BACKGROUND NOTE

Education and Innovation Practice Community (EIPC)

Online International Knowledge Exchange

Thursday 11 January 2024, 14:30 – 16:15 CET

Cultivating the next generation of green and digital innovators: the role of mainstream higher education

The OECD and the European Commission (EC) have joined efforts to establish an Education and Innovation Practice Community (EIPC). The EIPC seeks to boost dialogue and advance understanding about the competencies that help to trigger and shape the innovation needed for the digital and green transitions, including "deep-tech" innovation, as foreseen under Flagship 4 of the New European Innovation Agenda of the EC.

This note describes the background and focus of the EIPC Online International Knowledge Exchange event, due to take place in January 2024. Together, the speakers and audience will explore how higher education institutions, in their role as providers of advanced education and skills, are adapting mainstream degree programmes to build and deepen the competencies needed for digital, green, and deep-tech innovation. They will also consider how public policy can support these efforts across OECD and EU countries.

Context – the need for advanced competencies has never been greater

People are the cornerstone of successful innovation. While much remains unknown about the links between specific competencies and innovation outcomes, it is clear that advanced disciplinary knowledge and skills are fundamental to innovation (Van Reenen, 2021[1]). In addition, there is a critical shortage of workers in fields that are essential to progress in the green and digital transitions, including STEM fields (European Commission, 2023[2]).

Consequently, countries across the OECD and EU are striving to understand which competencies are essential to promote green and digital innovation and how best to cultivate these. Advanced competencies can be developed through education, particularly higher education. While much attention is paid to the role of higher education institutions in research and innovation systems, mainstream higher education is also the primary supplier of advanced field-specific knowledge and skills to economies and societies. A wealth of evidence points to the positive relationship between educational attainment and capacity for innovation, at the level of individual firms, and entire economies (Biasi, Deming and Moser, 2021[3]).

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Moreover, while the relevance of specific knowledge and skills for frontier innovation may change over time, many "evergreen" abilities, such as critical thinking, creativity and socio-behavioural and emotional skills– generally when combined with relevant disciplinary knowledge - retain an enduring relevance in the most innovative industries and in fostering positive labour market outcomes (Avvisati, Jacotin and Vincent-Lancrin, 2014[4]; Weinberger, 2014[5]; European Commission, 2020[6]). Higher education institutions are increasingly expected to deepen these cross-functional competencies in their students, building on foundations developed earlier in the education lifecycle, such as social and emotional skills, digital skills, and environmental awareness (OECD, 2023[7]).

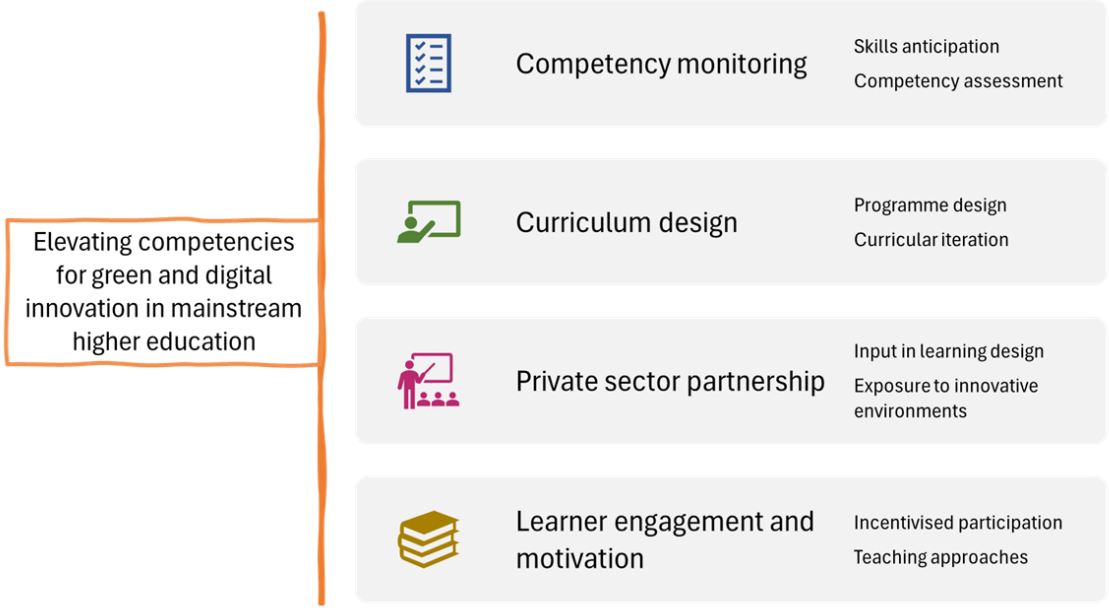
What can higher education institutions do and what do they need to succeed?

Higher education institutions have always been at the forefront of providing advanced academic and frontier knowledge to learners in all fields of study (Godin and Gingras, 2000[8]). Recently, more emphasis has been placed on the role of higher education in skills development, including practical discipline-specific skills and cross-cutting competencies valued in a variety of economic and social settings. This shift comes at a time of increasing policy focus on defining and specifying the learning outcomes and professional competencies that students gain from their academic programmes (OECD, 2012[9]).

Mainstream higher education is essential for cultivating the competencies needed by future green and digital innovators. The extent to which higher education institutions do this successfully depends on the decisions and actions they take across their educational activities. Ideally, these decisions and actions will be reinforced by the support and collaboration of businesses and industries at the forefront of innovation and a favourable policy context.

Thus, optimising the potential of higher education systems to develop competencies for green and digital innovation needs a dual approach, with policymakers creating favourable conditions and higher education providers proactively developing their educational offer. OECD analysis identifies four mechanisms that policymakers and practitioners can use to elevate and deepen the development of these essential competencies (Figure 1).

Figure 1. Mechanisms to enhance competency development for green and digital innovation in mainstream higher education



Participants at the International Knowledge Exchange event will reflect on how these four mechanisms can be supported and strengthened in mainstream higher education, in order to cultivate and deepen the competencies needed to solve the most pressing problems of the future. The key questions of focus for the event are:

- How do higher education systems **identify and monitor the key competencies** for green and digital innovation? What are the options for assessing the current and likely future demand for knowledge and skills, and to what extent can the supply of in-demand competencies be ascertained?
- How can higher education systems **adapt degree programmes and curricula** to develop the deep knowledge base and advanced skills needed to participate in and lead green and digital innovation?
- How can higher education institutions **develop and deepen fruitful partnerships with private sector innovators**, ensuring the relevance of higher education degree programmes for green and digital innovation processes?
- How can higher education policymakers and practitioners best **engage and motivate learners** to build the knowledge and transversal competencies that support their effective contribution to green and digital innovation?

References

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