2023

Circular Pedagogy to Advance the Integration of Learning Technologies: Supporting Technological Universities Cultural Transformation

Nadia Barkoczi
Technical University of Cluj-Napoca

Iulia Stefan
Technical University of Cluj-Napoca

Ivaylo Peev
Technical University of Sofia

See next page for additional authors

Recommended Citation

Barkoczi, N., Stefan, I., Peev, I., Todorov, T., Pop, L., Marian, C., Campian, C., Munteanu, S., Flynn, P., Coetzer, J.-H., & Morales, L. (2023). Circular Pedagogy to Advance the Integration of Learning Technologies: Supporting Technological Universities Cultural Transformation. Technological University Dublin. DOI: 10.21427/3VBD-XE45

EUt+ ELaRA Working Paper Series

Circular Pedagogy to Advance the Integration of Learning Technologies: Supporting Technological Universities Cultural Transformation

Working paper No. 2023/04

Authors

Nadia Barkoczi[1], Iulia Stefan[2], Ivaylo Peev[3], Todor Todorov[4], Lia Pop[5], Claudia Marian[6], Cristina Campian[7], Sonia Munteanu[8], Patrick Flynn[9], Jon-Hans Coetzer[10], Lucía Morales*[11]

Abstract

European countries need active and proactive educational systems assisted by models that can drive a cultural transformation that supports sustainable socio-economic and environmental development. In this paper, we reflect on the future of European education. We offer some insights on how the foundations of a new educational model (ANEM) could be cemented and solidly supported by pillars that acknowledge our societies' rich and diverse cultures. Furthermore, the European University of Technology's (EUt+) future educational model is taken as a case study to enable us to reflect and analyse the need for novel pedagogies that drive change for a more sustainable socio-economic and environmentally friendly European society. European education faces significant challenges from the need to enable learning environments guided by equity, diversity, and inclusive frameworks for all categories. To make progress, it is essential that we first learn how new inclusive learning environments can be articulated to help us address our contemporary society's learning needs and demands. We are conscious that education worldwide faces a stark and unpleasant reality as the students/learners' learning experience is significantly impacted by social status and economic disparities. Students are often confronted with difficult situations involving racism,

1,2,5,6,7,8 Technical University of Cluj-Napoca

3,4 Technical University of Sofia

9,11* Technological University Dublin – Corresponding author: lucia.morales@tudublin.ie

10 United Nations Institute for Training and Research

discrimination and exclusion that materialise in students suffering mistreatment and microaggressions in learning environments still blind to the biases forwarded through teaching practices. The richness of our European cultures and languages and their significance in helping us to work together are paramount in our quest for high-quality education that cultivates, promotes, and cherishes European educational values while welcoming other cultures and languages. Within the complexities of our global societies, we argue that the future of our educational system must enable and foster mechanisms that nurture behaviours that will help us address cultural conflict, clashes, and potential detachment. Cultural clashes emerge as a major challenge for the development of our future European University, and we need to be able to minimise potential problems associated with multicultural, plurilingual and diverse working and learning environments. We are conscious of the need to develop appropriate educational programmes and curricula guided by our novel *"Circular Pedagogy",* where we provide an initial and evolving framework for students, teachers, and researchers to interchange their roles. We propose a learner-centred, dynamic, and proactive pedagogy that helps us to manage and navigate the inevitable cultural conflict and supports us in understanding and identifying the triggers that might arise due to cultural clashes and increasing levels of detachment.

Keywords: ANEM, Technological Universities, Cultural Transformation, Circular Pedagogy, Advanced Learning Technologies.

1 Introduction

The world economy faces essential challenges due to failed economic models that have resulted in significant damage and deterioration of our environment. According to the 2023 IPCC Report,

"Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming" (IPCC, 2023, p.4).

Economic and business activities have contributed to creating significant imbalances in our ecosystems. The scientific evidence strongly suggests that humans are altering many geological processes on Earth, causing significant environmental damage and contributing to a growing socio-economic divide. Human activities have led to the beginning of a human-dominated period named the Anthropocene, which is believed to have started in the mid-20th Century (Waters et al., 2016). Our existing socio-economic models are at the centre of a dramatically growing divide between the world's richest and poorest economies (Raworth, 2017; World Bank, 2013). The current economic, social, and environmental dilemma requires changing how we understand our relationship with our planet and global society. As academics working in technological universities across Europe, we argue that to enable the required changes, we need to reflect on how to initiate a changing process that will last and will lead us towards a positive contribution to our global society. We turn our eyes towards education, in particular, to technological universities' role in a process that requires deep thinking and transformations.

The educational system requires significant changes to enable a paradigm shift towards societies that drive change without neglecting the importance of long-term sustainability and how it can be framed to ensure more sustainable economic growth and social cohesion. Without a doubt, science is poised to play a critical role in enabling societies to grow and develop, and graduate and postgraduate education has a critical role to play (Siege & Schreiber, 2016; Redclift & Springett, 2015; Nature, 2022; IUCN (2021). However, when the discussion turns towards required skills, the so-called *"hard sciences"* take a central

stage as the political and academic discourse is polarised by the relevance of STEM education and the neglect of Social Sciences. It is naïve to discuss driving a serious and committed change in education if social sciences are not central to countries' strategic vision and how they understand decision-making in research and developmental processes (Kabir, 2019; Lehmacher, 2017; World Bank, 2011).

As indicated, humans are at the centre of the Anthropocene, and humans are the ones that must drive the required changes. Therefore, a discipline-focused educational system, with an emphasis on STEM without acknowledging the centrality of humans as part of the development of science, emerges as a flawed approach. The reality is that human beings are the critical actors/players, and the social dimension needs to be reflected upon and reconsidered. At the European University of Technology (EUt+), it is critical that we develop a new educational model (ANEM) that fosters cultural integration to minimise potential conflicts due to cultural clashes, cultural divides and potential conflicts that could emerge because of the Alliance's diversity. The Alliance diversitycould act as a double edge sword as it brings opportunities but also challenges, and there is a need to reflect and examine in which way appropriate mechanism need to be put in place to facilitate the exchange of different views and opinions within an open discussion forum. EUt+ is an Alliance between eight technological universities (Université de Technologie de Troyes, Technical University of Sofia, Technical University of Cluj-Napoca, Darmstadt University of Applied Sciences, Riga Technical University, Technological University Dublin, Cyprus University of Technology and Universidad Politécnica de Cartagena) - that are working together with the mission *"to serve the betterment of society through top quality education" (*EUt+ website, 2023). The Alliance is growing as it has welcomed a new member – The Università degli Studi di Cassino e del Lazio Meridionale (UNICAS)- as it engages in the project's next phase through its EUt+ Accelerate phase.

We are driven by a vision where we "*Think Human First"* in a human-centred approach to technology (EUt+ website, 2023). To ensure that we can progress with our vision, it is critical that we discuss the importance of culture, languages, and technology to drive inclusive and diverse learning, teaching, and research environments. With the support of science, innovation, and technologies, we are working on a novel pedagogy coined *"Circular Pedagogy,"* which guides our quest to disrupt, innovate, improve, and reflect on our contemporary educational models and that we introduced as part of our Working Paper Series, being our first collaborative paper. *"Circular Pedagogy"* proposes the interchangeable roles of learners, teachers, and researchers as we navigate the lifelong learning process and consider our future as we *"Think and Put Human First"* (Morales et al., 2022; Pop et al., 2022; Coetzer et al., 2023).

Another complex issue that requires attention relates to power dynamics and how our Alliance will be able to navigate the challenges of potentially developing an educational system dominated by Western traditions and guided by a single language. But at the same time, we need to navigate the complexities that emerge between students and academics and their different roles through the learning and knowledge development process. Within the outlined context, we reflect on the limitations of active and project-based learning that need to move a step further by embracing attitudes that contribute to the co-creation of knowledge through active and dynamic collaboration. A New Educational Model (ANEM) proposes a dynamic and evolving relationship between students, teachers, and researchers. We envision a new way of learning, teaching, and doing research that will take a different dimension driven by a close collaboration between the student that we envision as a holistic learner, the teacher that takes different roles that change from being a mentor, a coach, and instructor and a learner among many others, and the researcher that becomes an active part of the learning process that start to define the circularity of Technological Universities academic and research working environments. Our model is built to disrupt the way we learn, teach, and research, where we interchange our roles and immerse in developing a more active, creative, critical, and inclusive

learning environments, and a such, our model is a dynamic model that will change and evolve as we continue engaging with our life-long learning process. Active participation and collaboration through a dynamic transdisciplinary learning environment are core elements of our proposed circular pedagogy for higher education, that needs to consider the importance of the economic and political systems within the educational sector and its frameworks.

At the centre of our work, we also consider the importance of digital fluency. As such digital literacy represents a critical pillar in our efforts to lead and unite forces in developing a cohesive institutional culture. Within the technology and innovation context, digital skills are vital to help us navigate existing challenges and to enable the development of learning, teaching, and research environments where we cooperate, collaborate, communicate, co-create and exchange knowledge authentically and sustainably. In this regard, we propose to rethink our engagement with pedagogy and its importance in higher-level education as we argue that a new approach is needed, and higher education institutions need to reconsider their understanding of pedagogy across different disciplines and areas of expertise. Moreover, our experiences signal a growing divide between the importance of pedagogy to support the academic community and the narrowed focus on discipline-specific domains. Historically, pedagogy has been a neglected area of study and work within higher education institutions and remains detached from daily academic routines. Pedagogy does not have parity of esteem as the STEM domain, leading to a natural rejection from the academic community of its importance. However, our contemporary society and the growing needs and demands of our economic and political system require alternative ways of working and thinking. To explore the significance of pedagogy in supporting the transformation of education within Europe, the remainder of the paper examines the importance of sustainable education as we seek to gain a better understanding of the need for educational change and how we can contribute to it (Fawns, 2022; Ash-Brown, 2020; Davis, 1994; Caroll, 1961).

