

Bridging the Digital Skills Gap: Business-Oriented Digital Tools and AI in Management and Administration Education

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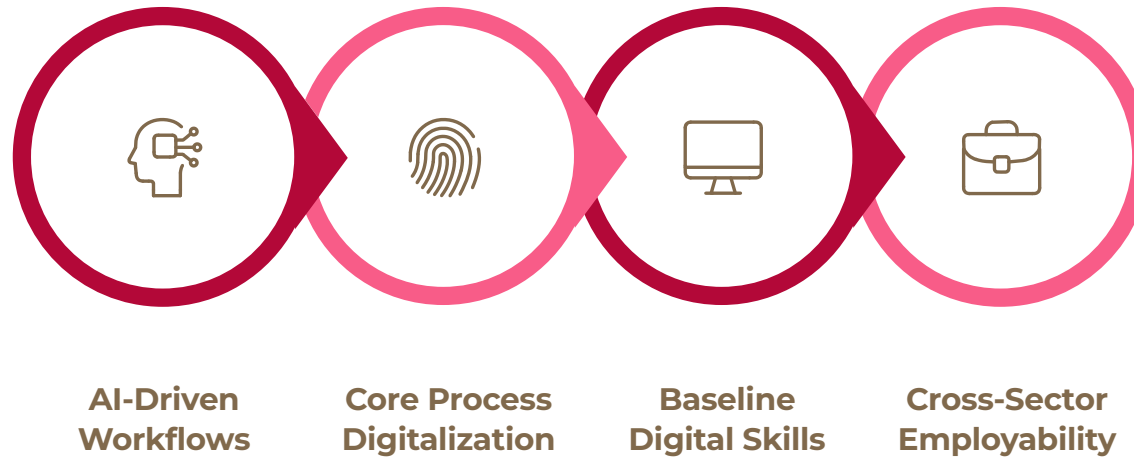


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Digital Transformation Topicality

Digital transformation is fundamentally reshaping work environments as organisations increasingly digitalise their core processes and integrate artificial intelligence into daily operations. **Digital skills are becoming a baseline requirement for employability across all sectors.**



Latvia

Strong emphasis on the digitalisation of workflows and the integration of AI tools into organisational processes. **Adaptation is ongoing but demands continuous upskilling.**

Croatia

Digital skills are explicitly positioned as a minimum threshold for employment across sectors. Organisations expect new hires to arrive with foundational digital competencies already in place.

Problem: Digital Skills Gap

There is a clear mismatch between higher education outcomes and labour market needs, where graduates struggle to apply knowledge in real-world contexts. The gap is not primarily about what students know, but about what they can *do*.

Latvia

The gap is strongly influenced by rapid technological change and slow curriculum adaptation. **Educational institutions have difficulty keeping pace with the speed of digital tool evolution in professional settings.**

