, assume a pivotal role in fostering cooperation and solidarity to advance their educational aims. Despite several studies that have indicated that post-secondary education has devoted a limited contribution to a change in graduates' knowledge and attitudes (Mintz & Tal, 2018), it is incumbent upon HEIs to accord primacy to their commitment to sustainability and societal obligation. This imperative emanates from the fact that HEIs

1 The Social and Scientific Innovation to Achieve the Sustainable Development Goals (SSIASDG) Network is hosted by the EU Centre of Excellence at RMIT University, Melbourne, Australia and funded by the Jean Monnet Foundation (2020-2023). It brings together researchers and educators working across Australia, New Zealand, Singapore, the UK, and the EU to examine the role of the EU's Smart Specialisation in linking scientific and social innovation, and how this can help deliver global action to address societal challenges.

2 See: <https://www.unesco.org/en/higher-education/2022-world-conference>.

actively contribute to the cultivation of a more sustainable global milieu through their endeavours in learning, scholarship, and civic involvement (Park, Licon, & Sleipness, 2022).

The development of a new social contract for higher education, as emphasised by UNESCO in the *Futures of Education Report* (2021b), necessitates the implementation of a systems-oriented approach and the advancement of acknowledging broader system boundaries and cause-effect relationships (Svanström, Lozano-García, & Rowe, 2008). The application of a systems approach is evident not just in the interconnectedness between society, economics, and the environment, but also in the internal connections within the environmental pillar. In addition, there is a growing recognition that this broader systems-oriented approach will need to recognise that the very definition of sustainable development is contested and that often we as educators miss recognising the cultural and political dimensions of sustainability (Huckle & Wals, 2015).

Given the emergence of the techno-scientific revolution and collaborative intelligences that demonstrate the interconnectedness of the environment, prosperity, and social well-being, universities have a moral obligation to play a decisive role in shaping the teaching and learning for a new interconnected and dynamically changing world. While widespread adoption of education for sustainable development (ESD) in HEIs can transform the thinking and decision-making of society's leaders, we must critically evaluate our educational systems and analyse our dominant educational paradigm (Saykili, 2019; Kaputa et al., 2022). According to Cortese (2003), our higher education systems can promote sustainability, but we also need to acknowledge that "it is the people coming out of the world's best colleges and universities that are leading us down the current unhealthy, inequitable, and unsustainable path" (16).

For universities to cultivate graduates who possess the characteristics of conscientious professionals, advocates for sustainability, and defenders for social justice, it is imperative to promote the development of inquiry, critical thinking, and creativity among students. This objective is aimed at equipping them with the capacity to discern reliable evidence from misinformation and to effectively utilise their knowledge in tackling complex problems. The development of skills in critical thinking, which numerous scholars acknowledge as having a democratic or emancipatory character (An Le & Hockey, 2022), the facilitation of creativity, the promotion of reflective thinking, and the incorporation of affective components such as values and attitudes (Shephard, 2008), are crucial in preparing students to tackle global challenges and create innovative solutions.

What are the implications for universities resulting from the attainment of these goals? Significantly, HEIs are confronted with a substantial transformation in their perception of education, encompassing both the content and methodology of education, as well as the definition of their role as determined by institutional management. There is no singularly straightforward solution, however, it is widely acknowledged that the concept of "reinventing education" (UNESCO, 2022) entails a comprehensive re-evaluation of cognitive frameworks, so transforming the notion of HEIs from one that is elitist and discriminatory to one that facilitates individuals' entitlements through fair, adequately resourced, and permanent opportunities for participation.

While there's broad recognition of the need for educational transformation, it's essential to acknowledge that Higher Education Institutions (HEIs) have been influenced by a neoliberal paradigm that prioritizes economic gains (Mitchell, 2003). This tension arises from HEIs' desire to contribute to systemic transformation in learning while operating within an educational system embracing neoliberal principles. In mainstream discourse, students are often seen as autonomous consumers in education (Brooks, 2022), while institutions compete for students, funding, and improved rankings (Wright & Shore, 2016). This shift in HEIs' priorities towards knowledge production and standardization has made it challenging to promote interdisciplinary collaboration.

