

# LANDSCAPING DIGITAL TRANSFORMATION IN ACADEMIC EDUCATION PROGRAMS WITHIN EUROPE

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## DIGITAL TRANSFORMATION – CAPACITY & SKILLS

- Digital Transformation (DT) can be defined as a multidimensional transformation that results in new developments and redefines practices and relationships between various stakeholders, in the way they offer services and products (Zaoui and Souissi, 2020).
- This worldwide change is happening at a different pace throughout the globe. The Global North took the lead in advancing policies to support technological developments and their adoption. The Global South initially struggled to track such improvements, depending on richer countries' suppliers to adopt new technologies.
- In Europe, more than 90% of professional roles require a basic level of digital knowledge. On the other hand, around 42% of Europeans still lack basic digital skills, including 37% of those in the workforce (EU 2022).
- As of Cedefop (2022) 45% of adult workers acknowledge that they need new knowledge and skills to work with digital technologies.
- Developing digital skills becomes a top priority, ensuring that people are well-versed in digital skills, which in turn not only boosts the competitiveness of businesses but also empowers individuals to play an active role in shaping the digital future.
- The future demand for skills will drive increased digitalization, leading to task re-engineering with a strong focus on upskilling and reskilling, particularly in digital competencies.

**RQ: What are the essential content elements of educational initiatives driving digital transformation capacity building by HEIs in Europe?**

## METHODOLOGY

- Benchmarking methodology as per Nugroho and Jaqin (2021) has been used to determine learning and promotion strategies in European HEIs.
- The first step of the research was the determination of a methodology appropriate to analyse European experience in capacity building on DT.
- The second step was a research team formulation, composed of members from four European countries: Austria, The Netherlands, Italy, and Poland.
- In the third step, collection of data has been performed to find HEIs courses and programmes fitting training or teaching knowledge and skills for DT. Research took place between April and June 2023 and resulted in an analysis of 148 courses/programmes. The mapping focused on understanding the main topics (content), the length of programmes (duration), workload (ECTS), and the approach (delivery method) used. To enable subject analysis, each course has been assigned keywords describing its main content, based on DT characteristics (Phuong, et al., 2023; Morakanyane, Grace, & O'Reilly, 2017; Morze & Strutyńska, 2021).
- Finally, the count of keywords has been performed, enabling identification the of commonalities among teaching courses.