2 Multiculturalism and Plurilingualism for Sustainable Education

Current socio-economic and environmental challenges require new ideas on how the educational system and our academics, researchers and students are open to collaborating and working together. We need to develop a new educational culture that aligns with the demands of our contemporary society and pressing sustainability needs. Therefore, in this section, we continue to expand on the importance of developing a new pedagogy that is attuned to current challenges and acknowledging higher education institutions' needs. As such, we present a critical research framework that integrates different disciplines to help us reflect critically on how pedagogy can be understood as a circular process. *"Circular Pedagogy"* brings together learners, teachers, and researchers, but as we define the pedagogical process, we should aim to identify how we can bring together culture, languages, technology, and innovation to help us design our future university educational model. We argue that to achieve the needed transformation, it is vital that we understand our role as enablers of change. Technologies can help us to inspire our students, learners, partners, staff, alumni, and leadership teams. We acknowledge that a change in organisational culture is challenging as it is deeply rooted in hidden assumptions, beliefs, values, norms, rules, and organisational practices. However, we have an opportunity to create and develop a new culture for our European University of Technology, and this paper reflects on our vision for our proposed framework.

EUt+ has identified student mobility as a vital pillar due to its significance in reinforcing our sense of belonging. Student mobility provides a solid foundation for our common identity as we take our first steps in the creation of our future working framework. Students are encouraged to embrace the idea of a single university supported by different campuses across Europe and guided by sound academic criteria and guidelines where students will be able to develop and design their learning paths and lifelong learning training needs. Our commitment

to mobility is supported by the benefits it provides to students' development due to their involvement in international exchanges, which are not reduced to a single lingua franca (Grindei et al., 2022). This fact enables students to discover the richness of Europe's cultural diversity, represented by different languages and cultural heritage. In line with Grindei et al. (2022) insights, plurilingualism emerges as an essential skill in the co-creation of knowledge being closely connected to our novel pedagogy where students, teachers, and researchers work together aiming to embrace the value of transdisciplinary education supported by diverse and plurilingual learning environments. An additional disruption to current modes of learning can be identified in the potential offered by EUt+ to become a living research laboratory that integrates creative learning and teaching spaces in which theories and concepts around plurilingual communication and learning are being discovered, discussed, and negotiated continuously. Our living lab is cemented by a sharing philosophy that considers plurilingualism and cultural diversity essential building blocks in the co-creation of knowledge that will contribute to sustaining peaceful living and togetherness in today's societies, as we embrace a learning culture through the lens of caring, inclusive education with a close connection towards acknowledging the diversity of our society (Pop and Morales, 2023).

We could talk about the effectiveness of sustainable education, taking advantage of the experience gained through the best, and more importantly, through the unsuccessful practices which every educational institution can share. Fundamental pillars of our university working framework can be found in working environments that are multicultural and plurilingual. In this regard, multiculturalism can be defined as,

"The critical analysis and recognition of the diversity of identities and cultures in a society, which encompasses and values the intersectionality of race, culture, class, and gender" (Byker, Marquardt 2016, p 34).

In addition, plurilingualism can be understood as,

"*The potential and/or actual ability to use several languages to varying levels of proficiency and for different purposes*" (Council of Europe, 2007, p.10).

The conflict emerging from the lack of understanding of our diverse cultures and languages is a phenomenon accompanying human history from immemorial time. We are aware of the significant challenges associated with our European University as we are trying to bring together a diverse range of institutions. Without a doubt, we need to learn from each other and find ways to collaborate, cooperate and manage conflict. Our joint project requires foundations based on constructive dialogue, knowledge exchange and open minds towards change. The cultural exchange between students and academics can help to foster a new mindset and thus help to structure a new European culture. The intercultural dialogue aims to equip future specialists with a wide range of valuable intercultural competencies, enabling them to adapt efficiently in increasingly diverse societies and adequately address the competitive and growing demands of our labour markets (Labadi, 2013; Baraldi, 2009; Jandt, 2018).

Furthermore, gaining a better understanding of other cultures and languages can contribute to developing mutual respect and understanding by providing alternative mechanisms to address situations that require significant levels of negotiation, collaboration, and cooperation. Moreover, a characteristic feature of European workplaces is bringing together people from different cultural backgrounds. Both a challenge and an opportunity, as

cultural diversity in companies can be a genuine asset for competitiveness in a globalised economy. In parallel, the dynamics of contemporary lifestyles require a change in the rhythm and pace of teaching, learning and research activities. There is a need to distribute responsibilities between the educator and the learners and reconsider scientific information's role and place. Language and intercultural communication are relevant to foster lasting relationships in multilingual education settings. Our firm conviction is that a language cannot be learned or taught separately from the cultural values underlying it. The lack of skills *"may contribute to a failure in communication among individuals from different linguistic and cultural backgrounds*" (Mambetaliev, 2019, p.196). Knowing the spoken language in a certain place is not enough. Thus, developing and equipping students with intercultural competence, skills, and attitudes is prominent in active learning environments. According to Changnon and Spitzberg (2009) intercultural competence is regarded as,

"The appropriate and effective management of interaction between people who, to some degree or another, represent different or divergent affective, cognitive, and behavioral orientations to the world" (Spitzberg & Changnon, 2009, p.7).

Therefore, far more beneficial for learners is to be taught how to find beneficial information about other cultures and decode the meaning of other cultures' reality. As mentioned before, intercultural communication represents interaction management, more than exclusively trying to verbal communicate with foreigners. First and foremost, the intercultural competence is a multidisciplinary capability that bears considerable relevance in overcoming communication barriers between different people and different groups within the same country or large organisations and academic institutions. "*At the same time, international students not only explore the cultural variety and learn languages but also manage to better understand themselves and their linguistic aspects better* (Mambetaliev, 2019, p.198)." Being aware of ethnic and cultural differences leads subconsciously to examine individual cultures more closely and rediscover different aspects of native languages that can create environments that appreciate the value of different views, ideas, and opinions (Asante et al., 2008; Lustig & Koester, 2010; Dai & Chen, 2017).

Recruiting and teaching international students has become a regular practice for over 70 years in modern higher education institutions, and their numbers have been exponentially growing over the past 20 years. Nowadays, overcoming intercultural differences has been substantially facilitated by Internet access and the excessive exposure of young people to the web context– especially in online social networks with an intensive content exchange. As such, technology and innovation are becoming integral components of the learning and teaching processes as change and cultural adaptation enablers. Furthermore, in the interconnected online world, the representatives of cultures which are, traditionally, perceived as quite remote, such as the European, Balkan, Asian and Latin American – are quickly helping to break down the cross-cultural barriers between them (Jackson, 2012; Spencer-Oatey & Franklin, 2009; Liu et al., 2015).

Learning environments supporting language exchange help to create a more inclusive learning context. By sharing a common foreign language, students, teachers, and researchers can present their hometowns and countries, customs, and traditions, translating words and phrases into their mother tongues, discovering points of contact/common ground/points of intersection between learners, common or very similar experiences, practices, expressions, and gestures where learners gain a better understanding of each other. Thus, they push back

the boundaries of their intercultural competence by exploring culturally significant issues. More than ever, understanding others means finding how one's own culture fits into the global tapestry of cultures (Lustig & Koester, 2010; Bennett, 2015; Feng et al., 2009).

Very often, however, instructors in multicultural classrooms may encounter certain issues arising from hasty judgements that students may instinctively form based on their own culturally embedded perceptions. Research on inter-cultural relationships has often turned into a search for inter-cultural differences, disregarding universal characteristics and playing down similarities. Moreover, by focusing on the native/target culture differences, we often overlook that the learners' collective identity is formed within an intricate system of different cultures rather than in one-to-one opposition. Thus, instead of learning more about themselves by learning about others, students might reinforce certain myths or prejudices, such as cultural distance or stereotypes (Grozdanova, 2001). Consequently, a balanced approach should be adopted to avoid such flaws, presenting cultural diversity against the background of what unites us. If we are successful in helping our students feel part of the truly global community, the inevitable process of comparison will lose its negative connotation, as they will be looking at diversity in a positive way, enabling the development of inclusive learning environments, as differences will be positively loaded, and biased views could be substantially minimised. The first and the most important prerequisite for achieving these goals is related to providing the learners with an inclusive learning environment where everyone is treated fairly and with respect and where personal values, needs and aspirations are recognised and respected.

Inclusiveness also involves providing teaching staff with appropriate didactic training and experience in international contexts, clearly communicating standards and expectations to all students and helping the teacher navigate emerging conflicts and potential misunderstandings as they create and co-create learning environments that bring closer their learners as they embrace the richness of sharing different cultures, traditions, ethnicities, and races. Students would also need continuous support in developing their study skills, including academic and discipline-specific language training they will use in their future academic and professional communications. Moreover, students should be provided with virtual and other digital learning spaces as these spaces offer access to learning environments that are attuned to our current needs and might emerge as tools that enable the creation of more inclusive learning environments (Patel et al., 2011; Spencer-Oatey & Franklin, 2009; Martin & Nakayama, 2010; Bianchini, 2013).

Teachers need to navigate complex learning environments aiming to integrate all students into the learning environment, which involves skillfully managing diversity to help students develop and reinforce intercultural competencies and become aware of the value of cultural diversity and empathy by embracing positive elements and learning from negative experiences and challenges. This can be achieved by promoting interactive learning based on collaboration, team building, acknowledging and integrating the cultural diversity of the students as a valuable resource for the extension of knowledge, and openly discussing cultural differences and implications. This new approach inevitably involves embracing a change in methodologies, such as team teaching, peer-tutoring, and tandem learning. There is no denying that the overall process should also entail an appropriate integration of technology, construed in a broader perspective, into the teaching and learning objectives in higher education (and not only), as the prerequisite for ensuring its sustainability. The physical implementation of technical devices and technological resources into the classroom would be an approach that will hardly promise efficiency. Technology is a tool whose effectiveness in the process would be achieved by reconsidering the techniques for managing and utilising it for pedagogical purposes, including the STEAM fields where technology has already become an integral part of the professional curricula and skills development. Hence, we can speak of

"technopedagogy" or pedagogy enhanced by means of new technologies (Asad et al., 2021; Lyonga et al., 2021; Narayanan & Komalavalli, 2022; Yusof et al., 2019).