Despite these challenges within the university sector, there are efforts within the recognise the need and are planting seeds of change. As educators committed to transformation, we outline our own curricular innovations to facilitating this change.

2. Higher Education for Sustainability: Curriculum Innovation

The complexities posed by the SDGs and the interconnected nature of the global landscape necessitate a comprehensive reassessment of capabilities, pedagogical approaches, and institutional governance within the realm of HEIs, if we are to genuinely achieve innovation and responsiveness. Attempting to identify the capabilities separately from the required pedagogical approaches for sustainability has been challenging. Therefore, we discuss them together and argue that effective curriculum innovation requires aligning ‘what’ we teach with ‘how’ we teach.

Numerous endeavours have aimed to innovate curricula by identifying the essential capabilities that students must acquire to address the global challenges presented by the SDGs. Various proposals have been made regarding the constituents of 21st-century skills, although very few have genuinely embraced skills for sustainability (Fien & Guevara, 2013). To tackle the challenge of SDGs, it is suggested to adopt a transformative approach to learning (Mezirow 1991), that is regarded as imperative within sustainability education (Palmer & Neal, 1994; Pittman, 2004; Sterling, 2003; 2009; 2010; Wolff, 2011; Laininen, 2018). Given its capacity to reshape individuals’ constructions and interpretations of their worldview, it is strongly recommended that HEIs prioritize the adoption of this approach. This involves a concerted effort to cultivate individuals’ awareness of the necessity for collaboration to the advancement of a more sustainable global society.

To achieve this goal, HEIs must adapt their curriculum and teaching methods to respond effectively to the changing educational landscape. They should also recognize that learning is no longer confined to traditional classrooms (Trevisan et al., 2023). This shift towards reevaluating education content and methods stems from the dynamic and interconnected nature of global challenges. It requires a broader perspective beyond simply incorporating SDGs into the curriculum. The current educational focus should move from telling individuals ‘what’ to think to fostering ‘how’ to think and understanding ‘why’ development matters. The development of both critical and creative thinking aligns with UNESCO’s call for quality curriculum innovation (Stabback, 2016).

One aspect of this endeavor involves cultivating self-awareness in university students, acknowledging the influence of their discipline-specific perspectives on their knowledge. Individuals should engage in self-reflection to assess the ongoing relevance of their acquired knowledge in the current context. Education plays a pivotal role by equipping students with the knowledge and skills needed to navigate complex, ever-changing local and global environments (Barth & Rieckmann, 2016). This understanding enables critical analysis and creative engagement, empowering individuals to contribute actively to societal transformation (Freire, 1972). Civic empowerment and sustainable competencies require an educational focus on the learning process rather than mere knowledge acquisition. This approach fosters active participation, adaptability, creativity, and resilience (Varela-Losada et al., 2022), enabling individuals to make effective, ethical contributions to addressing practical challenges, future scenarios, and barriers in their respective domains of influence (Robinson, Pedersen, & Briggs, 2022).

These innovative educational characteristics align with the concept of ‘emancipatory’ Education for Sustainable Development (ESD) (Brundiers et al., 2010). ESD aims to enhance learners’ competencies, empowering them to actively contribute to sustainable development in our interconnected world (Hammer and Lewis, 2023). ESD is rooted in the idea of critical world analysis, as advocated by Paulo Freire. Freire emphasized the importance of recognizing the interplay between text and context, stating that ‘reading the world always precedes reading the word, and reading the word implies continually reading the world’ (Freire, 1983, p. 10). This critical approach deepens our understanding of the social and cultural factors that shape our interpretation of what we read and learn, fostering a more profound grasp of our interconnected global reality.