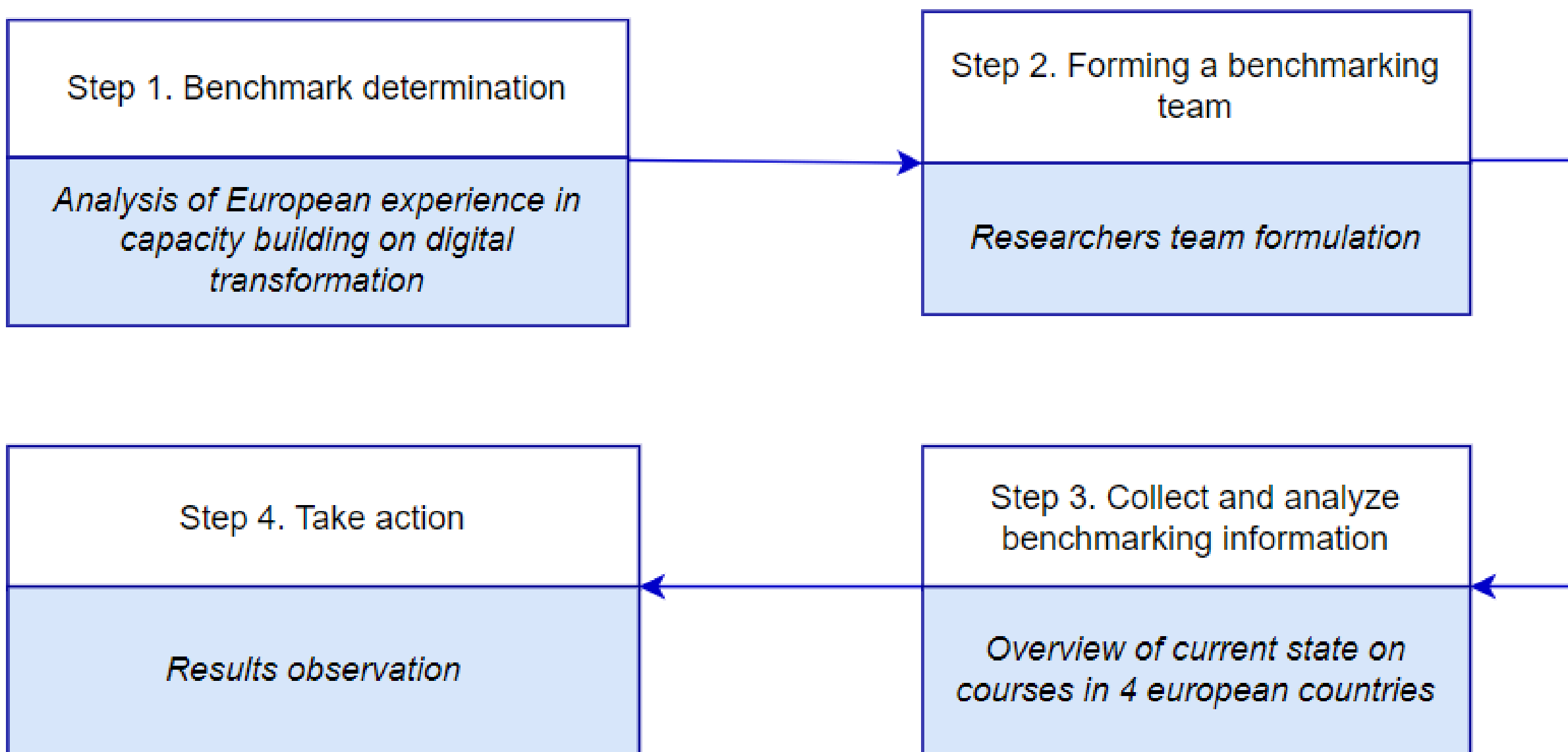


Figure 1: Source: Benchmark process based on Spendolini (1992)

## FINDINGS

- While the EU's overarching DT agenda provides a unified framework, the specific educational responses vary significantly across member states. Each country exhibits unique educational focuses.
- These variations reflect the importance of a flexible and context-specific approach when addressing educational offerings, which should be adjusted to local market and society needs for the challenges of the digital future.