The understanding that technology can enhance teaching, learning and research practices is a critical element of our work at EUt+. Technology brings new opportunities and additional avenues for skill development, efficient use of tools during classes and supporting innovation in teaching tech-driven fields of education. Consequently, technology and innovation are fundamental aspects of the educational model that we are considering for STEAM education within EUt+ as we explore enhancing knowledge delivery effectiveness. Technology offers enormous potential to the academic community that seeks to be involved in lifelong learning and research practices with a focused approach towards critical thinking, development of analytical skills, innovation, content delivery and debate. Students' inner motivation and ethical approaches towards teaching and research practices could be delivered more effectively with the support of technologies and innovation.

There is no doubt about the enormous worth that plurilingualism and multiculturalism bring to modern campuses and their importance in driving cultural integration. They constitute a unique asset that gives us every reason to be proud of them. According to Karacsony (2022), "*Cultural diversity makes people much more innovative, creative, and open"* (p.10). Hence, the academic community can become more empathic and tolerant, fostering at the same time European values that help us to become active European citizens and cultivate a sense of European belonging. Therefore, the argument that this multifaceted diversity of cultures invariably contributes to building and developing a sustainable culture of diversity could be clearly persuasive (Vavrus, 2002; Banks & Banks, 2013; May, 1999).

The next section aims to provide a connection between cultural transformation and the importance of a new pedagogical approach towards higher education guided by our novel *"Circular Pedagogy."*

3 Circular Pedagogy to Drive Universities' Cultural Transformation

The quality and success of teaching-learning-research processes are closely linked to higher education institutions' major stakeholders. We can identify teachers, students, and researchers as critical players. However, we cannot neglect the importance of other key stakeholders in university consortia, including various government bodies, community groups, NGOs, international educational organisations, the labour market, and the industrial network. Our environment, natural resources and ecosystem emerge as critical actors that have been overexploited, demanding a new approach to understanding our relationship with our planet. Understanding the interactions and impact of teachers and students in EUt+ requires a deep understanding of the culture of each university through shared values and beliefs, common assumptions and expectations, and behaviours related to student learning, teacher learning, educational leadership, the quality of relationships inside and outside the university and the readiness for change. Through universities' it would be possible to start a time of change that leads to the required cultural transformation as we confront the reality and challenges associated with sustainable societies. Within the educational system, it is vital to consider the role played by students as potential agents of change and drivers of sustainable societies in alignment with the UN 2030 Agenda and the Sustainability goals (UN, 2015). New educational models should be capable of stimulating students' dynamic and active participation throughout their learning journey. The role of the teacher then changes from a dominant position towards a more interactive and dynamic role. The teacher takes a dynamic position as it embraces the form of a facilitator, a coach, a supporter, or a mentor who guides students while challenging their creativity, imagination, critical thinking, analytical skills, ability to collaborate, cooperate, co-create and knowledge sharing. The teacher is critical in encouraging students to take

ownership of the learning and development process when they immerse themselves as active and proactive learners. According to Leichenko et al. (2022), Reed & Fazey, 2021), Purcell et al. (2019), and Jareño et al. (2014), the role of the teacher needs to evolve so that it is not limited to a passive approach focused on being a knowledge transmitter. Our societies require a different approach towards learning, teaching and research activities that acknowledge that the student, the teacher, and the researcher are interchanging their roles continuously as they engage with the learning and knowledge exchange process. Our learning environments require methods designed to engage students in active learning; currently, the academic community engages in mass media or social media to promote their research message to a wider audience, but alternative, inclusive and innovative approaches are needed.

New innovations and technologies are forcing us to rethink and reconsider how we teach, learn, and research, and our educational models cannot afford to keep a passive and reactive approach towards change. These approaches help support human learning interfaces through a set of interaction mechanisms that educational agents exhibit, which can be used to control, stimulate, and facilitate learning processes and the conditions for developing smart learning environments. Therefore, the role of the teachers requires a new conceptualisation, as teachers are now situated at an interface of professional and organisational values, pedagogically and digitally literacy trained (Prentice et al., 2010; Oswell, 2006; Alvesson & Sveningsson, 2016; Mattheou, 2010).

In our response to the current educational needs, ANEM seeks to address five critical points: i) to respond to the demands of the knowledge and digital economy; ii) to encourage interdisciplinary and transdisciplinary learning, teaching and research environments; iii) to offer a dynamic educational offer supported by technology and innovation; iv) to stimulate innovation and to turn universities into transdisciplinary living labs for impact and change; v) to connect and engage in a learning process that supports our society with the reality of climate change and environmental degradation and growing levels of conflict, marginalisation and isolation (Fortes et al., 2019; García-Martínez et al., 2019; Koper, 2014; Siekkinen et al., 2020).

As depicted by our proposed *"Circular Pedagogy"* in Figure below, we need to be able to navigate a learning model that progresses towards learning, teaching and research activities within Complex Learning Environments that are fast evolving and that require a new approach towards the way we teach, we learn and do research.

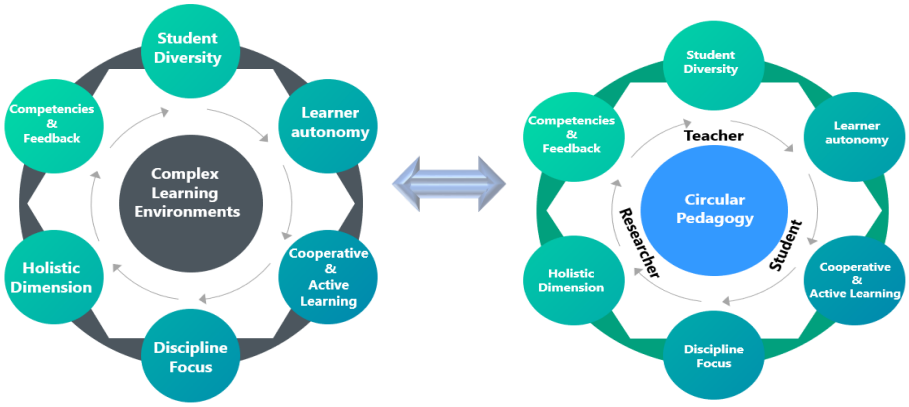

Figure 1. Circular Pedagogy to Navigate Complex Learning Environments.
Source: Authors (2023)

In parallel, higher education institutions are facing dramatic changes due to the lifelong learning process and pressures from the labour market that demand continuous reskilling, upskilling, and the development of new competencies. The diversity of the student population

demands new levels of support towards teaching and learning activities that foster learners' autonomy and embrace active learning spaces where teachers and students emerge as active co-creators of the learning process and content. In our quest for ANEM for EUt+, significant changes need to be considered as part of innovative learning environments that enable critical and constructive engagement between students, teachers, and researchers as they become aware of their interlinked roles. Therefore, it is important that we reflect on the basic features of our proposed new learning environments and how they are interconnected, which we summarise as follows.

In an Erasmus programme-featured environment and not only, we are confronted with the growing diversity of the student population driven by lifelong learning challenges and opportunities that demand a different approach towards higher education and its models. Learners' needs and demands are subject to significant changes. The disruption introduced by technology and innovation requires diverse educational processes that foster learning experiences. Because by its nature, the learning process cannot be a static process, being necessary for students to become more autonomous and self-aware of the necessity to take ownership of their learning process (formal or not formal) and transition towards an autonomous and self-regulated learning experience where they navigate their role as a source of knowledge and critical contributors to drive socio-economic change.

Cooperative and active learning processes could be introduced to support individual and collective skills development. Focus on Discipline/Meaning/Application and how the learning process can be enhanced with technology and innovation support emerges as critical. Thus, technology should be considered an essential tool to drive the learning process without undermining other dimensions of learning, including the STEM fields. We argue on the need for a learning process that takes a holistic dimension. Discipline-specific learning models alone are insufficient to manage our modern society's challenges. A more holistic learning environment is needed as we consider the importance of multidisciplinary, interdisciplinary, and transdisciplinary dimensions. In parallel, it is crucial to be aware of the challenges and benefits of a holistic learning experience to ensure that the educational model does not emerge as too complex and unrealistic in its application, turning towards a more philosophical model instead of being a valuable tool for change.

Moreover, critical thinking, analytical and active skills are vital and should take a key role as our learners question and inquire about existing knowledge if we wish to add valuable contributions and innovate. Curricular design and alternative assessment and feedback processes need to be reconsidered in the context of a complex learning environment and how they can be enabled through our novel "*Circular Pedagogy*". Active, constructive, personalised and authentic feedback can play a critical role in ensuring that learners can identify and leverage their weaknesses and strengths. We further argue the need for a different view towards weaknesses, as they should not be considered a negative or hostile element of the learning process; they need to be integrated as part of the learning experience if we aim to overcome challenges and support learners' positive development. Teachers' understanding of their evolved role as co-learners emerges as a fundamental part of the change process that will help teachers navigate different roles as their students grow and develop. Teachers, researchers, and students should understand their roles as co-creators of learning environments that consider sustainability challenges and are guided by the aim of driving change and impact.

Therefore, we need to develop an educational model that is attuned to our knowledge and digital economy. As such, the importance of digital literacy in our proposition to enable a transition towards more integrated, inclusive, and welcoming learning environments capable of supporting the needs of our modern society is considered in the section that follows.

4 Circular Pedagogy to Frame Digital Literacy

It is essential to acknowledge that technology has become the uniting force for communities representing different cultures. Technology and innovation are the manifestations of this fact that is unequivocally exhibited when students readily exchange their personal data on different social platforms and create group accounts where they feel free to communicate and share information with each other and their tutor. Group tasks, such as teamwork, debates and discussions, self-assessment, and development of verbal and visual materials by the tutor and the learners and other awareness-raising activities, represent invariable elements in the pedagogical learning and teaching process. All this generates specific internal cohesion, building the essential rapport and sense of community between the learners and the educator.