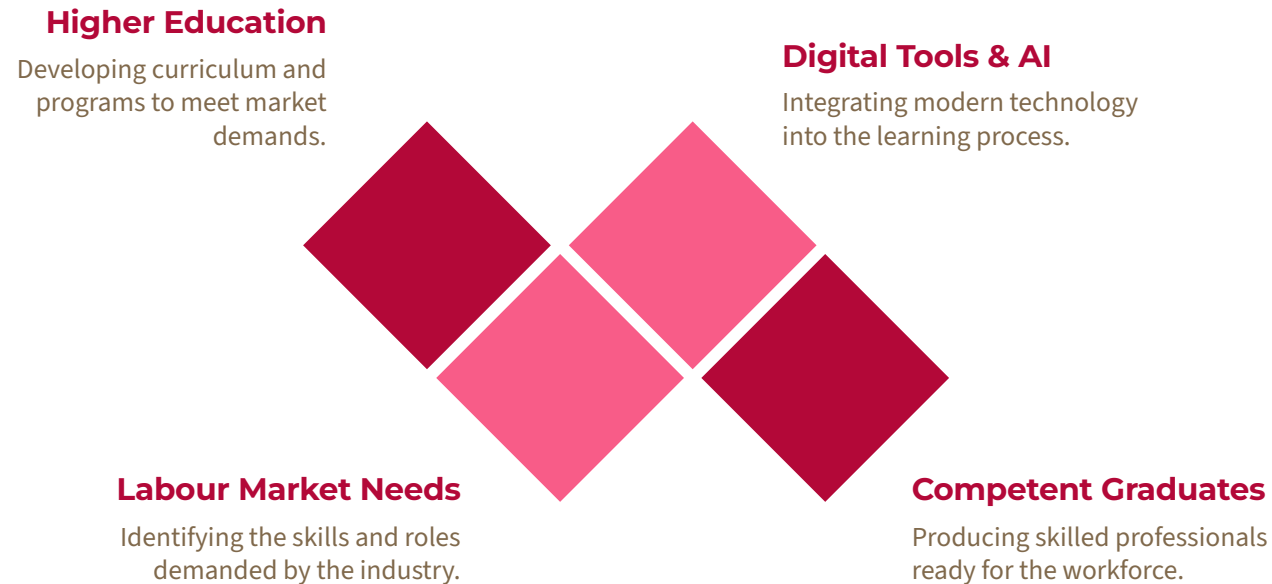
Croatia

The gap is strongly linked to a lack of practical experience rather than theoretical knowledge. **Students graduate with sound conceptual understanding but limited applied competence in workplace digital environments.**

- ☑ The digital skills gap is primarily about application, not knowledge.

Research Aim

Study analyses the alignment between labour market requirements and higher education, focusing on the use of digital tools and AI in management and administration. It examines how these competencies are reflected in curricula and identifies the digital skills gap, particularly in data interpretation, critical thinking, and practical application. **A comparative analysis of Latvia and Croatia highlights both shared challenges** and the importance of adaptability and continuous learning for graduate employability.



Research Questions

The study is structured around three interconnected research questions that together address the scope and nature of the digital skills gap in higher education and the labour market.

1

RQ1 — Relevant Tools

Which digital tools and AI applications are most relevant in today's management and administration labour market?

2

RQ2 — Reflection in Education

To what extent are these tools and competencies reflected in higher education curricula in Latvia and Croatia?

3

RQ3 — Nature of the Gap

What is the nature and extent of the digital skills gap? Is it about tool knowledge, data interpretation, or critical application?

✓ RQ3 — the skills gap — is the central research focus of this study.

Methodology

A mixed-methods approach is employed, combining quantitative and qualitative data collection with expert discussions to ensure a comprehensive and contextually rich understanding of the digital skills gap.



Quantitative, Qualitative Data

Structured survey instruments and analysis of job advertisement data to measure tool prevalence and skill requirements across sectors.



Expert Discussions

In-depth discussions with industry **16 experts** to capture real-world challenges and nuanced insights into daily digital tool use.



Labour Market Requirements

Additional empirical analysis of 849 (HR), 2454 (LV) job advertisements, providing concrete evidence of employer digital skill expectations.

- ✔ Combining methods ensures a comprehensive, multi-dimensional understanding of the skills gap.

Expert Panel

The expert panel convened for this study includes professional representatives from a broad range of sectors, ensuring that findings reflect diverse organisational contexts and labour market realities.



Administrative, Quality & Compliance

Functions Roles focused on organisation-wide administrative processes, including office administration, document and process management, quality assurance and compliance.



Public & Regulatory Administration

Positions within public sector and regulatory institutions characterised by work in a highly regulated institutional environment.



Financial, Banking & Insurance Administration

Roles centred on financial and economic data processing, analysis and administration, including accounting, budgeting, auditing, risk management, banking and insurance administration, as well as economist positions primarily focused on financial and economic analysis.



Human Resources, Training & Personnel Administration

Positions related to the administration and management of personnel, including recruitment, personnel records, training coordination and competence development.



Organisation, Project & Strategic Management

Roles responsible for planning, coordinating and managing organisational activities at a strategic or project level.



Marketing, Communication & Public Relations

Positions focused on internal and external communication, marketing activities, media relations and public relations.



Trade, Logistics & Operational Coordination

Roles engaged in the coordination and execution of operational processes related to trade, procurement, logistics and transport.



Education

Positions within educational and research institutions related to administration, coordination or management.

Top Tools: Latvia and Croatia

Analysis of job advertisements and expert discussions reveals both commonalities and notable differences in the digital tools most demanded by employers in Latvia and Croatia. The data also highlights a striking structural difference in how explicitly digital skills are signalled in job postings.

Latvia — Top Tools

Tool	Mentions
MS Excel	799
MS Word	571
MS Outlook	507
CRM systems	283
ERP systems	279

Croatia — Top Tools

Tool	Mentions
MS Excel	131
MS Word	63
CRM systems	54
PowerPoint	36
Data tools	20

Up to approximately 55% of Croatian job advertisements do not explicitly require any digital skills — suggesting that digital competence may be assumed rather than specified, or that the gap in explicit requirements itself reflects a structural challenge.