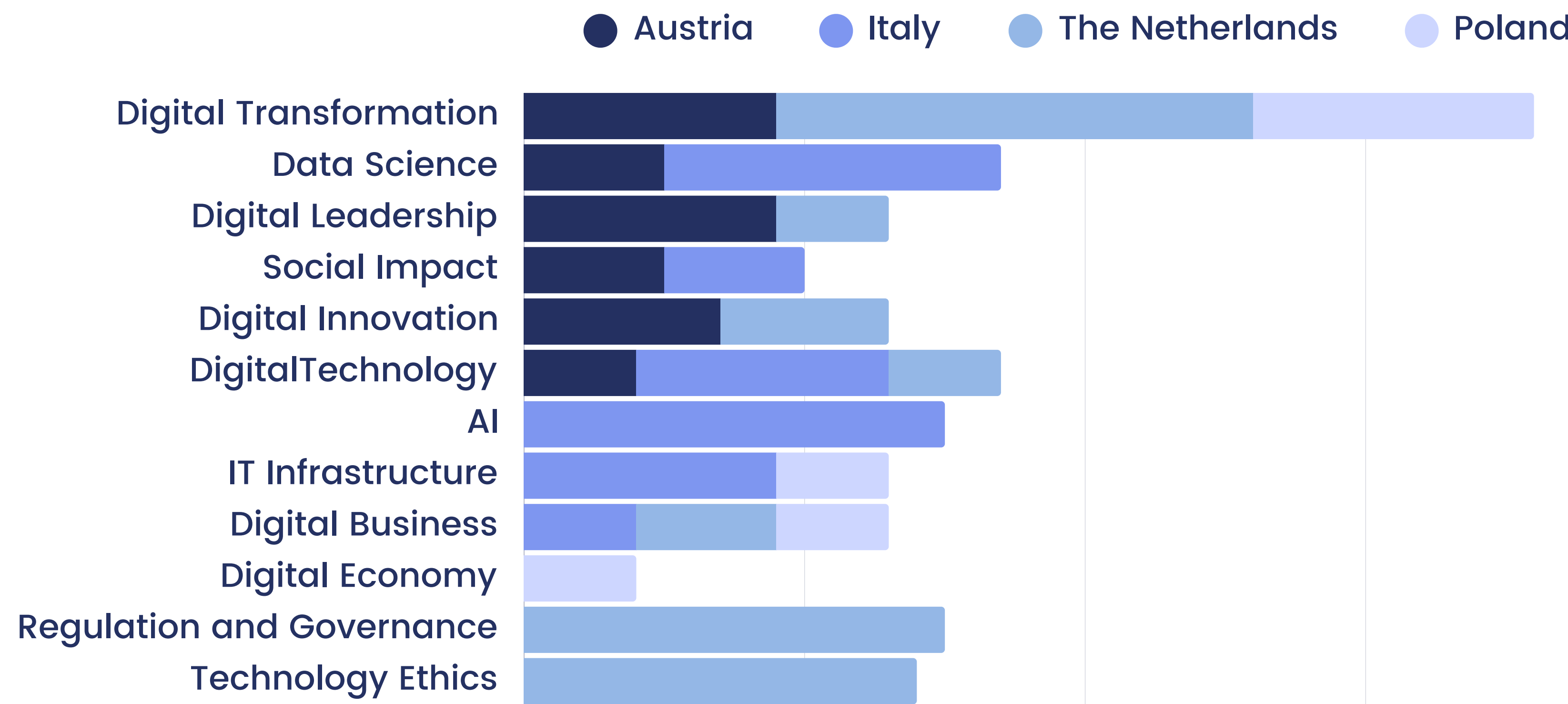


Figure 2: Differences between countries by keywords assignments occurrence

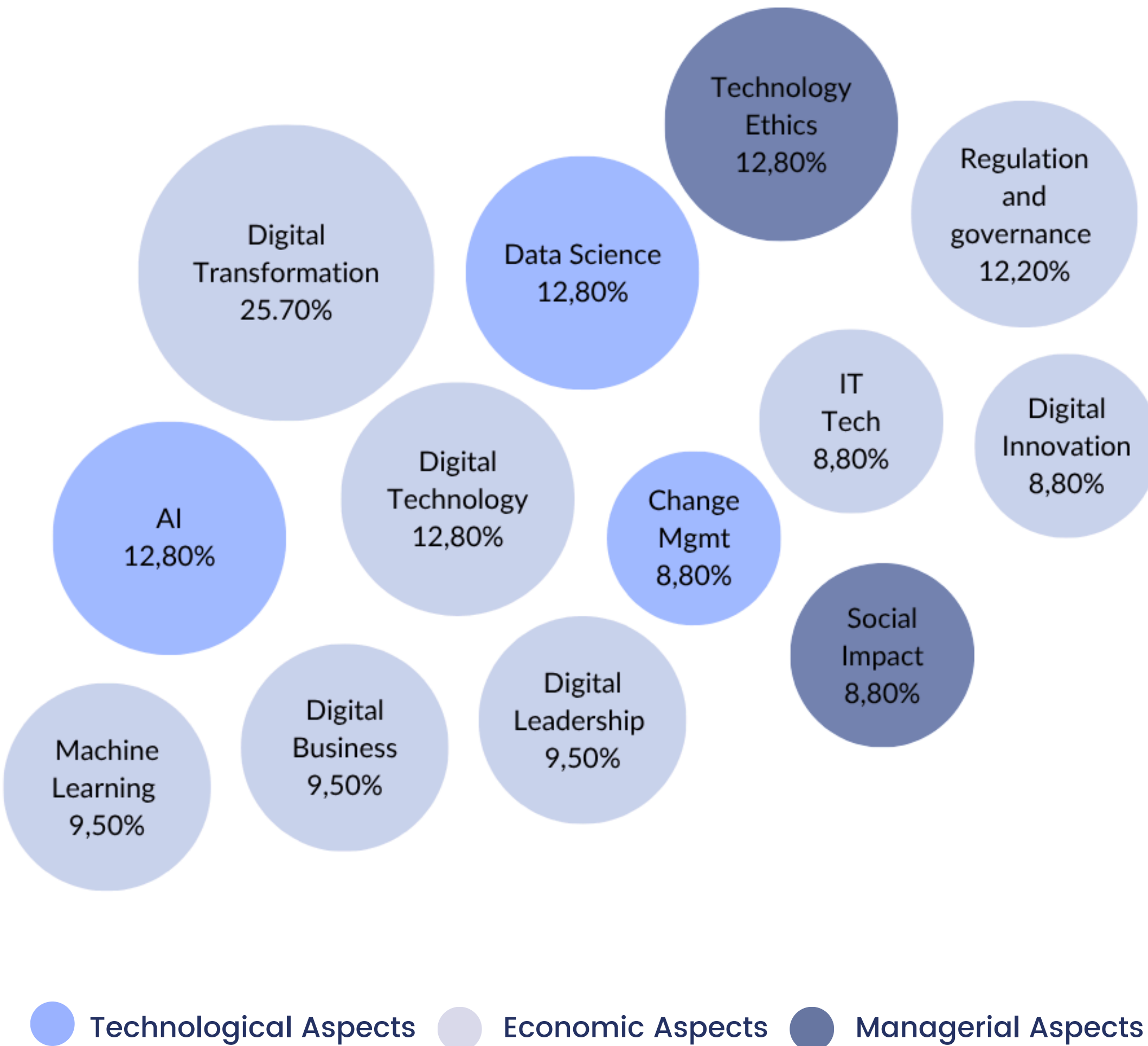


Figure 3: Most frequently present focus area of courses (out of 360 keywords)

## CONCLUSION

- The most popular elements of DT curricula are AI, Data Science and Digital Engineering.
- In addition, emerging elements are: technology ethics, regulation and governance, and digital leadership. This also suggests that technological aspects are currently balanced with business and management aspects.
- Several programs are located at the intersection between technology and society.
- While in the past, technological advancements were mainly studied in scientific academic programs, today we increasingly see undergraduate and postgraduate programs in social sciences including courses on the impact of emerging technologies and digitalization in government, industries, markets, and society in general. The subject of DT is naturally part of technical studies (as part of technical skills), and social studies (use of technology in economics and management sciences) but also of less obvious humanity, culture, law, or biomedical studies. This shows that the need and demand for digital skills are very general and cover various disciplines of study.
- The growing inclusion of digital transformation topics in non-technical disciplines indicates a holistic approach to digital education.
- This broad integration reflects the EU's vision of a digitally inclusive society where everyone, regardless of their field of study, possesses the digital skills needed to thrive in the modern world.

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