3. Higher Education for Sustainability: Faculty Innovating

Transformative learning in higher education requires transformative teaching, characterized by fostering open dialogue and active collaboration among diverse perspectives. A transformative pedagogical approach encompasses various components: emphasizing individual experiences, embracing interdisciplinary and

transdisciplinary perspectives, integrating service-learning initiatives, promoting self-directed exploration of information, values, and emotions, and utilizing living labs (Burns, Kelley & Spalding, 2019). Faculty members must reassess their educational approaches, including designing teaching modules, organizing learning arrangements, justifying learning objectives, and implementing assessments (Lozano et al., 2019). Additionally, they are encouraged to adopt a social and constructivist view of learning, empowering students to construct their understanding, interpretations, and knowledge structures. As Lenkauskait et al. (2020) highlight, engaging students in the process of knowledge creation allows them to recognize the multifaceted meanings present in society, equipping them to navigate and direct their educational journeys effectively.

To foster self-reflection in students, faculty members must also engage in introspection regarding their pedagogical practices and research motivations. As Bernstein (1971) noted, disparities in education reflect power distribution and social control in how society selects, classifies, distributes, transmits, and evaluates educational knowledge. This underscores the importance of supporting faculty members in deliberate reflection on their curriculum choices, particularly regarding content and its underlying rationale (van Dijk et al., 2022). Knowledge plays a pivotal role in perpetuating or challenging disparities by connecting cognitive and emotional processes with societal systems and institutions, significantly impacting individuals' capabilities and potential achievements. Concerns about justice relate to faculty members' consideration of individuals' access to knowledge and how that knowledge empowers them to transform personal and societal dynamics (McLean, 2017).

Based on our own experiences, along with inter-disciplinary collaboration and teaching students in cooperative work, facilitating teacher-student collaboration and self-reflective approaches, can be regarded as innovative because they attempt to redistribute the authority that has traditionally been vested in teachers to learners. There is often a fear that sharing power will result in losing one's authority (Timperley & Schick, 2022). Nevertheless, this power-sharing still needs to be facilitated and managed by the teacher, as we still are effectively within a university institution subject to its established rules and norms.

This approach is also innovative because it recognizes that the teacher can and should, in the spirit of sharing power, be a co-learner. This entails a shift from unidirectional knowledge transfer to a bidirectional exchange. Students must recognize the knowledge and experiences they bring, from which teachers can also gain insights. Conversely, teachers should humbly acknowledge the boundaries of their own expertise.

Finally, the sharing of power and recognition of being a learner imply that universities are now sites of co-learning and co-creation of not just knowledge but also of the process of teaching and learning. Although there are established teaching and learning methods that aim to capture this type of learning, they often fall short of fostering genuinely reciprocal learning.

For instance, problem-based learning is one such approach. However, it is frequently the teacher who selects the problem, rather than the student deciding what is relevant to them, their peers, and their local community. This can pose a significant challenge for teachers, as they expose their vulnerability by not possessing extensive knowledge about the problems selected by their students. Nevertheless, by refraining from pretending to be all-knowing, and by being open to recognizing their areas of expertise, teachers can collaboratively address and learn about the problems identified by students. Cardinal and Fenichel (2017) refer to this as relational pedagogy, that values the co-construction of knowledge and meaning through collaboration.

Therefore, when contemplating our roles as scholars and embracing a transformative perspective, it necessitates a profound reconfiguration of the fundamental underpinnings of cognition, emotions, and behaviors. As O'Sullivan et al. (2016) contend, this phenomenon involves a deep-seated and enduring transformation in our state of consciousness, leading to a fundamental shift in our mode of existence within the global context.

4. Concluding Challenges: Higher Education for Sustainability

The oversight and administration of HEIs play a central role in shaping their future.

Universities must prioritize faculty confidence in collaborative co-learning and co-creation processes

for curriculum innovation, with the guidance and support of institutional management. This includes overseeing the reevaluation of teacher professional development, fostering trust in qualified instructors, and nurturing their involvement in curriculum challenges.

Promoting collaborative teaching requires strategic direction from the institution's leadership in restructuring work allocation and encouraging team collaboration.

In the LLL framework, the adoption of a collaborative education paradigm, involving structural adjustments, recognition of diverse student experiences, and flexible learning routes, relies on the leadership and management of the institution.

Reforming institutional governance should actively engage students and stakeholders, aligning with the Third Mission concept (Piazza, 2018). In pursuing Sustainable Development Goals (SDGs), institutional leadership should champion innovative knowledge acquisition methods and a relational pedagogical approach.