Finding #1: Digital Skills = Core Competence

Digital skills have transitioned from a valued add-on to a core professional competency expected across all sectors and organisational functions. They are fully integrated into daily work processes, where professionals are required to use multiple digital systems, data tools, and AI applications as part of routine tasks. **This expectation is consistent across both Latvia and Croatia, where digital competence is considered a baseline requirement for employability rather than a competitive advantage.**

Latvia

The findings indicate that digital skills have become a fundamental requirement across all sectors.

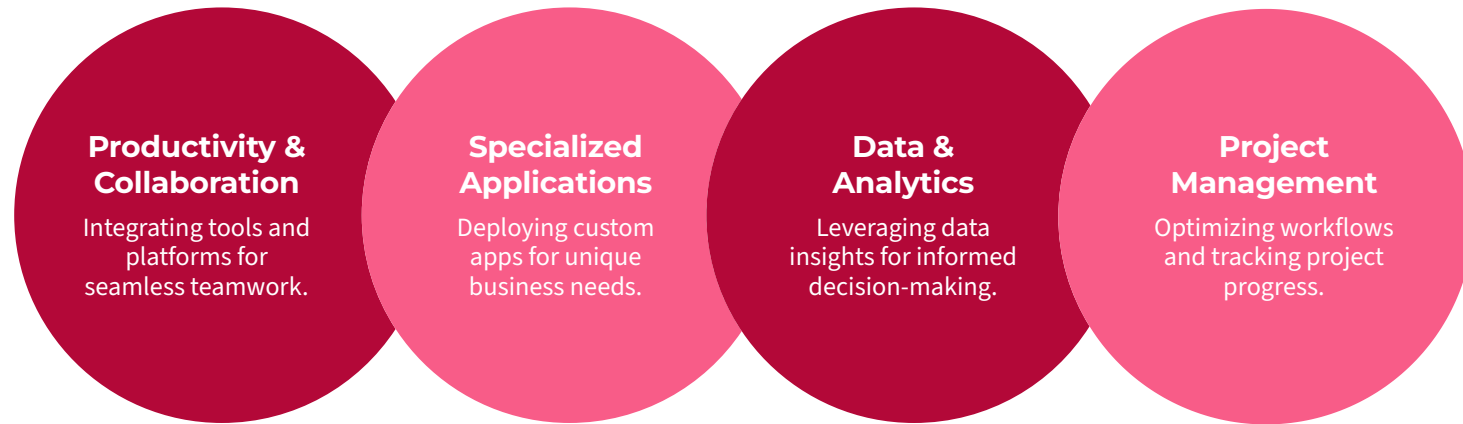
Croatia

Digital skills are no longer optional but a baseline requirement. Across all sectors, digital competence is a prerequisite for employability, not a competitive advantage.

✓ Digital competence is a fundamental requirement in modern work — not a bonus qualification.

Finding #2: Complexity of Digital Environment

Professionals today do not operate within a single system but navigate a complex ecosystem of multiple digital platforms simultaneously. **Respondents typically work across 5 to 10 different systems during a single workday, including enterprise systems, communication tools, and data platforms.** These systems are often not fully integrated, requiring employees to switch between environments, manage fragmented information, and maintain efficiency across interconnected workflows.



Latvia

The findings indicate that employees experience digital work as complex due to the need to operate across multiple systems.

Croatia

Strong general digital literacy is expected from all graduates. This includes advanced use of office tools, online communication, and collaboration platforms.

Finding #3: Tools in Practice

In practice, digital tools do not operate in isolation. They form interconnected ecosystems that professionals must navigate holistically. The most widely used categories include enterprise resource planning, HR management, business intelligence, and AI-assisted tools.

ERP Systems

SAP, Oracle, and similar platforms underpin core business processes in finance, logistics, and operations management.

HR & CRM Systems

Human resource management and customer relationship tools are standard in people-facing and client-oriented roles.

BI & Data Tools

Business intelligence platforms and tools like Excel are central to data-driven decision-making across all management levels.

