Adapting EntreComp for Neurodiverse Youth: Pedagogical and Cognitive Innovations in the EntrEUth Starter Pack

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ABSTRACT

Entrepreneurship education is increasingly conceptualized as a complex, multidimensional learning process shaped by cognitive, affective, and social dynamics rather than exclusively by economic rationality. Yet despite decades of research into entrepreneurial learning, young people with Specific Learning Disorders continue to encounter structural barriers in accessing competence-based educational resources that align with their cognitive profiles. The EntrEUth project (2023-2-EL02-KA220-YOU-000178333) intervenes in this pedagogical gap by designing an entrepreneurship learning pathway grounded in accessibility, cognitive diversity, and experience-based methodologies. This paper examines the work carried out within the EntrEUth Work Package 3 (EntrEUth Starter Pack) as an innovative pedagogical model adapting the EntreComp framework to the needs of SLD learners. The analysis demonstrates that WP3 functions both as a translational bridge between a theoretical competence framework and cognitively accessible learning experiences, and as an exemplar of inclusive entrepreneurship pedagogy that foregrounds neurodiverse learners' strengths, offering a replicable model for accessible competence-oriented instructional design

Keywords: EntreComp adaptation; neurodiversity; inclusive entrepreneurship education; experiential learning

INTRODUCTION

Entrepreneurial learning has long been recognized as a multifaceted and deeply situated process that extends beyond the acquisition of business knowledge or technical skills. Scholars such as Rae (2006) and Cope (2011) conceptualize entrepreneurship as grounded in lived experience, identity formation, affective engagement, and the ability to make sense of uncertainty through iterative cycles of action and reflection. These perspectives challenge traditional instructional paradigms and position entrepreneurship as a competence that emerges from experiential, relational, and cognitively diverse processes.

Yet competence frameworks - despite their educational sophistication - often presuppose normative cognitive profiles. EntreComp, developed by the Joint Research Centre of the European Commission, is one of the most influential competence models in contemporary entrepreneurship education. It defines entrepreneurship as the capacity to “act upon ideas and opportunities to create value for others,” articulated across three competence areas - Ideas and Opportunities, Resources, and Into Action - and fifteen competences, supported by 442 learning outcomes that span beginner to expert levels. As outlined in the EntreComp Summary, the framework’s aim is not to prescribe entrepreneurial behaviour, but to provide a shared reference for competence development across formal, non-formal, and informal educational settings.

However, despite its conceptual clarity and pedagogical adaptability, the original EntreComp framework is inherently text-heavy, abstract, and subdivided into complex behavioural descriptors that require substantial literacy, sequencing, and working memory capacity. Research in cognitive psychology (Sweller, 1994; Gathercole & Alloway, 2008) and neurodiversity studies (Armstrong, 2010; Eide & Eide, 2011) consistently shows that these are domains in which learners with Specific Learning Disorders, such as dyslexia, dyscalculia, and dyspraxia, experience systematic challenges. Consequently, SLD youth may engage with entrepreneurship in their personal or social environments, yet lack access to structured learning pathways that reflect their cognitive profiles and learning preferences.

The EntrEUth project addresses this misalignment by explicitly designing entrepreneurship learning resources attuned to the cognitive, emotional, and linguistic needs of SLD youth. Work Package 3 (WP3) - the EntrEUth Starter Pack - performs a central function within this pedagogical architecture by transforming the EntreComp framework into accessible, cognitively sustainable formats. Rather than simplifying entrepreneurship, WP3 reimagines the ways in which competence-based learning can be structured to reflect principles of neuroinclusive design. In doing so, WP3 aligns closely with contemporary theories of experiential learning (Kolb, 1984), sociocultural learning (Vygotsky, 1978), transformative learning (Mezirow, 1991), and cognitive load theory (Sweller, 1994; Paas & Van Merriënboer, 2020).

This introductory section thus positions the Starter Pack not merely as a project output, but as a pedagogical intervention grounded in learning sciences and neurodiversity studies. The following sections analyse how WP3 integrates cognitive theory, instructional design principles, and an inclusive reinterpretation of EntreComp's 15 competences to create a learning environment where SLD youth can meaningfully develop entrepreneurial capabilities.

II. FOUNDATIONAL PEDAGOGICAL AND COGNITIVE FRAMEWORKS SUPPORTING THE ADAPTATION OF ENTRECOMP.

At its core, WP3 is shaped by Universal Design for Learning (UDL) principles (Rose & Meyer, 2002), which advocate for multiple means of engagement, representation, and expression to ensure learning opportunities are accessible to cognitively diverse learners. In the context of SLD youth, this principle becomes especially significant because their cognitive strengths are often overlooked in conventional educational settings. Dyslexic learners, for example, may exhibit high creativity, intuitive reasoning, and imaginative problem-solving (Eide & Eide, 2011), yet struggle with linear text processing or sequential instructions. UDL's emphasis on multimodality, flexible pathways, and adaptable learning environments thus provides a foundational lens through which WP3 reinterprets EntreComp.

