CYANOTYPES



IMPLEMENTATION PATHWAYS

LEARNING ORGANISATIONS – HIGHER EDUCATION

CYANOTYPES IMPLEMENTATION PATHWAYS

INTRODUCTION: Different entry points into the same ecosystem

The CYANOTYPES Creative Agency Framework is designed to help people and organisations to address their skills needs, explore change, connect perspectives and develop their capacity to act. It does not prescribe one way of working. Different actors face different needs, questions, challenges and opportunities, and may therefore enter the CYANOTYPES ecosystem from different starting points.

To better address the variety of different up and re-skilling contexts and the diverse needs of the CCSI, CYANOTYPES provides six specific implementation pathways:

1. **Creative Professionals & Individuals**
2. **Creative Organisations & Businesses**
3. **Creative Sectors & Networks**
4. **Learning Organisations — Higher Education**
5. **Learning Organisations — Vocational Education (VET)**
6. **Policymakers**

The six pathways correspond to five CYANOTYPES perspectives: Higher Education and Vocational Education and Training (VET) are two distinct entry points within the single Learning Organisations perspective. The pathways therefore expand the five perspectives into six practical routes without introducing an additional perspective or changing the underlying framework.

These pathways are not six independent strategies, nor a fixed sequence; they are interconnected entry points that lead the different actors to the same, wider, ecosystem. Individuals may begin with their own **learning and development**; an organisation may start with workforce or **organisational change**; a learning organisation may focus on **changing their curriculum** or **revising teaching methods**; a sector network may focus on **collaboration and skills intelligence**; and a policymaker may begin with **the conditions that enable learning and**

innovation. These starting points can connect with each other and will likely develop further over time.

The pathways translate the CYANOTYPES policy recommendations and the experience of the pilots into **possible routes for action**. They help users move from a real situation or question towards exploration, experimentation and learning. They can be adapted to different professional, organisational, regional and policy contexts rather than followed as fixed implementation plans.

A shared way of working

No matter what your context is, start with a real situation. Explore what is actually needed. Make competences, assumptions and existing strengths more visible. Choose an area for exploration or experimentation, develop or adapt a response, and then reflect on what has been learned, before deciding what should happen next.

This process also creates space to question the starting point. A challenge that appears to require new skills may instead reveal an organisational barrier, an existing but unrecognised competence, or a different way of understanding the situation. CYANOTYPES therefore encourages users not only to ask "What do we need to do?", but also "**Are we asking the right question?**" and "**What is the assumption here?**" This creates space to reconsider the problem, the approach and the conditions around it before deciding what needs to change.

CYANOTYPES is therefore **not a fixed solution, but a structured framework for reflection and informed experimentation**. Its pathways provide direction, while the context, experience and learning of the people involved determine what happens next.

Terminology: skills and competences

The pathways use the terms *skills* and *competences* in related but distinct ways.[1]

Skills are abilities to apply knowledge and know-how to carry out tasks, processes or activities and achieve results. They may be cognitive or practical and are generally described in relation to a particular task, activity or context.

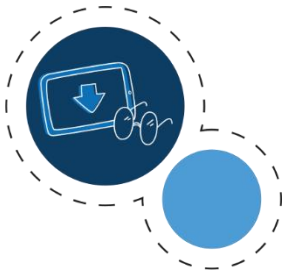
Competences refer to a broader combination of knowledge, skills and attitudes appropriate to a context, including the ability to apply learning across different situations. Within CYANOTYPES, the term refers specifically to the 25 transversal competences defined in the Creative Agency Competence Framework.

[1] CYANOTYPES: Skills vs. Competence, https://cyanotypes.website/2024/07/30/skills-vs-competences/

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PATHWAY for Higher Education



Purpose and orientation

This pathway is designed for individuals working in higher education, particularly those involved in shaping educational strategy, curriculum development, learner professional and career development, quality enhancement, staff development, research, innovation, or institutional partnerships. It provides a strategic route for exploring how CYANOTYPES can contribute to higher education transformation and enhancement.