AI Tools

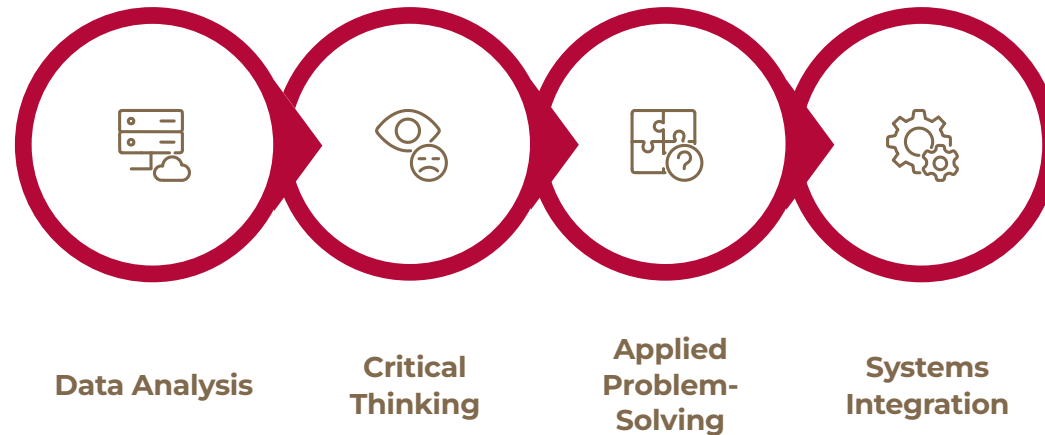
AI-assisted tools are increasingly embedded in workflows, requiring professionals to evaluate, apply, and critically assess AI outputs.



The key skill is not operating tools in isolation, but understanding and interpreting the data they produce.

Finding #4: Where the GAP Appears

The most significant skills gap identified in both countries is not related to tool familiarity, but to higher-order cognitive competencies — particularly the ability to analyse and interpret data, think critically, and apply knowledge in real-world professional contexts. Graduates often struggle to translate theoretical understanding into practical action, especially when working across multiple systems or using AI-supported tools. This highlights the need for stronger emphasis on applied problem-solving and decision-making skills in complex digital environments.



Latvia

The findings reveal that the digital skills gap is primarily related to cognitive and applied competencies rather than technical knowledge alone (including limited data analysis and interpretation skills, lack of critical thinking, low cybersecurity awareness, insufficient practical application skills, and difficulty working across systems).

Croatia

A major gap exists in practical application of digital skills. Experts consistently emphasize lack of real-world experience over lack of theoretical knowledge.

Finding #5: Education–Labour Market Misalignment

A persistent theory–practice gap characterises higher education in both Latvia and Croatia, where students receive insufficient exposure to real-world scenarios, applied tasks, and the complexity of professional digital environments. Learning is often focused on theoretical knowledge, with limited opportunities to work with real data, case-based problems, or integrated digital systems. As a result, graduates struggle to apply their knowledge in practice and to operate effectively in dynamic, multi-system work environments.

Latvia

The results indicate a misalignment between higher education and labour market needs, particularly in the gap between theoretical knowledge and practical application. This is reflected in limited exposure to real-life scenarios, case-based learning, and applied problem-solving, as well as insufficient development of transferable digital skills. The issue is further reinforced by outdated professional standards, which slow the ability of education systems to adapt to evolving labour market demand.

Croatia

In Croatia, digital mindset is considered more important than knowledge of specific tools, reflecting the rapidly changing nature of digital work environments. Employers place strong emphasis on adaptability, curiosity, and the ability for continuous self-directed learning, as these competencies enable graduates to navigate new systems and technologies effectively. Rather than focusing on familiarity with particular software, the priority is the ability to learn, adjust, and apply digital skills across different contexts.

✓ Transferable skills and a growth mindset are more important than mastery of any specific tool set.