The teaching process entirely relies upon pedagogical flexibility, which should be implanted and incorporated into other disciplines as we navigate towards a student-centered approach. Building a team with their learners is a significant aspect of transitioning towards learning environments where students, teachers and researchers can learn from each other. The results will be poor or nonexistent if no team spirit is fostered. Being regularly exposed to instances or debates on cultural issues in the context of their native culture, students consolidate, modify, or discard certain cultural patterns. The best way to help them expand their worldviews is to funnel their comparing and contrasting skills positively and productively. The more opportunities they are given to discover intercultural similarities and differences, the more misunderstanding will be avoided. This feature, in turn, is particularly noticeable in the generations born after the year 2000 and is especially evident in our contemporary learners, whose attitudes towards learning and learning styles seem to be radically different from those of previous students.

Pedagogical interaction, the methods and approaches used, require a change that will rearrange pedagogical paradigms and bring forward new methodologies and alternatives to teaching, learning and research processes. Contemporary perceptual attitudes are remodeled by technology and the digitalisation of many human activities affecting individuals' and society's personal and professional lives that are conducive to economic growth and development. In alignment with Schumpeter's (1942) concept of *"Creative Destruction"* which is core to capitalism where *"newer and better alternatives continuously challenge the old way" of doing thing*s. Therefore, we need to reflect on how creative destruction can be integrated as part of pedagogies for HE. Another essential aspect that deserves to be mentioned is the changing profile of the *"new"* learner with the entire set of needs, attitudes, previously acquired skills and knowledge, set goals and expectations about the applicability of the knowledge acquired in the educational institution. We have to invariably take into account the fact that modern learners develop their own technological culture, their own technological experience, which in many cases exceeds that of their educators (mainly those in the field of humanities), which is especially true for engineering students who make their choices most often based on their love for engineering and technology. The pragmatic approach for educators would be to perceive technology as a *"meeting place"* with their learners, where they can co-create content that adapts available scientific knowledge to the new digital format of pedagogical interaction (Huang et al., 2019; Gosper & Ifenthaler, 2014; Siege & Schreiber, 2016; Sachs, 2015; Kattington, 2010; National Research Council (U.S.) et al., 2012; Chu et al., 2017; Cummings & Blatherwick, 2017).

In the case of EUt+, where STEM fields of study are predominant, technology is already a big part of teaching content and learning processes. As suggested before, the enhancement of tech-content delivery with tech-teaching using tools specific for "*technopedagogy"* could change for the better. Technology provides a context for skill and

knowledge transfer through the possibility of inclusive feedback, better availability of learning materials, better communication tracking, more flexibility in scheduling and communicating, improved security if institutional tools are used, and with better management, probably more time to learn, prepare and engage on research activities. Nevertheless, the practicality of engineering and other related STEM fields is part of the educational contextual reality. Further research studies need to be developed aiming to provide more insight into the pros and cons of extra technology usage in teaching, in this case, for practical skill development, if there is a limit and if there is one, clearly define it.

Furthermore, higher education institutions engage in mass media or social media to promote their teaching, learning and research message to a broader audience. The transformation of the educational environment requires using digital tools and new types of equipment as cognitive instruments that help to reinforce, assess, and facilitate learning and knowledge generation. We are facing fast changes guided by digital transformation that involve disruption and reconstruction of thinking about the opportunities digital technologies can offer and how they can be used to support learners. Strategical economic and educational goals are part of the educational agenda as they are critical to driving change. As part of the change and educational transformation, it is interesting to consider the organisational context and the realities of different universities. Therefore, we should be able to identify and become aware of the diversity of learning contexts and recognise the variety of learning demands and needs connected to people's cultures, ethnicities, genders, and socio-economic backgrounds. (Felder & Brent, 2016; Capraro, 2013; Campbell & Norton, 2007; Robinson & Aronica, 2016; Ustundag & Cevikcan, 2018).

Rigid educational models do not offer sufficient support to current needs as they cannot address modern societies' challenges that are not isolated to the needs of global societies and global demands. Higher education institutions are forced to adapt to a new organisational logic driven by digital innovation and transformational leadership. There are multiple possibilities that educational agents can take up and process with their particular preferences and ideas in the context of sustainable learning situations and the demands of creating sustainable economic, financial and social systems (Butollo et al., 2022; Elkordy & Iovinelli, 2021; Riasanow et al., 2019). Current challenges demand different ways of thinking, which implies that we need different approaches towards learning, teaching, and research activities. Figure 2 below further depicts our EUt+ ideation of *"Circular Pedagogy"* and how it connects to its stakeholders as we consider institutional complexities and reimagine the need for an organisational context that embraces cultural transformation. A transformation guided by learning driven by European values that nurture learning processes aiming to contribute to improving our engagement with natural resources and social interactions and developing values that provide the foundation of EUt+ ANEM guided by EDI in action.

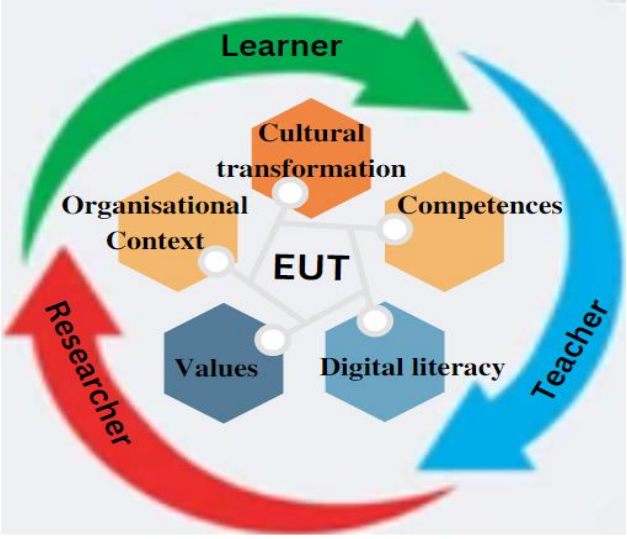

Figure 2. Circular Pedagogy: Interchangeable roles of learner teacher, and researcher inside *EUt+*
Source: Authors (2023)

Within our European University, we are reflecting and assessing how to create flexible, dynamic, and adaptive learning environments where students, teachers, and researchers are empowered to work together through interchanging their roles. It is imperative that we do not become anchored on the idea that the roles of the teacher, researcher and student are separated if we seek to build a solid foundation for a sustainable educational model guided by flexibility, creativity, dialogue, and a process of inquiry that promotes a proactive and inclusive learning experience.

The foundations of ANEM for EUt+ need to be open to exploring existing and dominant constructs and challenging them to enable sufficient space for creativity, criticality, and willingness to challenge the status quo. However, we cannot forget that each person embraces the educational process differently, being individual and collective actors that play implicit or explicit roles, depending on i) the perceived positioning of self and others, ii) cultural biases in critical thinking that are seen as a filter of the information practices of digitalisation, iii) the ties between diverse cultural and technological backgrounds and iv) rethinking of essential factors that influence the acceptance of technological improvements in educational environments (Kerruish, 2023; Rivera Muñoz et al., 2022; Smith et al., 2022).

Within EUt+, our proposed *"Circular Pedagogy"* offers the opportunity to explore further our interchangeable roles, where we challenge the idea of roles that are separated in the following way: i) from the one who teaches to the one who learns, which means there must be one who researches, ii) from the one who learns to the one who researches, which means there must be one who teaches, or iii) from the one who researches to the one who teaches, which means there must be one who learns. We argue that the learning process becomes dynamic, and teachers, learners, and researchers will simultaneously embrace different roles, and we collaborate towards the co-creation of knowledge. The separation of roles must be challenged to enable the creation of alternative learning environments that can help to bring different perspectives, ideas and insights towards our understanding of HE and their models.

Therefore, EUt+ can have a core role in promoting equity in innovation by providing appropriate pedagogical support for creative and scholarly learning practices that are supportive of technology and innovation. The use of digital technologies, involving collaborative efforts in using and designing digital tools, "*provides ample opportunities for creative digital participation* (Laakso et al., 2021, p.2)" as we reflect on the need for educational change in the following section.

5 Are Higher Education Institutions Ready for Cultural Change?

In the context of our modern societies, Higher Education Institutions face significant pressure to offer learning environments and learning experiences that can respond to a fast-evolving society. We are immersed in uncertain environments, amplified by higher levels of complexity due to a large amount of ambiguity (Schneegans, Lewis, Straza, 2021; World Bank, UNICEF, FCDO, USAID, the Bill & Melinda Gates Foundation, 2022; OECD, 2022; OECD, 2017; Jensen, 2019). Future citizens should have access to valuable and helpful knowledge to adapt to a volatile world. The Universities should provide access to an educational model which facilitates all students the chance to develop proper skills and competencies which will allow them to face current changes at the time that they are equipped with skills that will enable them "*to anticipate and respond to the nature and speed of change; to acting decisively without always having clear direction and certainty; to navigate through complexity, chaos, and confusion; to maintain effectiveness despite constant surprises and a lack of predictability*" (HR Collaborative, nd; Glaeser, 2022; European Commission, 2021; Facer, 2021; Erçetin & Potas, 2019; UNESCO, 2014). Uncertainty, ambiguity, complexity, chaos, and confusion are closely linked to our natural evolution and development, as reflected by Albert Einstein,

"We can't solve the problems at the same level of thinking that we were at when we created them" (Albert Einstein, 1879 – 1955).