The CYANOTYPES Framework can help make competences, existing strengths, assumptions, and less visible organisational conditions more explicit, providing a basis for informed experimentation and decision-making.

Higher education institutions operate within different national, institutional and regulatory contexts. Their autonomy, resources, governance arrangements and quality-assurance requirements vary. CYANOTYPES should therefore be used to distinguish what can be explored or changed locally, what requires institutional or external approval, and what may be tested through lower-risk forms of experimentation.

The pathway can be used at different levels, from a course or programme to an institutional strategy, and by various stakeholders, including institutional leaders, academic and professional staff, educational developers, and quality-assurance teams.

The aim is not to implement CYANOTYPES everywhere, but to **help institutions make better-informed decisions** about what needs attention, what is already working, what may be overlooked, and what kind of change is worth pursuing.

1. Higher education at a strategic crossroads

Higher education is facing profound structural transformation. Universities are increasingly expected to respond simultaneously to accelerating technological change, ecological transition, geopolitical uncertainty, demographic shifts, new forms of work, and rapidly evolving knowledge systems. Alongside their traditional missions of education and research, higher education institutions are increasingly expected to contribute to innovation, regional development, lifelong learning, democratic resilience and societal transformation[2].

Across Europe, these ambitions are reflected in a growing number of policy initiatives. The Competitiveness Compass and the Union of Skills frame competitiveness and skills priorities, while the European Education Area, the European Research Area and UNESCO's roadmap for transforming higher education emphasise interdisciplinary learning, stronger links between education and innovation, lifelong learning, international collaboration and the responsible integration of artificial intelligence.[3]

Higher education institutions are already responding to these changes in different ways. The question is therefore not simply whether transformation is needed. **The challenge is understanding how institutions can transform themselves in practice and what enables them to respond to constantly changing realities.**

For decades, reforms have largely concentrated on governance structures, funding models, organisational restructuring, quality assurance systems and curriculum renewal. These remain essential, but experience increasingly shows that structural reform alone does not generate institutional transformation. Institutions evolve because people develop new ways of working, collaborating, leading, teaching and responding to complexity.

Transformation therefore depends not only on institutional design, but on institutional capability. The challenge is to understand how existing systems can respond to changing

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[2] UNESCO Institute for Lifelong Learning (2022), Policy brief: The contribution of higher education institutions to lifelong learning, presented to the UNESCO World Higher Education Conference (WHEC2022).

[3] EU Competitiveness Compass, the Pact for Skills and the Union of Skills. UNESCO (2024), *Roadmap for the Transformation of Higher Education*; European Commission, *Competitiveness Compass*; *Union of Skills*; European Education Area; European Research Area. UNESCO (2026), *Transforming higher education: global collaboration on visioning and action*.

realities, and where relevant competences are already being developed but remain implicit, fragmented or difficult to recognise.

This is where CYANOTYPES can provide an additional perspective.

The Framework can be used as a practical lens for exploring emerging competence needs, making existing competences more visible and **connecting questions that may otherwise be considered separately**: curriculum development, research, professional transition, digital and AI transformation, lifelong learning, organisational development and collaboration with the Cultural and Creative Sectors and Industries.

The purpose is therefore not to replace existing learning outcomes, qualifications or quality assurance approaches. It is to help institutions **ask better questions** about what needs to be learned, where and how it is already being learned, what may be missing or invisible, and what conditions enable people to use their competences effectively.

2. What needs to change

Europe's current policy agenda emphasises competitiveness, innovation, digital transformation, STEM education and foundational skills for European resilience. These priorities are essential. However, they are unlikely on their own to generate the adaptive capacity required for long-term European sustainability and effectiveness.

Recent work by the World Economic Forum[4] highlights that future competitiveness increasingly depends on organisations' ability to combine technological innovation with human capability, organisational learning, interdisciplinary collaboration and responsible AI adoption. The analysis therefore highlights the importance of workforce adaptability, organisational capability and human–AI collaboration alongside technological adoption.