Finding #6: Employer Expectations and Graduate Readiness Gap

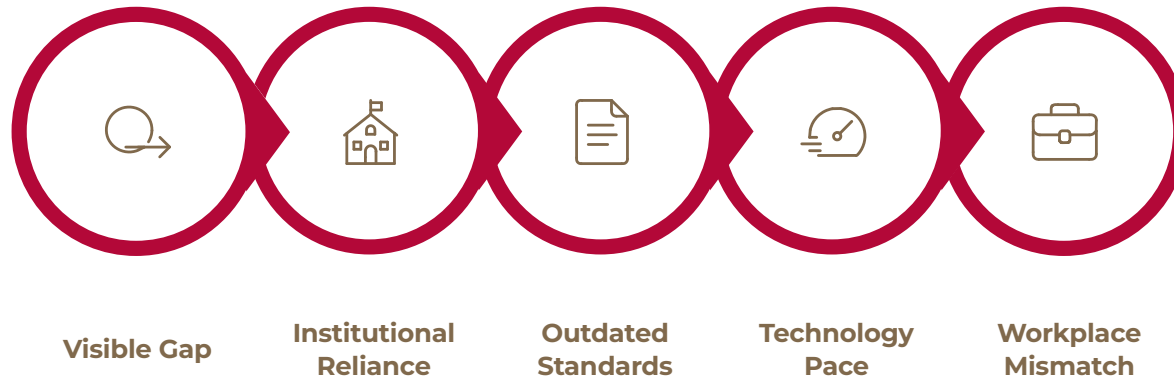
Employers expect graduates to possess strong foundational digital skills and the ability to operate independently in digital environments, yet significant gaps remain in advanced competencies and critical application.

- 
- Latvia**
 - Employers expect **strong foundational digital and self-service skills**, including the use of office tools and independent navigation of platforms (e.g., e-signature, tax systems, internal systems).
 - Basic competencies are considered a **minimum entry requirement**, while advanced skills are expected to be developed in the workplace.
 - Emphasis is placed on **ability to learn, adapt, and take initiative** in evolving digital environments.
 - Croatia**
 - Graduates often lack **advanced Excel and analytical skills**, which are identified as critical weaknesses
 - There is a growing concern about **over-reliance on AI without critical evaluation**, including failure to verify outputs
 - A **gap between academia and industry is increasing** due to rapid technological change
 - Employers prioritise **continuous learning, adaptability, and the ability to update skills and work across new systems**

⚠ Employers expect readiness, but the gap lies in advanced skills, critical thinking, and continuous adaptation.

Structural Issue: Outdated Professional Standards

A significant structural barrier identified in both countries is the lag between professional standards frameworks and the pace of technological development. Educational institutions rely on formally validated standards, but these standards are frequently years behind actual workplace requirements.



Latvia

Higher education curricula are designed and accredited based on professional standards that no longer accurately reflect the digital competencies demanded by contemporary employers. This creates a systemic disconnect that is slow to self-correct.

Croatia

Outdated standards reinforce the gap between academic preparation and industry expectations, limiting the responsiveness of institutions to evolving labour market needs and digital transformation trends.

Employer Expectations in LV / HR

Expert discussions and job advertisement analysis reveal a consistent picture of what employers actually value when hiring management and administration graduates. The emphasis is less on specific tool proficiency and more on transferable cognitive and behavioural competencies.



Critical Thinking

Employers across both countries prioritise the ability to analyse information, evaluate options, and make sound judgements — especially in data-rich and AI-assisted environments.



Data Skills

Latvia emphasises foundational digital and data skills; Croatia specifically highlights critical AI use and data-driven decision-making as key employer requirements.



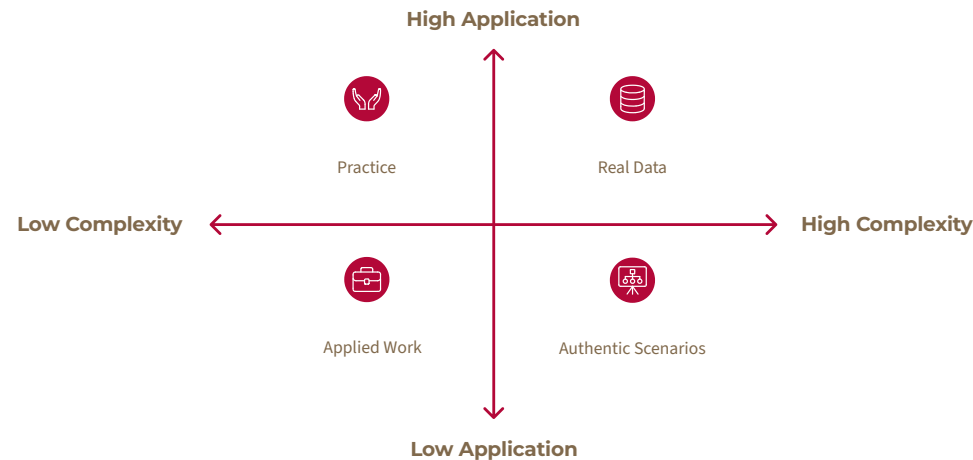
Adaptability & Motivation

Latvia's employers place high value on motivation to learn and the ability to upskill independently — recognising that specific tools will change, but the capacity to adapt will not.