Therefore, universities need to examine, revisit, and inquire about existing educational paradigms, particularly existing teaching-learning routines, and their detachment from research and sometimes from our current reality. We are used to making a clear distinction between research, teaching and learning processes. Our universities foster environments that praise research activity while undermining the importance of equitable and qualitative teaching and learning environments. Our society's development did not connect universities as spaces for high-quality research activity, but our modern society has adjusted because of our evolving needs. Consequently, research activity has become a primary demand in the academic world, but we have not embraced the change by providing appropriate systems to bring together learning, teaching and research. We need to create an educational model that boosts our life conditions and evolution by developing "*major engines of economic growth and prosperity, state and community building, and social progress"* (World Bank, 2023), and this means that we cannot separate the role of the learner, the researcher, and the teacher, at the time that we consider carefully in which way students are integrated as part of the process, as we are shifting towards learners from a mutifacetd and multidimensional approach (Looney, 2009; Omic & Halb, 2018; Emler & Fraze, 1999).

According to a report from the OECD (2022),

"*The world is witnessing a growing disconnect between an infinite growth imperative and the finite resources and delicate ecosystems of our planet; between the financial economy*

and the real economy; between the wealthy and the poor; between the concept of gross domestic product and the well-being of people; between technology and social needs; and between governance and the perceived voicelessness of people" (Boix Mansilla & Schleicher, 2022, p. 6).

Under these conditions, learners' competencies require the integration of capabilities and skills that equip them to be able to manage and live in an uncertain future, manage and co-exist with disruptive technological change, and reflect on the need to create and develop a new social education model guided by the United Nations SDG 4 aiming to foster high-quality education that supports sustainable development. At this point, it is of interest to consider that the full title of SDG 4 is,

"*Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"* (UN, 2015, p.19).

To drive change, we need to reimagine the purpose of education, but we also need to engage in a pragmatic assessment of what it means to provide learning opportunities for all (Coetzer et al., 2023; OECD, 2022; UNESCO, 2021). Existing models, existing systems and practices are not capable of responding to emerging challenges. As such, we require a *"new sciences of learning"* and new pedagogies that bring together various disciplines and provide space for social psychology, cognitive psychology, brain research, neuroscience that help us to update and redesign our approaches to teaching, learning and doing research (OECD, 2022; Banich & Compton, 2018; Fovet, 2020; Luhmann, 2017; Calvo & D'Mello, 2011; Raley & Preyer, 2010; Carter et al., 2019; Murphy & Honey, 2016). According to Cronin (2008, p.2), we need to integrate different branches of knowledge because *"our world has problems, but the universities have departments.*" Our academics are worried about their areas of expertise, discipline-specific requirements, and the importance of developing their research portfolios, resulting in inadequate learning and teaching environments and, as a result, the neglection of student learning and developmental needs. The future of higher education requires that traditional universities review their practices as they are not in alignment with current socio-economic and environmental needs. Universities' leadership teams need to consider that there is a need to engage in a transformative process, as doing nothing is not an option. According to KPMG (2022) personalised learning is the way forward,

"the quality of personalised student learning will be key to institutional success…. Transformation is not only about the curriculum, learning delivery, student support and research. It is about the back office, the operating model, the technology and, fundamentally, the sum of capabilities that reside in the organisation" (KPMG, 2022, p.3).

But what are the costs associated with personalised student learning and teaching practices? To what extent is the economic dimension and the reality of HEIs being neglected? We need to be mindful of the limited budgets many universities face as they are pushed to compete for resources within working environments defined by budgeting needs and government policies that support the commodification and corporatisation of HE. From a discipline specific domain, there are many challenges to be considered, as in this regard, the transdisciplinary approach seems to be more than necessary (OECD, 2020). According to Nicolescu (2010, p. 22), "*transdisciplinarity concerns that which is at once between the*

disciplines, across the different disciplines, and beyond all disciplines. Its goal is the understanding of the present world, of which one of the imperatives is the unity of knowledge" and be understood by considering multiple levels of reality as represented in Figure 3 below,

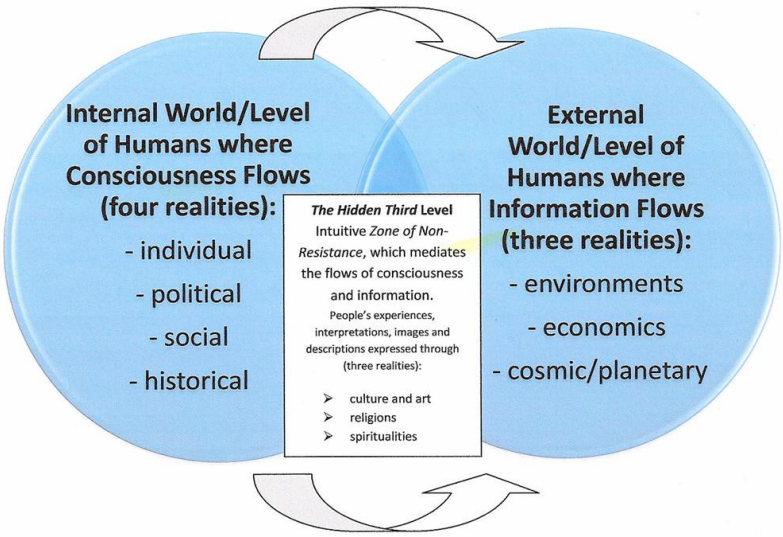

Figure 3. Multiple Levels of Reality (Nicolescu, 2010).

Considering new learning technologies and those different levels of perceived reality in the context of trans-disciplinarity, a new institutional culture can emerge through knowledge exchange and human interaction from different parts of the world and universities. In this light, the importance of shifting educational paradigms, embracing inclusiveness, valuing diversity, and facilitating a feeling of belonging appears to be one of the essential attitudes' teachers require support to develop and drive the digital transformation. Even though the concepts are well articulated in the literature by different authors and in international reports, the implementation of specific strategies dedicated to real inclusive universities is far away from achieving this (Zambrana et al., 2018; Hanesworth, 2016; OECD, 2014; European Commission/EACEA/Eurydice, 2022; UNESCO, 2021). We argue on the need to rethink learning systems and contexts more sustainably, pragmatically and rationally that integrate the economic dimension as resources are needed to drive meaningful change. We need to put people first in the light of well-being for future generations. At the same time, we should aim to cultivate a generation that will promote peace with itself and the Earth and demonstrate a capacity to handle expanding knowledge, advancing technology, and advancing innovation. However, if we do not consider the value of social sciences and how they can help us understand our role within our global societies, our efforts to move forward will be very limited. At EUt+, we share the vision to *"Think Human First,"* which is closely connected to human security, where humans must take a central role in our aim to minimise conflict and confrontation. Our educational model needs to integrate the development of skills that foster collaboration, cooperation, and our understanding to value and cherish different cultures (Pop and Morales, 2023; Coetzer et al., 2023; Gertz, Huang, & Cyr; 2018; UNESCO, 2020; European Commission/EACEA/Eurydice, 2022).

Beyond these ideological and romantic aspects, we need to focus on our real-life contexts and reflect on how we can put into practice these key concepts. We need top-down support to be able to drive deep and authentic change. In the context of unified European

educational models, the European Commission has provided top-down support due to different founding programmes, like Erasmus+ programme, which offer an excellent opportunity to learn how to integrate different university models and, more importantly, to collaborate with colleagues from different cultures and backgrounds. The main challenges emerge as we critically discuss how to develop a sustainable educational model. A new educational model (ANEM) supported by more inclusive learning and working environments.

Moreover, one of the major challenges faced by collaborations relates to securing and sharing resources and minimising conflict emerging from dominant partners. Access to resources means engagement with powerplay dynamics that can lead to conflict and difficulties in working towards common goals that do not differentiate between institutions and where we embrace the idea of a single university that works together across its united European campuses. This reflection is essential because our behaviours are directly linked to our personal beliefs and values in the transition towards a European Technological University that can provide an educational offer that aligns with our society's demands. Therefore, it is critical that we consider the impact of cultural transformation and how universities will navigate existing and emerging challenges (Kuhn, 1970; Sanger & Gleason, 2020; Armstrong, Armstrong, & Spandagou, 2010; Gertz, Huang, & Cyr 2018; Hanesworth, 2016; OECD, 2014). As part of our cultural transformation, we need to reflect on the needs of our European society and its importance in developing a sustainable educational model, which we consider in the following section.

European Society Requires a New Educational Model

Over the past few decades, we have witnessed unprecedented global economic, demographic, and socio-cultural changes due to globalisation, transnational migration, and various political transformations. These trends are shaping the future of modern Europe, making it more and more culturally diverse, increasing the multicultural character and the number of languages, religions, and ethnic and cultural backgrounds found on the continent. Accordingly, language skills have become increasingly important not only as key enablers for professional growth and effective intercultural dialogue but also as an essential attribute of the contemporary citizen of the world. The Bologna process, signed in 1999 to harmonise HEI in Europe, has been a major driving force in facilitating a large number of academic mobility programmes and initiatives. In this context, international student mobility is on political agendas in most countries, and students are encouraged to pursue at least part of their tertiary education abroad (Merriman, 2010; Fulbrook, 2001; Blanning, 2000; Rüegg, 2004; Psaltis et al., 2017; Smeyers, 2018; Raley & Preyer, 2012; Garrison et al., 2012).

The circular pedagogy framework that represents our contribution towards our vision of ANEM engages all organisation stakeholders, not only learners, teachers, and researchers. To grow and thrive, this vision of pedagogy should be anchored in an organisational culture that fosters complex and multilevel interactions among diverse and different stakeholders. Effective communication is intrinsically necessary, and often, in complex and diverse environments, the choice of language/-es of communication may become an issue. The use of lingua francas has always been an efficient solution in contexts where communication partners do not share a common language. However, this has led to some languages becoming dominant and imposing over local languages, which tend to be less used and lose prestige. English as a lingua franca is a case in point, especially with the growth of globalisation and the increase of internationalisation of higher education. The ubiquity of English in online communication, academic and research communication, and technology

development has long been recognised. On the other hand, Europe actively promotes a multilingualism policy and the parity of esteem of all its living languages[12]. The EUt+ upholds the same principles and takes measures to ensure that its organisational culture reflects equal respect for all languages and promotes learning languages and their use in all situations, rather than replacing them with a single, or even several, lingua franca/-s.