The original meaning of the word competitiveness, kindly revived by the project PACESETTERS[5] and quoted by the European Commission Vice-President Teresa Ribera, from the Latin word *competere,* is "to strive together" or "to seek together", which is the root of many words from competence to competition. Such an understanding of competitiveness opens tremendous opportunities for realistic and sustainable strategies on funding and investments in the CCSI and higher education.

Knowledge alone is no longer sufficient. The value of knowledge increasingly depends on the ability to interpret complexity, collaborate across disciplines, navigate uncertainty, question whether and how artificial intelligence can be used responsibly, engage with society, and sustain the human capacity for artistic and creative expression.

These are not purely technical capabilities. **They are forms of human and organisational agency.**

This shifts the question for higher education from what knowledge should be transmitted to **what kinds of learning and agency people need** in order to use knowledge, technology and creativity responsibly in changing circumstances.

For Higher Arts Education (HAE) institutions, this transition presents both a responsibility and an opportunity. HAE institutions are themselves highly diverse in size, governance, funding models, disciplinary scope and modes of delivery. They range from highly specialised,

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[4] World Economic Forum, *Four Futures for Jobs in the New Economy: AI and Talent in 2030* (2026), highlighting that competitiveness increasingly depends on workforce adaptability, organisational capability and human–AI collaboration rather than technological adoption alone.
[5] Teresa Ribera, Executive Vice-President of the European Commission for a Clean, Just and Competitive Transition at the *PACESETTERS Summit* on the topic *Competence and Competitiveness* (https://pacesetters.eu/summit/program/14/12).

practice-based and one-to-one forms of education to larger institutions and networks using blended, online and technologically enabled learning.

What connects them is not a single institutional model, but their position at the intersection of higher education and the Cultural and Creative Sectors and Industries (CCSI), and their long experience of learning through practice, experimentation, reflection and collaboration. Artistic research, project-based learning, critical inquiry, interdisciplinary work and engagement with external communities already provide valuable experience of forms of learning and agency that are becoming increasingly important across higher education and society.

As artificial intelligence and other technologies increasingly perform tasks once associated with human expertise, the value of higher education cannot be reduced to the transmission of knowledge or the acquisition of technical skills. Higher Arts Education has a particular contribution to make in nurturing critical thinking, creative competences, judgement, ethical reflection and the capacity to engage with ambiguity, imagination and human experience. These are not alternatives to scientific or technological knowledge. They are part of what enables people and societies to use knowledge and technology purposefully, critically and responsibly.

Rather than simply adapting to external transformation, HAE institutions are therefore well positioned to contribute to understanding what future-oriented higher education can look like in practice. This does not mean that higher education needs another layer of competences added to existing programmes. Higher education already has established approaches for defining learning, designing curricula and qualifications, and assuring and recognising educational quality. The challenge is rather to understand how these existing systems can respond to changing realities, and where relevant competences are already being developed but remain implicit, fragmented or difficult to recognise.

3. The CYANOTYPES contribution

The CYANOTYPES pilots suggest that the starting point for higher education should not necessarily be a perceived competence gap. An institution may begin with a more immediate concern: students having difficulty articulating the value of their work; AI changing creative practice; graduates needing stronger support during transition into professional life; sustainability becoming more important; research needing to demonstrate wider impact; or interdisciplinary collaboration becoming increasingly necessary.

The first task is therefore to understand the educational tension behind the issue. A useful question is not simply: **Which competences are missing?** but also: **What is making this situation difficult, and what competences, learning practices or organisational conditions might be involved?**

This distinction matters because the pilots showed that the problem initially identified is not always the problem that ultimately needs attention. Competence-based reflection can reveal that a competence already exists but is not named or recognised; that learning is taking place outside the formal curriculum; that different parts of an institution are working towards similar goals without connecting; or that an organisational condition is limiting the effectiveness of an otherwise appropriate educational approach.

CYANOTYPES can therefore be used as a **reflective and diagnostic lens before it is used as a design tool**.