To effectively attain the SDGs, it is imperative to not only tackle global challenges through technological and social innovations, but also to focus on innovating the methods and approaches by which we acquire knowledge. Recognizing the global interconnectedness is essential to understanding the need for interrelated solutions. To achieve these transformative goals, institutional leadership should provide opportunities for professional growth, establish collaborative policies, and lead cross-sector collaboration. This collective effort contributes to a more sustainable and equitable global society through HEIs.

References

- Adelman S. (2018). The sustainable development goals, anthropocentrism and neoliberalism. In D. French & L.J. Kotzé (Eds.), *Sustainable Development Goals* (pp. 15-40). Edward Elgar Publishing.
- An Le D.T.B., & Hockey J. (2022) Critical thinking in the higher education classroom: knowledge, power, control and identities. *British Journal of Sociology of Education*, 43(1), 140-158.
- Barth M., & Rieckmann M. (2016). State of the Art in research on higher Education for sustainable development. In M. Barth, G. Michelsen, & M. Rieckmann I.T. (Eds.). *Routledge handbook of higher education sustainable development* (pp. 100-13). London/New York: Earthscan from Routledge.
- Bernstein B. (1971). *Class, Codes and Control Vol. I: Theoretical Studies towards a Sociology of Language*. London: Routledge.
- Brooks R. (2022). Students as consumers? The perspectives of students' union leaders across Europe. *Higher Education Quarterly*, 76(3), 626-637.
- Brundiers K., Wiek A., & Redman C.L. (2010). Real-world learning opportunities in sustainability: from classroom into the real world. *Int J Sustain High Educ.*, 11, 308-24.
- Burns H.L., Kelley S.S., & Spalding H.E. (2019). Teaching sustainability: Recommendations for best pedagogical practices. *J. Sustain. Educ.*, 19, 1-16.
- Cardinal T., & Fenichel S.A. (2017). Indigenous Education, Relational Pedagogy, and Autobiographical Narrative Inquiry: A Reflective Journey of Teaching Teachers. In *Crossroads of the classroom: Narrative intersections of teacher knowledge and subject matter* (pp. 243-273). Emerald Publishing Limited.
- Cortese A.D. (2003). The critical role of higher education in creating a sustainable future. *Planning for Higher Education*, 31(3), 15-22.
- Fien J., & Guevara J.R. (2013). Skills for a green economy: Practice, possibilities, and prospects. In R. Maclean et alii (Eds.), *Skills development for inclusive and sustainable growth in developing Asia-Pacific* (vol. 19, pp. 255-263). Springer.
- Freire P. (1972). *The pedagogy of the oppressed*. Harmondsworth: Penguin.
- Freire P. (1983). The importance of the act of reading. *Journal of education*, 165(1), 5-11.
- Gibson R.B. (2006). Beyond the pillars: sustainability assessment as a framework for effective integration of social, economic and ecological considerations in significant decision-making. *Journal of Environmental Assessment Policy and Management*, 8(3), 259-280.
- Hammer T., & Lewis A.L. (2023). Which competencies should be fostered in education for sustainable development at higher education institutions? Findings from the evaluation of the study programs at the University of Bern, Switzerland. *Discov Sustain*, 4(19).
- Huckle J., & Wals A.E.J. (2015). The UN Decade of Education for Sustainable Development: business as usual in the end, *Environmental Education Research*, 21, 3, 491-505, DOI: 10.1080/13504622.2015.1011084