Furthermore, WP3 integrates cognitive load theory (Sweller, 1994; Paas & Van Merriënboer, 2020), recognizing that learners with reduced working memory capacity require instructional designs that minimise extraneous load. EntreComp in its original form presents a high intrinsic load due to the density and abstraction of its competences. WP3 responds by chunking information, using predictable layouts, integrating visual cues, and providing stepwise scaffolding - strategies aligned with research showing that learners with SLD benefit from structured, low-distraction environments that support comprehension and retrieval (Gathercole & Alloway, 2008).

Concurrently, WP3 draws heavily from experiential learning theory, particularly Kolb's (1984) model of concrete experience, reflective observation, abstract conceptualization, and active experimentation. The Mini-Playbook explicitly foregrounds Experience, Novelty, Emotion, Collaboration, and Reflection as pillars of entrepreneurial learning, which aligns closely with Illeris's (2007) concept of learning as a dynamic interplay among cognition, emotion, and environment. These approaches highlight the necessity of learning environments that encourage exploration, risk-taking, and iterative experimentation - conditions under which SLD learners often flourish when freed from rigid assessment structures.

This synthesis of cognitive and experiential learning theories is further enriched by sociocultural perspectives, particularly Vygotsky's (1978) emphasis on mediated learning and Bruner's (1978) concept of scaffolding. WP3 leverages these principles by structuring tasks that gradually transition from guided prompts to autonomous ideation and project development. In addition, the Mini-Playbook promotes peer collaboration and community engagement, resonating with Lave and Wenger's (1991) theory of situated learning, where learning is inseparable from social participation.

The methodological implication of merging these perspectives is that WP3 can be analysed as both a pedagogical artefact and a design intervention. It is not merely adapting EntreComp; it is reconceptualizing competence development through neuroinclusive learning science. EntreComp's fifteen competences remain at the conceptual core, but their interpretation, sequencing, and delivery are fundamentally transformed to align with cognitive diversity. This hybrid configuration positions WP3 as an instructional mediation tool that bridges theoretical competence models, practical accessibility needs, and socio-emotional dimensions of entrepreneurial learning.

III. REINTERPRETING ENTRECOMP'S COMPETENCE AREAS FOR NEURODIVERSE LEARNERS

EntreComp's three competence areas - Ideas and Opportunities, Resources, Into Action - provide a conceptual architecture for entrepreneurship education that is theoretically robust but cognitively demanding. WP3's innovation lies in its ability to reinterpret each competence in ways that acknowledge SLD learners' cognitive profiles while preserving the intellectual rigour of the framework.

Ideas and Opportunities

This area includes competencies such as creativity, vision, spotting opportunities, and ethical thinking. Research in neurodiversity suggests that many SLD learners excel in holistic thinking, divergent ideation, and intuitive problem-framing (Eide & Eide, 2011). WP3 harnesses these strengths by incorporating visually mediated, narrative-driven, and associative ideation tools such as mind-mapping, guided storytelling, and sensory-based prompts. As evidenced in the Mini-Playbook, the pedagogical design emphasises creativity through playful experimentation, emotional engagement, and curiosity-driven exploration. These methods resonate with Rae's (2006) portrayal of entrepreneurial learning as a process of sense-making and creative synthesis, rather than purely analytical progression.

Resources

The Resources area encompasses self-awareness, motivation, mobilizing others, and resource management, including financial literacy. For SLD learners who may have experienced repeated academic marginalisation, self-awareness and motivation require pedagogical sensitivity. WP3 leverages reflective exercises, competency mapping, simplified financial models, and scenario-based learning to make abstract concepts concrete. The EntreComp Adapted materials offer stepwise behavioural indicators that translate complex competences into relatable actions. This aligns with Zimmerman's (2002) work on self-regulated learning, highlighting the importance of metacognitive scaffolds that build self-efficacy, especially critical for learners whose prior experiences may have fostered academic anxiety.