This is also why the Framework should not be treated as a checklist. Institutions do not need to address all CYANOTYPES competences, nor should they automatically redesign programmes around them. The relevant question is which competences and dimensions help make the particular educational or institutional challenge more visible.

Competence development therefore became more than an educational objective. It also helps make wider institutional conditions and capabilities visible.

The CYANOTYPES Creative Agency Competence Framework provides a shared language for understanding these capabilities across multiple levels of the ecosystem. Rather than reducing competences to employability skills, it identifies complementary forms of agency that enable learners, educators, institutions and ecosystems to respond constructively to technological, cultural and societal change.

Equally important, the project demonstrated that competence frameworks can function as practical implementation infrastructures. They help institutions identify where transformation becomes difficult, reveal organisational blind spots and connect policy ambition with everyday educational practice. This distinction is significant.

Europe already possesses numerous policy recommendations calling for more interdisciplinary education, stronger university-business collaboration, lifelong learning, digital transformation and sustainability. **What is often missing are practical methodologies that help institutions translate these ambitions into coherent organisational change.**

The experience of the CYANOTYPES pilots suggests that competence-based approaches can provide a practical implementation layer between policy ambition and everyday educational practice. They can help institutions identify where transformation becomes difficult, make organisational blind spots more visible and connect questions that might otherwise remain separate.

A framework can therefore be useful not only for identifying what should be developed, but for revealing that the original problem was incomplete or differently understood. It can make visible competences that are already present but not recognised, learning that is happening outside formal structures, organisational conditions that limit otherwise promising initiatives, or assumptions that shape how a problem is framed.

In this sense, CYANOTYPES can help institutions explore **problems they do not yet know they have**.

4. Resources for exploration and implementation

The CYANOTYPES ecosystem brings together a set of complementary resources that can be used according to the question, context and level of intervention.

The Creative Agency Competence Framework provides the common language for exploring competences and forms of agency. The **Self-Assessment Suite**, the CYANOTYPES Blueprinter, **Canvas-Based Tools** and **Card-Based Tools** provide different ways of exploring situations, making competences and assumptions more visible, and supporting reflection and dialogue.

Where the focus is on learning design and delivery, the Train-the-Trainer Toolkit, **Learning Plans** and **Lessons** provide practical resources for developing and supporting learning activities. The **Universal Inclusivity Guidelines** can support attention to accessibility and inclusion, while the Matchmaking Platform can help connect relevant people and organisations across the ecosystem.

The Pilot Showcase provides examples of how organisations and institutions have explored the Framework in different contexts. These cases are not intended as models to reproduce. They provide evidence of different starting points, questions, contexts and lessons that may help another entity to formulate its own approach.

The ecosystem can therefore be approached selectively. An institution may begin with the Framework to explore a strategic question, with a self-assessment to understand an existing situation, with a Blueprinter or other tool to structure an intervention, with the Train-the-Trainer resources to support educators, or with the pilots to understand how others have approached comparable questions.

The purpose is not to use every resource. It is to find the resource that helps answer the question currently being explored.

5. Towards competence infrastructures

Supporting change in higher education requires stronger connections between competence development, curriculum, governance, professional development, quality assurance, research, artistic practice and organisational learning. Together, these elements can form part of a wider competence infrastructure within the institution.

Here, *competence infrastructure* refers to the connected practices, relationships and decision-making processes through which relevant competences are identified, developed, supported, recognised and learned from. It does not require a new organisational structure or reporting system. Its configuration will depend on each institution and its context.

Competence development should inform the institutional strategy rather than remain solely a curriculum concern. It should progressively reinforce a shared understanding of future capabilities, with implications for recognition and quality assurance.

When innovative educational approaches prove valuable, institutions should consider how to integrate them into existing quality assurance, accreditation and recognition processes rather than leave them as isolated experiments.

At the European level, greater alignment among accreditation systems, the European Standards and Guidelines for Quality Assurance (ESG), the European Qualifications Framework (EQF), micro-credentials and recognition of prior learning can help educational innovation become academically robust, internationally portable and accessible throughout increasingly flexible learning pathways.