✔ Employers value adaptability and critical thinking far above knowledge of any particular tool.

Recommendation #1: Practice-Oriented Learning

The most direct path to closing the digital skills gap is through practice. Education must move beyond theoretical instruction and provide students with structured exposure to real data, authentic scenarios, and applied professional tasks.



Latvia

Curricula should integrate **real-life scenarios and case-based learning** that reflect the complexity of actual workplaces, including **multi-system environments, data interpretation challenges, and applied problem-solving situations**.

The emphasis is on ensuring that students can **transfer theoretical knowledge into practical competence** in realistic digital work contexts.

Croatia

There is a strong emphasis on **project-based and hands-on learning**, where students actively work with **authentic datasets, real workplace tools, and decision-making situations under uncertainty**.

The focus is on developing the ability to **analyse data, think critically (especially when using AI), and operate in unfamiliar digital environments**.

Recommendation #2: Develop Digital Thinking

Rather than focusing exclusively on training students to use specific tools, higher education should prioritise the development of **cognitive and data-related competencies** that remain relevant regardless of which platforms or systems are in use.

Critical Thinking

The ability to evaluate information sources, question assumptions, and reason through complex problems — especially when working with AI-generated content and making decisions in uncertain or incomplete situations.

Data Literacy

The ability to **analyse and interpret data across different formats**, including tables, reports, graphs, and dashboards, and to extract insights that support decision-making. This includes understanding **data reliability, limitations, and data-driven processes**.

Cross-Subject Integration (HR)

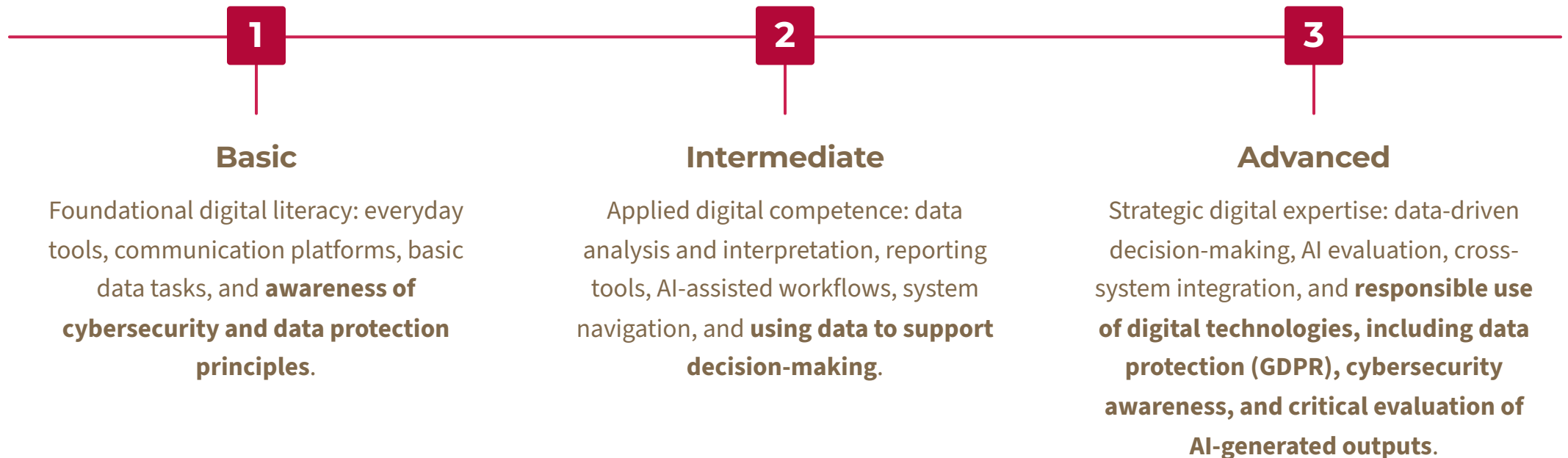
Digital thinking skills should be embedded across all study subjects, ensuring that competencies such as data interpretation, problem-solving, and decision-making are developed in different disciplinary contexts.

AI Usage Skills (LV)

Latvia emphasises developing practical AI usage skills together with the ability to critically evaluate, verify, and responsibly apply AI-generated outputs in professional contexts.