Into Action

EntreComp's final area focuses on initiative, ambiguity management, risk-taking, planning, teamwork, and iterative learning. For many SLD learners, ambiguity and sequential planning are challenging domains due to vulnerabilities in working memory and processing speed (Gathercole & Alloway, 2008). WP3 addresses these challenges through structured templates, guided project pathways, visual planning tools, prototyping exercises, and error-friendly environments. These approaches mirror Pittaway and Cope's (2007) argument that entrepreneurial learning requires environments that normalize failure as a learning experience. By framing ambiguity not as a threat but as a catalyst for creative experimentation, WP3 builds learners' tolerance for uncertainty and strengthens their entrepreneurial identity formation.

IV. THE ENTREUTH STARTER PACK AS A TRANSLATIONAL BRIDGE BETWEEN THEORY, COMPETENCE FRAMEWORKS, AND INCLUSIVE PRACTICE

WP3's most significant contribution lies in its role as a translational mechanism. Competence frameworks like EntreComp operate at a conceptual level; they articulate "what" entrepreneurs should know, do, or value, but not "how" diverse learners can meaningfully acquire these competences. WP3 addresses this gap by transforming EntreComp's high-level descriptors into cognitively accessible learning experiences grounded in inclusive instructional design.

This translational function evokes Engeström's (1987) theory of expansive learning, wherein new models of practice emerge through the resolution of contradictions. WP3 confronts a central contradiction in entrepreneurship education: competence frameworks offer inclusivity in theory, but not necessarily in practice. By re-mediating these competences through accessible pedagogical formats, WP3 generates a new practice model where neurodiverse learners can participate meaningfully in entrepreneurial learning.

Similarly, the Starter Pack resonates with Mezirow's (1991) concept of transformative learning, as it encourages SLD youth to re-examine internal narratives shaped by earlier experiences of educational exclusion. Through multimodal scaffolding and agency-building tasks, learners begin to experience entrepreneurship as an accessible domain where their cognitive differences become assets rather than barriers.

Moreover, WP3 operationalizes Lave and Wenger's (1991) situated learning theory by framing entrepreneurship as participation in communities of practice rather than purely cognitive mastery. Activities emphasizing collaboration, communication, and real-world relevance provide learners with opportunities to construct entrepreneurial identities through authentic engagement.

Finally, the relational and emotional dimensions embedded within WP3 echo Dweck's (2006) work on growth mindsets, suggesting that inclusive entrepreneurship education requires environments where learners perceive their abilities as expandable through effort, practice, and supportive pedagogy. WP3's accessible and emotionally attuned structure fosters precisely this developmental trajectory.

CONCLUSIONS

WP3 of the EntrEUth project stands as a distinctive and forward-looking intervention in the field of entrepreneurship education, not only because it adapts the EntreComp framework for SLD youth, but because it challenges the epistemological and pedagogical assumptions underpinning competence-based learning itself. By integrating principles from cognitive psychology, experiential learning, neurodiversity studies, and inclusive instructional design, WP3 redefines what it means to cultivate entrepreneurial competences in a way that honours cognitive diversity rather than constraining it.

The Starter Pack illustrates that adapting a competence framework is not merely a task of simplifying content; it is a complex pedagogical negotiation involving multimodal representation, emotional engagement, scaffolding, and the construction of safe learning environments that support agency, resilience, and experimentation. In this sense, WP3 transcends the boundaries of an educational product and becomes a theoretical contribution to the field, demonstrating how competence models like EntreComp can become living, inclusive resources when mediated through thoughtful design.

Moreover, WP3 offers a compelling counter-narrative to deficit-oriented discourses around SLD learners. By foregrounding their strengths in creativity, intuitive reasoning, visual thinking, and associative patterning, the Starter Pack reframes neurodiversity as a valuable dimension of entrepreneurial potential. This perspective aligns with emerging research suggesting that entrepreneurial practice may itself be enriched by cognitive diversity, particularly in domains such as innovation, design, and problem-solving under uncertainty.

In merging experiential learning, cognitive accessibility, and competence-based pedagogy, WP3 also initiates broader reflections on how educational frameworks might evolve to embrace heterogeneity as an asset. It invites educators, policymakers, and researchers to consider how the architecture of learning environments can be redesigned so that all learners, and not solely those who fit the normative academic profile, may engage meaningfully with complex domains such as entrepreneurship.

As such, WP3 can be valued as more than just a project deliverable; it is a methodological demonstration of how inclusive design can transform the landscape of youth entrepreneurship education. The lessons drawn from WP3 offer a blueprint for future initiatives aiming to cultivate entrepreneurial competences among neurodiverse populations, emphasizing that cognitive diversity should not be accommodated at the margins, but integrated at the very foundation of educational design. In this broader sense, WP3 gestures toward a reimagining of entrepreneurship education as a domain where accessibility, creativity, and experiential engagement converge to empower all learners to act upon ideas, generate value, and participate fully in social and economic life.

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