Higher education institutions cannot develop these capabilities in isolation.

The challenges they seek to address increasingly extend beyond institutional boundaries. Effective competence development depends upon sustained collaboration with the Cultural and Creative Sectors and Industries, vocational education and training providers, research organisations, policymakers, intermediary organisations, regional innovation ecosystems and civil society.

Learning increasingly takes place across institutional and sectoral boundaries.

The following are possible entry points, not institutional requirements. An institution may begin with one, combine several, or move between them as its understanding of the issue develops.

Institutional entry point	What might be explored	Possible actions	Who might be involved
Leadership & Governance	How institutional priorities translate into educational and organisational practice; where capability may be constrained or overlooked	Use CYANOTYPES as a reflection lens in strategic planning; convene cross-faculty or cross-function exploration; connect evidence from pilots and educational initiatives to institutional decision-making	Rectors, Deans, strategic planning teams, educational leadership, students and learners.
Curriculum, Learning & QA	Whether existing curricula and learning environments support emerging capabilities	Explore existing learning through selected CYANOTYPES competences; review learning activities and assessment; consider how insights may inform learning outcomes and curriculum development	Programme leaders, academic staff, educational developers, QA teams, students and learners.
Staff & Institutional Capability	What educators and professional staff need in order to support new forms of learning and collaboration	Use Train-the-Trainer resources; develop peer learning; experiment with interdisciplinary or challenge-driven teaching; reflect on organisational conditions for adoption	Academic staff, educational developers, professional services, staff-development teams, students and learners.
Research, Artistic Practice & Professional Futures	How research, artistic practice and changing professional realities can inform learning	Connect doctoral development, practice-based research, alumni and professional engagement with curriculum and learning; use external partners as sources of feedback	Researchers, doctoral schools, programme teams, alumni and professional partners, students and learners.
Ecosystem & CCSI Partnerships	How the institution can respond to and learn from changing professional and societal contexts	Develop sustained relationships with CCSI organisations, networks, public authorities and other learning organisations; explore co-created learning and lifelong-learning opportunities	Knowledge-transfer teams, programme leaders, CCSI partners, regional actors, students and learners.

6. A practical implementation route

The following route is intended as a starting blueprint rather than a prescribed adoption model. An institution can enter at different points depending on its context, responsibilities and available resources.

Step 1 — Select the level of intervention

Decide where the question is currently located.

It may concern:

- an individual course or learning activity;
- a programme or curriculum;
- a faculty or school;
- doctoral development;
- student and graduate transition;
- continuing and lifelong learning;
- research or artistic research;
- an institutional strategy or educational vision.

Different starting points require different forms of engagement. A course-level initiative may focus on assignments, feedback or learning activities, while an institutional initiative may examine curriculum principles, graduate attributes, staff development or strategic priorities.

The important point is to begin at the level where the tension is actually experienced rather than assuming that every question requires institution-wide change.

Step 2 — Clarify the educational tension

Start from a real situation.

Examples include:

- students or graduates finding it difficult to articulate the value of their creative practice;

- new technologies or AI changing established forms of creative work;
- interdisciplinary projects requiring forms of collaboration that existing curricula do not explicitly support;
- sustainability becoming increasingly relevant to professional practice;
- doctoral researchers needing to work across disciplinary or professional boundaries;
- research and artistic practice generating value that is difficult to communicate beyond the institution;
- graduates moving between employment, freelance practice, entrepreneurship, further study and other forms of professional activity.

The aim is not to define the solution at this stage. It is to make the question sufficiently clear to investigate.

Step 3 — Map existing learning and competences

Before adding anything, look at what is already happening.

Examine assignments, studio work, internships, critique sessions, collaborative projects, research activities, public engagement, digital production, reflective practice and other learning environments.

Ask:

- Which relevant competences are already being developed?
- Where are they explicit and where are they implicit?
- How do students recognise and describe them?
- How do educators recognise them?
- Where do different learning activities reinforce one another?
- Where are there gaps, discontinuities or assumptions?
- Are organisational conditions helping or constraining the intended learning?