- Kaputa V., Loučanová E., & Tejerina-Gaite F.A. (2022). Digital transformation in higher education institutions as a driver of social oriented innovations. *Social innovation in higher education*, 61, 81-85.
- Lenkauskait J., Colomer J., & Bubnys R. (2020). Students' social construction of knowledge through cooperative learning. *Sustainability*, 12(22), 9606.
- Lozano R., Barreiro-Gen M., Lozano F.J., & Sammalisto K. (2019). Teaching sustainability in European higher education institutions: assessing the connections between competences and pedagogical approaches. *Sustainability*, 11, 1602.
- McLean M., Abbas A., & Ashwin P. (2017). University Education, Inequality and Knowledge. In *Quality in Undergraduate Education: How Powerful Knowledge Disrupts Inequality* (pp. 3-12). London: Bloomsbury Academic.
- Mezirow J. (1991). *Transformative dimensions of adult learning*. San Francisco: Jossey-Bass.
- Mintz K., & Tal T. (2018). The place of content and pedagogy in shaping sustainability learning outcomes in higher education. *Environmental Education Research*, 24(2), 207-229.
- Mitchell K. (2003). Educating the national citizen in neoliberal times: from the multicultural self to the strategic cosmopolitan. *Transactions of the Institute of British Geographers*, 28(4), 387-403.
- O'Sullivan E., Morrell A., O'Connor M. (eds.) (2016). *Expanding the boundaries of transformative learning: Essays on theory and praxis*. Springer.
- Park H.Y., Licon C.V., & Sleipness O.R. (2022). Teaching Sustainability in Planning and Design Education: A Systematic Review of Pedagogical Approaches. *Sustainability*, 14, 9485.
- Piazza R. (2018). Creating learning opportunities for the cities. Community engagement and third mission in the University of Catania. In J. James, J. Preece, & R. Valdes-Cotera (Eds.), *Entrepreneurial Learning City Regions. Delivering on the UNESCO 2013* (pp. 225-247). Springer.
- Robinson Z., Pedersen R.L., & Briggs S. (2022). Activist Learning for Sustainability: A Pedagogy for Change. In Gamage K.A., and Gunawardhana N., *The Wiley Handbook of Sustainability in Higher Education Learning and Teaching* (pp. 11-39). John Wiley & Sons.
- Saykili A. (2019). Higher education in the digital age: The impact of digital connective technologies. *Journal of Educational Technology and Online Learning*, 2(1), 1-15.
- Shephard K. (2008). Higher Education for Sustainability: Seeking Affective Learning Outcomes. *International Journal of Sustainability in Higher Education*, 9(1), 87-98.
- Stabback P. (2016). *What Makes a Quality Curriculum?* In-Progress Reflection No. 2 on «Current and Critical Issues in Curriculum and Learning». UNESCO International Bureau of Education.
- Svanström M., Lozano-García F.J., & Rowe D. (2008). Learning Outcomes for Sustainable Development in Higher Education. *International Journal of Sustainability in Higher Education*, 9(3), 339-351.
- Timperley C., & Schick K. (2022). Hiding in plain sight: Pedagogy and power. *International Studies Perspectives*, 23(2), 113-128.
- Trevisan L.V., Eustachio J.H.P.P., Dias B.G., Filho W.L., & Pedrozo E.Á. (2023). Digital transformation towards sustainability in higher education: State-of-the-art and future research insights. *Environment, Development and Sustainability*, 1-22.
- van Dijk E.E., Geertsema J., & van der Schaaf M.F. et alii (2022). Connecting academics' disciplinary knowledge to their professional development as university teachers: a conceptual analysis of teacher expertise and teacher knowledge. *High Educ*, <https://doi.org/10.1007/s10734-022-00953-2>
- Varela-Losada M., Pérez-Rodríguez U., Lorenzo-Rial M.A., & Vega-Marcote P. (2022). In Search of Transformative Learning for Sustainable Development: Bibliometric Analysis of Recent Scientific Production. *Frontiers in Education*, 7, 786560.
- UNESCO (2021a). *Leading SDG 4 – education 2030*. <https://en.unesco.org/themes/education2030-sdg4> (accessed 29 August 2023).
- UNESCO (2021b). *Reimagining our futures together: a new social contract for education*. *International Commission on the Futures of Education*. Paris: UNESCO
- UNESCO (2022). *Beyond Limits. New Ways to Reinvent Higher Education*. *Working document for the World Higher Education Conference*. Paris: UNESCO.
- Waddock S. (2013). The wicked problems of global sustainability need wicked (good) leaders and wicked (good) collaborative solutions. *Journal of Management for Global Sustainability* 1(1), 91-111.
- Wright S., & Shore C. (Eds.) (2016). *The death of the public university?* Berghahn Press.