Historically, languages and cultures are connected to national identity. After World War I, European nation-building forces used national languages as a component of legitimising national states, especially in Central and Easter Europe. The fall of empires and imperialism allowed European peoples to break away and build nation-states, to forge a *"national"* culture with a *"national"* language at its core. The birth of the European Union and its subsequent enlargement resulted from opposing centripetal forces, where national states converge into a supra-statal structure (Schmitt, 2019). European society is trying today to overcome divisive elements towards a European cultural identity; therefore, all national and local languages are equally respected and promoted. In practice, this means that multilingual communication should become the norm in any socio-cultural and economic environment (Stone, 2014; Best et al., 2015; Baylis et al., 2008; Rhodes et al., 2006; Badie et al., 2011; Paulsen, 2017; Gough & Scott, 2007; Ninnes et al., 2005).

As a multilingual, multicultural, and internationalised higher education institution, the EUt+ may face a number of difficulties in implementing multilingual communication to avoid extensive use of one or another of its languages as lingua franca at the expense of the use of all the other. The high level of collaboration and networking presented in our *"Circular Pedagogy"* requires effective communication among partners with a wide linguistic repertoire. It is here where advanced digital literacies and the employment of technologies and artificial intelligence (AI) can contribute to maintaining effective communication while using the multiple languages our plurilingual stakeholders speak. The interchangeable roles of learners, teachers, and researchers in our *"Circular Pedagogy"* model will contribute to the creative use of technologies for preserving languages, promoting the learning of languages, and fostering an organisational culture which shares common values in diversity.

Before underlining aspects related to culture, languages, technology and innovation, a focus is required on the term circular process and its definition in different areas of activity: management, economy, and education. Within economics, the term circular economy is seen as measures to start from reducing mainly the waste, towards implementing social innovations in order to start the production process by eliminating waste, in long-term sustainable production, with a maximised yield of the resource's usage: biological materials usage, recycling. The outcome of the circular economy principle generates impact in several critical systems such as decentralised circular water management systems, household wastewater management, and healthcare waste management systems. However, we introduce a novel approach towards pedagogy, we need to reflect further on what we mean by *"Circular Pedagogy"* and how we understanding the circularity of the learning, teaching and research processes and their contribution to fostering a new educational model and the role that it can play and how to move forwards and beyond limited contexts (Kuhn, 1970).

[12] Article 165(1)&(2) of the Treaty on the Functioning of the European Union (TFEU).

Conclusions

The European University of Technology (EUt+) should be able to respond to the ideal of solid training, with serious cultural and scientific bases, with the development of responsibility and civic participation of all educational agents. Neither education nor research should be geared exclusively toward meeting market demands and accelerated technological development. The university intervenes in the labour market and socially to defend and maintain the values of quality, comprehensive education, and training and to strengthen participatory citizenship and cultural resilience. With digitisation, everything has become interconnected due to the emergence of networked social systems and digital social transformation. By changing roles, teachers, students, and researchers within EUt+, collaborating with external parties and experimenting differently in different fields, we aim to bring a new educational model that is more attuned to our modern and evolving society. Learning technologies and innovation emerge as critical players in developing a novel pedagogy where the student, teacher and researcher take interchangeable roles that are more aligned with lifelong learning processes.

The digital transformation contributes significantly to changes in perception and behaviour in how we learn, teach, research, and communicate and even in how we perceive reality, both physically and augmented. This paper argues the importance of challenging existing educational systems and models. We need new approaches towards learning, teaching, and doing research, and we need to reconsider the role of Pedagogy in HEIs. Our work is making a contribution to this area of discussion by introducing a novel approach through our *"Circular Pedagogy",* where the roles of teacher, learner, and researcher change through a continuous effort to reduce the time taken to retain knowledge. In the case of the educational context, for the lifelong learning approach linked to a similar concept, the cyclical process of role interchange is directed towards the quality of learning. The learner becomes a researcher by collecting data, identifying resources, and discriminating sources. At the same time, the learner becomes a teacher as he/she shares his/her experiences with the peer group by sharing his/her own valuable experiences and presentations

However, the awareness and appreciation of education and its pivotal role within our globalised and digital economies demands the integration of creative uses of digital technology. We are at the early stages of shaping the circuit in which the learner, teacher and researcher interact. Our new educational models are challenged by the need to design and master educational content and create supportive working and learning conditions that contribute to developing learners' competencies (Laakso et al., 2021; Sadovets et al., 2022). In this regard, we need to rethink our way of acting and how we interact with people around us, no matter their role, students, colleagues from departments, or other departments or universities from East Europe, Western Europe or around the world. We are aiming to minimise potential barriers in learning processes due to attitudinal approaches towards system differences. EUt+ should consider carefully how to respond to the ideal of solid training with serious cultural and scientific bases and develop an academic culture fostering responsibility and accountability.

At the forefront of progress and the improvement of the living standards of societies globally, we identify the educational system. Current socio-economic and environmental challenges require that we bring new ideas on how the educational system and how academics, researchers and students are open to collaborating and working together. We need to move towards developing a new educational culture that aligns with the demands of our contemporary society and pressing sustainability needs. Therefore, in this working paper, we provided a critical reflection on the importance of developing a new pedagogy attuned to

current challenges and acknowledging higher education institutions' needs. Our future research will examine and reflect on the need to identify ways to promote equity and inclusivity in the light of social justice in education for sustainable development and organisational cultural shift as we keep exploring how to develop the EUt+ educational model for sustainable development that we are coining as ANEM for EUt+. In addition, we are examining how Circular Pedagogy needs to integrate inclusion, technology and engagement as we reflect further on the enhancement of our novel pedagogy through*: "Circular Pedagogy + Inclusive Education 2.0."*

6 References

Ash-Brown, G. (2020). What comes first – technology or pedagogy? Education Technology, 6. Available at: https://edtechnology.co.uk/features/what-comes-first-technology-or-pedagogy/

Alvesson, M., & Sveningsson, S. (2016). *Changing organisational culture: Cultural change work in progress.* (Second edition). Routledge.

Armstrong, A., Armstrong, D., & Spandagou, I. (2010). *Inclusive Education International Policy & Practice.* SAGE Publications.

Asad, M. M., Aftab, K., Sherwani, F., Churi, P., Moreno-Guerrero, A.-J., & Pourshahian, B. (2021). Techno-Pedagogical Skills for 21st Century Digital Classrooms: An Extensive Literature Review. *Education Research International*, 1-12. doi:10.1155/2021/8160084

Asante, M., Miike, Y., & Yin, J. (2008). *The Global Intercultural Communication Reader.* Routledge.

Badie, B., Berg-Schlosser, D., & Morlino, L. (2011). *International Encyclopedia of Political Science.* SAGE Publications.

Banich, M., & Compton, R. J. (2018). *Cognitive Neuroscience.* Cambridge: Cambridge University Press.

Banks, J. A., & Banks, C. A. M. (Ed.). (2013). *Multicultural Education: Issues and Perspectives.* (Eighth edition). John Wiley and Sons, Inc.

Baraldi, C. (Ed.). (2009). *Dialogue in Intercultural Communities: From an Educational Point of View.* John Benjamins Publishing.

Baylis, J., Smith, S., & Owens, P. (Ed.). (2008). *The Globalisation of World Politics: An Introduction to International Relations.* (4th ed). Oxford University Press.

Bennett, J. M. (Ed.). (2015). *The Sage Encyclopedia of Intercultural Competence.* SAGE Publications.

Best, A., Hanhimäki, J. M., Maiolo, J. A., & Schulze, K. E. (Ed.). (2015). *International History of the Twentieth Century and Beyond.* (Third edition). Routledge/Taylor & Francis Group.

Bianchini, J., Akerson, V., Barton, A., & Lee, O. (2013). *Moving the equity agenda forward: Equity research, practice, and policy in science education.* Springer.

Blanning, T. C. W. (Ed.). (2000). *The Oxford History of Modern Europe.* (3rd edition) Oxford University Press.

Boix Mansilla, V., & Schleicher, A. (2022). *Big picture thinking. How to educate the whole person for an interconnected world. Principles and practices.* OECD.

Butollo, F., Gereffi, G., Yang, C., & Krzywdzinski, M. (2022). Digital transformation and value chains: Introduction. Global Networks. *22(4)*, 585–594. Retrieved from https://doi.org/10.1111/glob.12388

Byker, E., & Marquardt, S. (2016). Using Critical Cosmopolitanism to Globally Situate Multicultural Education in Teacher Preparation Courses. *Journal of Social Studies Education Research*, 30-50. Retrieved from https://eric.ed.gov/?id=EJ1121646

Calvo, R., & D'Mello, S. (2011). *New Perspectives on Affect and Learning Technologies.* London: Springer Science+Business Media.

Campbell, A., & Norton, L. (Ed.). (2007). *Learning, Teaching and Assessing in Higher Education: Developing Reflective Practice.* Learning Matters.

Capraro, R. M. (2013). *STEM Project-Based Learning: An Integrated Science, Technology, Engineering, and Mathematics (STEM) Approach.* (2nd Edition) Sense Publishers.

Caroll, J. (1961). Neglected Areas in Educational Research. *Phi Delta Kappan, 42*, 339-343. Retrieved from https://www.jstor.org/stable/20342616

Carter, R., Aldrige, S., Page, M., & Parker, S. (2019). *The Human Brain Book.* United States : DK Publishing.

Chu, S. K. W., Reynolds, R. B., Tavares, N. J., Notari, M., & Lee, C. W. (2017). *21st Century Skills Development Through Inquiry-Based Learning.* Singapore: Springer. doi:10.1007/978-981-10-2481-8

Coetzer, J.-H., Morales, L., Flynn, P., Pop, L., Barkoczi, N., Munteanu, S., . . . Rajdmil, D. (2023). Enhancing Human Security by Transforming Education Through Science, Technology, and Innovations*. *Cadmus Jurnal*, Volume 5 - Issue 1.