CYANOTYPES can provide a shared language for this exploration. Existing institutional learning outcomes and qualification structures remain important reference points for articulating and recognising learning.

The aim is therefore not to replace existing terminology, but to use CYANOTYPES to help **see relationships and possibilities that may otherwise remain difficult to articulate**.

Step 4 — Co-design a focused intervention

Once the situation is better understood, select a limited area for experimentation.

Possible interventions include:

- a masterclass or short learning activity;
- a redesign of an existing assignment;
- an interdisciplinary project;
- a doctoral development workshop;
- an AI or digital experimentation lab;
- an alumni or professional-learning initiative;
- a portfolio or reflection activity;
- an impact-narrative exercise;
- a curriculum-mapping exercise;
- a new collaboration with an external creative-sector partner.

The intervention should respond to what the previous steps have revealed. CYANOTYPES is therefore explored as part of the process, rather than introduced as a predetermined solution.

Step 5 — Build reflection and evidence into the process

The value of an intervention is not only whether it produces the expected immediate result.

Collect evidence of what the process reveals. This may include student reflections, staff observations, portfolio outputs, partner feedback, changes in learning activities, or revised formulations of intended learning.

The evidence should remain proportionate. The purpose is to support institutional learning, not to create another reporting requirement.

Evidence can be considered at two levels: what changes for learners and learning, and what the institution learns about its own capacity to respond. Depending on the intervention, this might include changes in learner confidence or ability to articulate their learning, the quality of learning activities, staff practice, collaboration, curriculum development or subsequent institutional decisions.

Reflection should also return to the original question:

Did we understand the challenge correctly?

The process may confirm the initial assumption. It may also reveal that the original problem was different, that an existing strength was overlooked, or that the main barrier lies somewhere other than the curriculum.

This is an important part of the CYANOTYPES approach: experimentation is not only a way of testing a response; it is also a way of improving the understanding of the situation itself.

Step 6 — Decide what should happen next

Following the experiment, the institution can decide whether and how the learning should be used.

Depending on the evidence, the approach might be:

- embedded into an existing programme;
- adapted and tested again;
- extended to another context;
- incorporated into staff development;
- developed into an alumni or continuing-learning offer;
- connected to institutional strategy or policy;
- explored through a micro-credential or other recognition mechanism;
- or discontinued because it did not address the underlying need.

Where wider application is considered, testing the approach in a second context can help distinguish what is transferable from what depended on the conditions of the original pilot.

Embedding should therefore be a decision based on learning from the process, not an automatic consequence of having completed a pilot.

7. Quality assurance, learning outcomes and recognition

For higher education, competence development must connect with existing approaches to learning, qualifications, quality enhancement and recognition.

CYANOTYPES should therefore be understood as **complementary to established learning-outcomes-based approaches**, not as an alternative to them.

Learning outcomes remain important for expressing what learners are expected to know, understand and be able to do, and for supporting curriculum design, assessment and recognition. Qualification frameworks provide structures for describing progression and levels of achievement. Quality assurance systems provide mechanisms for ensuring that educational provision is coherent, transparent and continuously improved.

The added contribution of CYANOTYPES is earlier and broader in the process: it can help institutions explore **which capabilities matter in a changing context, how those competences are already being developed, where they may be implicit, and what educational or organisational conditions may need attention**.

Where an institution identifies a relevant CYANOTYPES competence, this can subsequently inform curriculum development and, where appropriate, the formulation or refinement of learning outcomes, learning activities and assessment approaches. The CYANOTYPES Framework should not be treated as an additional compliance layer.

This distinction is particularly important when considering accreditation, micro-credentials, or other forms of recognition. Such developments should remain aligned with the applicable institutional, national, and European quality assurance and qualification requirements. The aim should be to **connect competence-based exploration with these existing systems without creating an additional compliance layer.**

8. From curriculum development to institutional capability

The implications of this approach can extend beyond an individual programme.

