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VIRTUAL EXCHANGE FOR SKILLS RESILIENCE: A TRANSFORMATIVE LEARNING APPROACH BASED ON THE SEAL-NR PROJECT

Abstract: In the context of global crises, virtual exchange (VE) initiatives have emerged as critical mechanisms for enhancing youth resilience and adaptability. This article analyzes the ERASMUS+ SEAL-NR project as a case study, applying transformative learning theory and the DigComp 2.2 framework. Through an interdisciplinary pedagogical model, SEAL-NR operationalizes VE as both a didactic tool and a mechanism for empowering young people from diverse backgrounds. The findings highlight how VE fosters critical reflection, intercultural collaboration, and the development of transversal digital competences. The study concludes by discussing the relevance of such initiatives for rethinking inclusion, employability, and educational innovation under conditions of socio-economic and geopolitical uncertainty.

1. Introduction The post-pandemic era and the rise of regional instability, including armed conflicts and displacement, have exposed the fragility of traditional educational systems in addressing the needs of youth populations. Within this altered landscape, virtual exchange (VE) is increasingly recognized not as a temporary solution but as a scalable pedagogical infrastructure. The project (Skills Enrichment for Adaptive Leadership in the New Reality), supported by the ERASMUS+ programme, offers a compelling institutional model of VE implementation that targets the development of resilience skills among European and Eastern Partnership youth.

Rather than relying on conventional mobility programs, it develops digitally mediated, intercultural, and challenge-based collaborations that bring together young people across borders. Participants co-create knowledge through structured reflection, dialogue, and action, in alignment with broader EU strategies on digital and green transitions. In this sense, VE is not simply a format but a vector of pedagogical transformation (Cherniavska et al., 2023).

2. Theoretical Framework This study integrates two interlocking theoretical approaches: Transformative Learning Theory (Mezirow, 1991) and the Digital Competence Framework DigComp 2.2 (Vuorikari et al., 2022).

Transformative learning theory positions learning as a process triggered by disorienting dilemmas, leading learners to critically assess underlying assumptions, engage in reflective discourse, and develop revised worldviews and behavioral strategies. Within VE settings, these dilemmas often emerge in the form of intercultural misunderstandings, unfamiliar socio-political contexts, or the cognitive discomfort of cross-disciplinary collaboration. SEAL-NR leverages these tensions as pedagogical stimuli, embedding moments of structured reflection and group feedback to enable transformative insights (Helm, 2015).

DigComp 2.2, developed by the European Commission, outlines five dimensions of digital competence: information and data literacy; communication and collaboration; digital content creation; safety; and problem-solving. SEAL-NR utilizes these dimensions to structure its digital pedagogical environment, with each activity explicitly linked to at least one DigComp area. In this way, the project ensures not only the cultivation of theoretical knowledge but also of practical, certifiable skills.

Together, these frameworks support an understanding of VE not merely as a substitute for mobility, but as a generative process of reflective, technological, and interpersonal development. This positions VE as a cornerstone in emerging models of Education for Sustainable Development (De Wit & Hunter, 2015).

3. SEAL-NR Project Analysis The project consists of a multi-phase pedagogical model: onboarding, intercultural team formation, thematic learning sprints, co-creation challenges, and digital storytelling outputs. Participants are drawn from Ukraine, Azerbaijan, North Macedonia, Poland, and Latvia, representing a spectrum of educational systems, conflict exposure, and digital access.

3.1 Critical Reflection as a Mechanism of Resilience At the heart of the experience are cycles of critical reflection. These are facilitated through group debriefings, reflexive journaling, and mentor-led discussions. Following Mezirow (1991), this structured reflection encourages participants to question normative assumptions about leadership, inclusion, and professional identity. Many students, particularly those from conflict-affected regions, described how VE allowed them to reinterpret their positionality—not as passive recipients of aid but as active agents in reshaping narratives of youth capacity and social change (Cherniavska et al., 2023).

3.2 Digital Collaboration and Connective Learning. SEAL-NR relies on low-barrier, high-engagement digital tools such as Miro, Padlet, and Zoom, which allow for asynchronous and synchronous collaboration. Teams co-designed solutions to real-life challenges (e.g., climate-induced migration, digital inequality), thereby practicing digital content creation and collaborative problem-solving. This mirrors Siemens' (2005) connectivist model, where knowledge is distributed across networks and co-constructed in fluid digital ecologies. This reflects findings by Jager et al.

(2021), who emphasize VE as a tool for awareness-building and interdisciplinary knowledge co-production across higher education systems.

3.3 Skill Acquisition Across the DigComp Framework. Each activity in a project maps onto DigComp areas:

Information literacy: Rapid assessment of sources related to geopolitical challenges.

Communication: Multilingual collaboration using inclusive and respectful language.

Content creation: Development of digital stories and podcasts articulating personal or collective resilience.

Safety: Training on digital wellbeing and data protection.

Problem-solving: Prototyping solutions to real-life scenarios in intercultural teams.

4. Conclusions and Future Directions. SEAL-NR demonstrates that virtual exchange, when designed as a pedagogical ecology rather than an alternative to physical mobility, holds powerful potential for fostering skills resilience among youth. Through a theoretically grounded, evidence-informed framework, the project contributes to the transformation of educational design in contexts marked by precarity, fragmentation, and rapid digitalization.

Future research should explore longitudinal impacts of such programs on youth employability, civic participation, and psychological wellbeing. Additionally, VE should be examined through the lens of platform governance and algorithmic equity, as digital infrastructures increasingly shape access to opportunity.

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