Council of Europe. (2007). *Guide for the Development of Language Education Policies in Europe. From Linguistic Diversity to Plurilingual Education.* Strasbourg: Language Policy Division Council of Europe. Retrieved from https://rm.coe.int/16802fc1c4

Cronin, K. (2008). *Transdisciplinary Research (TDR) and Sustainability.* Ministry of Research, Science and Technology (MoRST), Institute of Environmental Science and Research Limited ("ESR"). Retrieve on 03 14, 2023, de pe https://www.learningforsustainability.ne: https://www.learningforsustainability.net/pubs/Transdisciplinary_Research_and_Sustainability.pdf

Cummings, J. B., & Blatherwick, M. L. (Ed.). (2017). *Creative dimensions of teaching and learning in the 21st Century.* Sense Publishers.

Dai, X., & Chen, G.-M. (Ed.). (2017). *Conflict Management and Intercultural Communication.* London: Routledge. doi:10.4324/9781315266916

Davies, B. (1994). On the Neglect of Pedagogy in Educational Studies and its Consequences. *Journal of In-Service Education, 20:1*, 17-34. doi:10.1080/0305763940200103

Elkordy, A., & Iovinelli, J. (2021). Competencies, Culture, and Change: A Model for Digital Transformation in K-12 Educational Contexts. În S. H. D. Ifenthaler, *Digital Transformation of Learning Organizations* (pg. 203–218). Springer International Publishing. Retrieved from https://doi.org/10.1007/978-3-030-55878-9_12

Emler, N., & Fraze, E. (1999). Politics: The Education Effect. *Oxford Review of Education, 25:1-2*, pg. 251-273. doi:10.1080/030549899104242

Erçetin, Ş., & Potas, N. (2019). *Chaos, Complexity, and Leadership 2017. Explorations of Chaos and Complexity Theory.* Switzerland: Springer International Publishing.

European Commision. (2021). *Compendium of Inspiring Practices on Inclusive and Citizenship Education.* Luxembourg: Publications Office of the European Union.

European Commission/EACEA/Eurydice. (2022). *Towards equity and inclusion in higher education in Europe. Eurydice report.* Luxembourg: Publications Office of the European Union.

EUt+. (2023). *The European University of Technology*. Retrieved from https://univ-tech.eu/

Facer, K. (2021). It is not just about jobs: Education for economical wellbeeing. În UNESCO, *Education Research and Foresight. Working papers.* Paris: ED-2021/WP-29/1 UNESCO.

Fawns, T. (2022) An Entangled Pedagogy: Looking Beyond the Pedagogy—Technology Dichotomy. Postdigital Science and Education 4, 711–728 (2022). https://doi.org/10.1007/s42438-022-00302-7

Felder, R. M., & Brent, R. (2016). *Teaching and learning in STEM: A practical guide.* Jossey-Bass.

Feng, A., Byram, M., & Fleming, M. (Ed.). (2009). *Becoming Interculturally Competent through Education and Training.* Multilingual Matters.

Fortes, S., Santoyo-Ramón, J. A., Palacios, D., Baena, E., Mora-García, R., Medina, M., . . . Barco, R. (2019). The Campus as a Smart City: University of Málaga Environmental, Learning, and Research Approaches. *Sensors, 19(6), Article 6*. Retrieved from https://doi.org/10.3390/s19061349

Fovet, F. (2020). Universal Design for Learning as a Tool for Inclusion in the Higher Education Classroom: Tips for the Next Decade of Implementation. *Education Journal, Special Issue: Effective Teaching Practices for Addressing Diverse Students' Needs*.

Fulbrook, M. (Ed.). (2001). *Europe since 1945.* Oxford University Press.

García-Martínez, I., Fernández-Batanero, J. M., Cobos Sanchiz, D., & Luque de la Rosa, A. (2019). Using Mobile Devices for Improving Learning Outcomes and Teachers' Professionalization. *Sustainability, 11(24), Article 24*. Retrieved from https://doi.org/10.3390/su11246917

Garrison, J. W., Neubert, S., & Reich, K. (2012). *John Dewey's philosophy of education: An introduction and recontextualisation for our times.* Palgrave Macmillan.

Gertz, S., Huang, B., & Cyr, L. (2018). *Diversity and Inclusion in Higher Education and Societal Contexts: International and Interdisciplinary Approaches.* Springer International Publishing AG.

Glaeser, E. L. (2022). Urban resilience. *Urban Studies, 59(1)*, 3–35. Retrieved from https://doi.org/10.1177/00420980211052230

Gosper, M., & Ifenthaler, D. (2014). *Curriculum Models for the 21st Century: Using Learning Technologies in Higher Education.* New York: Springer. doi:10.1007/978-1-4614-7366-4

Gough, S., & Scott, W. (2007). *Higher Education and Sustainable Development: Paradox and Possibility.* Routledge.

Grozdanova, L. (2002). Cultural Diversity in a Unifying World – A New Challenge for English Textbook Writers. Small Languages in the Big World. *British Council Bulgaria, Lettera. Sofia*, 126-145.

Hanesworth, P. (2016). Equality and Diversity in Learning and Teaching in Higher Education. *Papers from Equality Challenge Unit and Higher Education Academy joint conferences.* Equality Challenge Unit.

Huang, R., Spector, J., & Yang, J. (2019). *Educational Technology: A Primer for the 21st Century.* Singapore: Springer. doi:10.1007/978-981-13-6643-7

International Union for Conservation of Nature. (2022). *International Union for Conservation of Nature: Centre for Mediterranean Cooperation annual report 2021.* Gland, Switzerland: IUCN.

Jackson, J. (Ed.). (2012). *The Routledge Handbook of Language and Intercultural Communication.* Routledge.

Jandt, F. E. (2018). *An Introduction to Intercultural Communication: Identities in a Global Community.* (Ninth Edition). SAGE.

Jareño, F., Jiménez, J. J., & Lagos, M. G. (2014). Cooperative learning in higher education: Differences in perceptions of contribution to the group. *International Journal of Educational Technology in Higher Education, 11(2), Article 2*. Retrieved from https://doi.org/10.7238/rusc.v11i2.1936

Jensen, T. (2019). *Higher Education in the Digital Era: The Current State of Transformation Around the World.* IUA.

Kabir, M. N. (2019). *Knowledge-Based Social Entrepreneurship: Understanding Knowledge Economy, Innovation, and the Future of Social Entrepreneurship.* Palgrave Macmillan US. Retrieved from https://doi.org/10.1057/978-1-137-34809-8

Kattington, L. E. (Ed.). (2010). *Handbook of Curriculum Development.* Nova Science.

Kerruish, E. (2023). Critical thinking in higher education: Taking Stiegler's counsel on the digital milieu. *Pedagogy, Culture & Society*, 1–17. Retrieved from https://doi.org/10.1080/14681366.2023.2183983.

KPMG (2020) The Future of Higher Education in a Disruptive World. Available at: https://kpmg.com/xx/en/home/industries/government-public-sector/education/the-future-of-higher-education-in-a-disruptive-world.html

Koper, R. (2014). Conditions for effective smart learning environments. *Smart Learning Environments, 1(1), 5*. Retrieved from https://doi.org/10.1186/s40561-014-0005-4

Kuhn, T. (1970). *The structure of scientific revolution.* Chicago: University of Chicago.

Laakso, N., Korhonen, T., & Hakkarainen, K. (2021). Developing students' digital competences through collaborative game design. *Computers & Education, 174*. Retrieved from https://doi.org/10.1016/j.compedu.2021.104308

Labadi, S. (2013). *UNESCO, Cultural Heritage, and Outstanding Universal Value. Value-based Analyses of the World Heritage and Intangible Cultural Heritage Conventions.* Latham: AltaMira Press.

Lehmacher, W. (2017). *The Global Supply Chain.* Springer International Publishing. doi:10.1007/978-3-319-51115-3

Leichenko, R., Gram-Hanssen, I., & O'Brien, K. (2022). Teaching the "how" of transformation. *Sustainability Science, 17(2)*, 573–584. Retrieved from https://doi.org/10.1007/s11625-021-00964-5

Liu, S., Volčič, Z., & Gallois, C. (2015). *Introducing Intercultural Communication: Global Cultures and Contexts.* (Second edition). Sage Publications.

Looney, J. W. (2009). *Assessment and Innovation in Education. OECD Education Working Papers, No 24.* Paris: OECD Publishing.

Luhmann, N. (2017). *Education as a Social System.* Springer Nature.

Lustig, M., & Koester, J. (2010). *Intercultural Competence: Interpersonal Communication Across Cultures.* (6th ed). Allyn & Bacon.

Lyonga, N. A., Moluayonge, G. E., & Nkeng, A. J. (2021). A Study of Techno-Pedagogical Skills and Teachers' Performance in HTTTC Kumba, Cameroon. *European Journal of Education and Pedagogy*, 46–50. doi:10.24018/ejedu.2021.2.1.31

Martin, J. N., & Nakayama, T. K. (2010). *Intercultural Communication in Contexts.* (5th ed). McGraw-Hill Higher Education.

Mattheou, D. (Ed.). (2010). *Changing Educational Landscapes.* Netherlands: Springer. doi:10.1007/978-90-481-8534-4

May, S. (1999). *Critical Multiculturalism: Rethinking Multicultural and Antiracist Education.* Falmer Press.

Merriman, J. M. (2010). *A History of Modern Europe: From the Renaissance to the Present.* (3rd ed). W.W. Norton.