If a curriculum experiment repeatedly reveals difficulties with interdisciplinary collaboration, for example, the issue may not be solvable through a new module alone. It may raise questions about timetabling, assessment, staff development, faculty structures, partnerships or institutional priorities.

Similarly, if an institution wants to strengthen AI-related learning, the challenge may concern not only what students learn but also educator development, institutional policy, research practice, intellectual property, assessment and relationships with creative-sector partners.

This is where competence development becomes an element of institutional learning: CYANOTYPES can help institutions connect questions that are often handled separately and use evidence from educational experimentation to inform wider organisational development. **This reflects the CYANOTYPES recommendations on organisational learning and institutional transformation, which connect future competences with governance, curriculum, human resources, research and educational vision.**

The objective is not to create a new institutional structure for every competence challenge. It is to make existing structures more capable of recognising and responding to change.

9. Research, artistic practice and professional futures

Higher education also provides an important bridge between learning, research and professional practice.

Creative and artistic research, practice-based research, interdisciplinary projects and engagement with external partners can create learning environments in which students and researchers encounter complex and open-ended questions. They can also help institutions understand emerging changes in professional practice.

CYANOTYPES can support reflection on the competences involved in these activities: not only disciplinary knowledge and technical expertise, but also critical reflection, collaboration, judgement, creative agency and the ability to work with uncertainty.

This is particularly relevant to doctoral development and research impact, which are explicitly identified in the CYANOTYPES recommendations as areas where the Higher Education lens can contribute.

The same logic applies to graduate transition and lifelong learning. Creative careers are often non-linear, and people move between education, freelance work, project employment, entrepreneurship, artistic practice, research, teaching and other forms of activity. Higher education can therefore contribute to a wider learning ecosystem before, during and after graduation rather than treating learning as something completed at the point of qualification.

10. Digital and AI transformation

AI and digital transformation provide a particularly relevant area for this approach.

Higher education institutions need to address technical developments, but future-oriented digital learning cannot be reduced to learning how to operate new tools.

The CYANOTYPES policy recommendations call for digital and AI literacy that protects creative agency. For higher education, this means combining practical experimentation with ethical reflection, self-determination and critical awareness, including questions of authorship, values, collaboration, professional identity and decision-making.

CYANOTYPES can help institutions investigate which capabilities are becoming important in these changing environments and whether existing learning practices already address them.

Again, the point is not to assume that every institution needs the same AI curriculum. The relevant question is what the particular educational and professional context requires.

11. Working beyond the institution

Higher education institutions cannot develop future capability in isolation.

Creative-sector organisations, businesses, professional networks, public authorities, communities, research partners and other learning organisations can provide perspectives on how competences are used beyond formal education.

Longer-term relationships can also create feedback loops between professional practice and curriculum development. This helps institutions avoid designing future-oriented education only from within the institution and creates opportunities for learners to encounter the complexity of real professional contexts.

Higher education can therefore function as a connecting point within the wider CYANOTYPES ecosystem, while remaining one entry point among several.

12. Strategic directions

For higher education institutions, the CYANOTYPES recommendations can be explored through five connected directions:

1. Use competence frameworks as practical instruments for educational development

Use CYANOTYPES, its competence framework and tools to explore curriculum questions, institutional challenges and emerging capability needs. Start from existing practice and make implicit competences and assumptions more visible rather than automatically adding new curriculum content. This reflects the CYANOTYPES recommendation to treat competence frameworks as practical instruments for educational and organisational development.

2. Connect learning, research and professional futures

Strengthen links between curriculum development, artistic and practice-based research, doctoral development, graduate transition and lifelong learning. Use external professional realities as a source of feedback for educational development.

3. Develop human-centred digital and AI capability

Support learners and educators in experimenting with AI while developing critical judgement, ethical awareness, creative agency and the ability to make informed choices about when and how technologies should be used.

4. Strengthen institutional learning

Use evidence from curriculum experiments and other learning initiatives to inform educational strategy, staff development, research, partnerships and organisational development. Avoid turning competence development into a parallel administrative system.