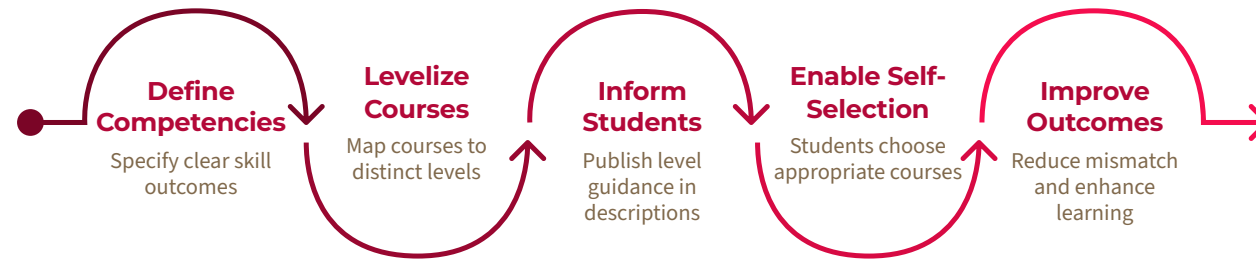
Recommendation #3: Simplified Competence Levels

Existing digital competence frameworks, such as DigComp, are often perceived as complex and difficult to operationalise in curriculum design. A simplified three-level structure would make competence expectations clearer., more practical, and easier to apply in real educational and professional contexts



Recommendation #4: Indicating Levels in Elective Courses

Clearly defining competence levels within elective course descriptions enables better alignment between students' existing skills and course requirements, supports more informed course selection, and improves overall learning outcomes.



Latvia

Competence level labelling helps reduce the mismatch between students' existing digital and self-service skills and the demands of elective modules, enabling more targeted, practice-oriented, and effective skill development.

Croatia

Level indicators in elective courses should also reflect broader digital competencies, including digital communication (e.g., email, online meetings), collaboration in digital environments, use of project management tools, and the ability to learn and apply new systems. In addition, they should incorporate AI ethics, bias awareness, and output verification to ensure responsible and critical use of digital tools.

Conclusion

The digital skills gap is a significant and well-evidenced challenge in both Latvia and Croatia, highlighting a mismatch between higher education outcomes and labour market expectations.

Latvia

Evidence confirms a **clear mismatch between what higher education provides and what the labour market requires**, particularly in:

- **data analysis and interpretation**
- **system navigation and multi-system work**
- **practical application of AI tools**

Croatia

Findings emphasise that the key to employability lies in:





- **continuous learning and adaptability**
- **strong digital mindset**
- **ability to critically evaluate AI-generated outputs**

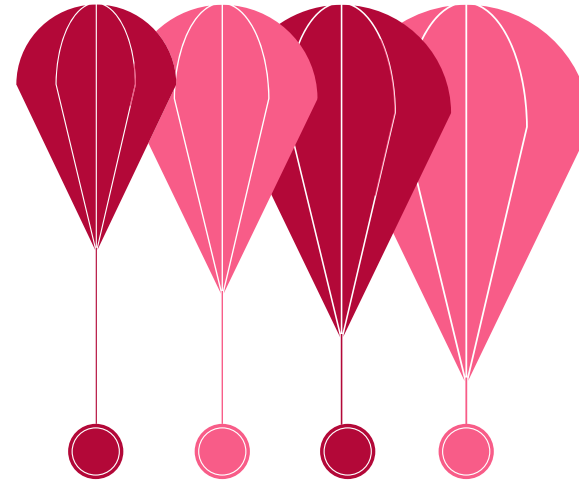


Latvia highlights the skills gap, while Croatia emphasises the competencies needed to overcome it.

"The gap is about thinking, not tools."

Across all findings, recommendations, and country contexts, one message emerges clearly and consistently: the digital skills gap is not fundamentally about which tools graduates can or cannot use. It is about whether they can think critically, interpret data meaningfully, and adapt continuously to an evolving digital environment.

-  **Critical Thinking**
Analyze and question information
-  **Data Interpretation**
Make sense of data
-  **Adaptability**
Learn continuously
-  **Problem Solving**
Apply skills to issues



Latvia

The priority is developing transferable competencies — skills that travel across tools, systems, and roles — rather than training students on specific platforms that may already be outdated by graduation.

Croatia

The priority is building the critical evaluation skills needed to responsibly use AI outputs — ensuring graduates can question, verify, and appropriately apply AI-assisted information in professional decision-making.