Morales, L., Coetzer, J.-H., Barkoczi, N., Pop, L., Marian, C., & Flynn, P. (2022). *A Circular Pedagogy for Higher Education*. Retrieved from Research Gate: http://dx.doi.org/10.13140/RG.2.2.10493.44001

Muñoz, J. L. R., Ojeda, F. M., Jurado, D. L. A., Peña, P. F. P., Carranza, C. P. M., Berríos, H. Q., ... & Vasquez-Pauca, M. J. (2022). Systematic Review of Adaptive Learning Technology for Learning in Higher Education. *Eurasian Journal of Educational Research*, *98*(98), 221-233. Retrieved from https://doi.org/10.14689/ejer.2022.98.014

Murphy, R., & Honey, R. (2016). *The Wiley Handbook on the Cognitive Neuroscience.* Wiley Blackwell.

Narayanan, A., & Komalavalli, T. (2022). Integration of techno-pedagogical skills in teacher education to enhance employability skills among prospective teachers. *Scholarly research journal for interdisciplinary studies, 10*(73), 17642–17646. doi:10.21922/srjis.v10i73.11666

National Research Council (U.S.); Pellegrino, James, W.; Hilton, Margaret, L. (2012). *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century.* National Research Council (U.S.): The National Academies Press.

Nicolescu, B. (2010). Methodology of Transdisciplinarity–Levels of Reality, Logic of the Included Middle and Complexity. *Transdisciplinary Journal of Engineering & Science, 1*, 17-32.

Ninnes, P., & Hellstén, M. (2005). *Internationalising Higher Education: Critical Explorations of Pedagogy and Policy.* Comparative Education Research Centre. Springer.

OECD. (2014). *Equity, Excellence and Inclusiveness in Education Policy Lessons from Around the World.* OECD.

OECD. (2017). *Educational Opportunity for All: Overcoming Inequality throughout the Life Course.* Paris: OECD Publishing.

OECD. (2020). *Addresing Societal Chalenges Using Trasdisciplinary Research. OECD Sciences, Technology, and Industry. Plolicy Papers.* OECD.

OECD. (2022). *All Hands In? Making Diversity Work for All,.* Paris: OECD.

OECD. (2022). *Building the future of education.* OECD Publishing.

Omic, E., & Halb, J. (2018). *Educational inequality in Europe. Tackling inequalities in Europe: the role of social investment.* Retrieve on 03 14, 2023, de pe

https://coebank.org/: https://coebank.org/en/news-and-publications/ceb-publications/educational-inequality-in-europe/

Oswell, D. (2006). *Culture and Society: An introduction to Cultural Studies.* SAGE.

Patel, F., Li, M., & Sooknanan, P. (2011). *Intercultural Communication: Building a Global Community.* SAGE.

Paulsen, M. B. (Ed.). (2017). *Higher Education: Handbook of Theory and Research.* (Vol. 32). Springer International Publishing. doi:10.1007/978-3-319-48983-4

Pop L., and Morales, L. (2023) Education to Navigate Global Power Dynamics and Conflict through the Lens of Caring, Peace Review, DOI: 10.1080/10402659.2023.2263389

Pop, L., Barkoczi, N., Morales, L., Coetzer, J.-H., Marian, C., & Flynn, P. (2022). *Circular Pedagogy for Smart, Inclusive and Sustainable Education*. Retrieved from Research Gate: http://dx.doi.org/10.13140/RG.2.2.36078.69449

Prentice, C., Devadas, V., & Johnson, H. (Ed.). (2010). *Cultural Transformations: Perspectives on Translocation in a Global Age.* Rodopi.

Psaltis, C., Carretero, M., & Čehajić-Clancy, S. (Ed.). (2017). *History Education and Conflict Transformation.* Springer International Publishing. doi:10.1007/978-3-319-54681-0

Purcell, W. M., Henriksen, H., & Spengler, J. D. (2019). Universities as the Engine of Transformational Sustainability toward Delivering the Sustainable Development Goals: "Living Labs" for Sustainability. *International Journal of Sustainability in Higher Education, 20(8)*, 1343–1357. Retrieved from https://doi.org/10.1108/IJSHE-02-2019-0103

Raley, Y., & Preyer, G. (2010). *Philosophy of Education in the Era of Globalization.* New York: Taylor & Francis.

Raley, Y., & Preyer, G. (2012). *Philosophy of Education in the Era of Globalisation.* Routledge.

Raworth, K. (2017). *Doughnut Economics: Seven Ways to Think like a 21st-Century Economist.* London: Random House.

Redclift, M., & Springett, D. (Ed.). (2015). *Routledge International Handbook of Sustainable Development.* Routledge, Taylor & Francis Group.

Reed, M. S., & Fazey, I. (2021). Impact Culture: Transforming How Universities Tackle Twenty First Century Challenges. *Frontiers in Sustainability, 2*. Retrieved from https://www.frontiersin.org/articles/10.3389/frsus.2021.662296

Rhodes, R. A., Binder, S. A., & Rockman, B. A. (2006). *The Oxford Handbook of Political Institutions.* Oxford University Press.

Riasanow, T., Setzke, D. S., Böhm, M., & Krcmar, H. (2019). Clarifying the Notion of Digital Transformation: A Transdisciplinary Review of Literature. *Journal of*

Competences, Strategy & Management, 10, 5–31. Retrieved from https://doi.org/10.25437/jcsm-vol10-24

Robinson, K., & Aronica, L. (2016). *Creative Schools: The Grassroots Revolution That's Transforming Education.* Penguin Books.

Rüegg, W. (2004). *A History of the University in Europe: Volume 3, Universities in the Nineteenth and Early Twentieth Centuries (1800-1945).* Cambridge University Press.

Sachs, J. (2015). *The Age of Sustainable Development.* Columbia University Press.

Sadovets, O., Martynyuk, O., Orlovska, O., Lysak, H., Korol, S., & Zembytska, M. (2022). Gamification in the Informal Learning Space of Higher Education (in the Context of the Digital Transformation of Education). *Postmodern Openings, 13(1), Article 1*. Retrieved from https://doi.org/10.18662/po/13.1/399

Sanger, C., & Gleason, N. (2020). *Diversity and Inclusion in Global Higher Education.* Palgrave Macmillan.

Schmitt, O. (2019). Der Balkan im 20. Jahrhundert. Eine postimperiale Geschichte. *W. Kohlhammer GmbH*, 7.

Schneegans, S., Lewis, J., & Straza, T. (2021). *UNESCO Science Report: the Race Against Time for Smarter Development.* Paris: UNESCO.

Schreiber, J.-R., & Siege, H. (2016). *Curriculum Framework: Education for Sustainable Development: A Contribution to the Global Action Programme "Education for Sustainable Development".* (2nd updated and extended edition): KMK.

Schumpeter, J. (1942). *Capitalism, Socialism, and Democracy.* New York: Harper & Bros.

Siekkinen, T., Pekkola, E., & Carvalho, T. (2020). Change and continuity in the academic profession: Finnish universities as living labs. *Higher Education, 79(3)*, 533–551. Retrieved from https://doi.org/10.1007/s10734-019-00422-3

Smeyers, P. (2018). *International Handbook of Philosophy of Education.* Springer Berlin Heidelberg.

Smith, T., Avraamidou, L., & Adams, J. D. (2022). Culturally relevant/responsive and sustaining pedagogies in science education: Theoretical perspectives and curriculum implications. *Cultural Studies of Science Education, 17(3)*, 637–660. Retrieved from https://doi.org/10.1007/s11422-021-10082-4

Spencer-Oatey, H., & Franklin, P. (2009). *Intercultural Interaction: A Multidisciplinary Approach to Intercultural Communication.* Palgrave Macmillan.

Spitzberg, B., & Changnon, G. (2009). Conceptualising Intercultural Competence. În D. K. Deardorff, *The SAGE Handbook of Intercultural Competence* (pg. 2-53). Los Angeles: SAGE.

Stone, D. (2014). *Goodbye to all that? The story of Europe since 1945.* (First Edition). Oxford University Press.

The Intergovernmental Panel on Climate Change. (2023). *Synthesis Report of the IPCC Sixth Assessment Report (AR6).* IPCC. Retrieved from https://www.ipcc.ch/report/ar6/syr/

UN (2015) United Nations General Assembly. Resolution Adopted by the General Assembly on 25 September 2015. A/RES/70/1. Available at: https://sdgs.un.org/2030agenda

UNESCO. (2014). *Global Citizenship Education. Preparing learners for the challenges of the twenty-first century.* Paris: UNESCO.

UNESCO. (2020). *Humanistic futures of learning. Perspectives from UNESCO Chairs and UNITWIN Networks.* UNESCO.

UNESCO. (2021). *Reimagining Our Futures Together. A new social contract for education. Report From The International Commission On The Futures Of Education.* UNESCO.

Ustundag, A., & Cevikcan, E. (2018). *Industry 4.0: Managing The Digital Transformation.* Springer International Publishing. doi:10.1007/978-3-319-57870-5

Vavrus, M. J. (2002). *Transforming the multicultural education of teachers: Theory, research, and practice.* Teachers College Press.

Waters, C. N., & al. (2016). The Anthropocene is functionally and stratigraphically distinct from the Holocene. *Science, 351*(6269). Retrieved from https://www.science.org/doi/10.1126/science.aad2622

World Bank. (2011). *Atlas of Global Development: A Visual Guide to the World's Greatest Challenges.* The World Bank. doi:10.1596/978-0-8213-8583-8

World Bank. (2013). *Atlas of Global Development: A Visual Guide to the World's Greatest Challenges.* The World Bank. doi:10.1596/978-0-8213-9757-2

World Bank, UNICEF, FCDO, USAID, the Bill & Melinda Gates Foundation. (2022). *The State of Global Learning Poverty: 2022 Update.* World Bank.

Yusof, M. M. M., Alias, N. A., Luaran, J. E., & Jain, J. (2019). The Integration of Techno-Pedagogical Approach in Teaching and Learning among Lecturers in Public Universities in Malaysia. *International Journal of Academic Research in Business and Social Sciences, 9*(13), 232-250. doi:10.6007/IJARBSS/v9-i13/6258

Zambrana, E., & et al. (2018). *Equity and Inclusion Effective Practicess and Responsive Strategies. A Guidebook for Collage and Univeristy Leaders.*