5. Build stronger connections with the wider CCSI ecosystem

Develop sustained relationships with creative professionals, organisations, businesses, networks, public bodies and other learning organisations so that education can respond to changing professional realities and contribute knowledge and capability back into the ecosystem.

13. A practical first step

A higher education institution does not need to begin with an institution-wide transformation.

A useful starting point could be one programme team, its students and one live curriculum or educational question.

The team could:

1. identify the tension it wants to understand;
2. map an existing course or learning activity;
3. use selected CYANOTYPES competences to explore what is already visible and what may be implicit;
4. involve students, staff and, where useful, external partners;
5. test one focused change;
6. collect proportionate evidence;
7. reflect on whether the original problem was correctly understood; and
8. decide whether anything should be embedded, adapted, extended or discontinued.

From this starting point, the institution can decide whether the learning has implications beyond the original programme.

The aim is not to use CYANOTYPES everywhere. It is to make better-informed decisions about where future capability needs attention, how existing learning already contributes, and what kind of change is actually worth pursuing.

14. Examples from the CYANOTYPES Pilots

The CYANOTYPES pilots provide practical evidence of how the Framework can be used in different higher education contexts. Their value is not that they provide models to reproduce, but that they show different ways of starting from a real educational or institutional question and using competence-based exploration to understand and test possible responses.

The examples below illustrate three areas that may be particularly relevant to higher education institutions: curriculum and institutional development; lifelong learning, transition and doctoral development; and human-centred digital and AI literacy.

More examples can be found on the CYANOTYPES Pilot showcase.

Curriculum and institutional development

The HKU Arts and Economy Masterclasses, Royal Conservatoire of Antwerp Education Policy and **HKU Education Vision** pilots demonstrate how competence frameworks can support curriculum development and institutional reflection. Together with the Lusófona Skills Matchmaking Platform and HBKsaar Generative Arts and Design Lab, they illustrate the potential of CYANOTYPES as an operational tool rather than simply a descriptive framework. The focus is on connecting competence development with curriculum, institutional strategy, learning outcomes and emerging professional realities.

Lifelong learning, transition and doctoral development

The Finding and Taking Chances, Angewandte Summer School for Young Creatives, Swedish Games Industry Narrative Design, HKU Arts and Economy Masterclasses and Angewandte Doctoral Development pilots demonstrate different ways higher education can contribute to learning throughout the creative career lifecycle. These examples extend the role of higher education beyond initial degree provision towards transition, continuing professional development and doctoral development.

Human-centred digital and AI literacy

The HBKsaar Generative Arts and Design Lab, Angewandte Digital Content Co-Creation, **Accademia Teatro alla Scala**, Exploring Value Creation and geniaLAB pilots illustrate approaches to digital and AI-related learning that go beyond technical skills. They support the

development of critical, creative and ethical engagement with emerging technologies, to protect and strengthen creative agency.

What these pilots show

Taken together, these pilots demonstrate that there is no single way for higher education institutions to engage with CYANOTYPES. An institution can start with a curriculum question, institutional strategy, lifelong learning, doctoral development, professional transition or digital transformation.

The common thread is not the adoption of a particular model. It is the use of CYANOTYPES to translate practice into future competences, identify what is already present or under-supported, test a focused response, make learning visible and reflect before deciding what should be embedded, adapted or extended.

15. Looking ahead

The future role of higher education is not simply to prepare graduates for changing labour markets.

It is to strengthen society's capacity to understand complexity, anticipate change and create public value.

Institutions that embrace this role become more than centres of knowledge production. They become stewards of Europe's future capability—places where education, research, artistic practice, innovation and societal engagement reinforce one another, and where lifelong learning becomes a defining characteristic of higher education itself.

Higher Arts Education Institutions occupy a particularly strategic position within this transition. By operating simultaneously within higher education and the Cultural and Creative Sectors and Industries, they demonstrate how creative practice, artistic research and interdisciplinary collaboration can contribute not only to cultural development but also to Europe's wider innovation capacity.

The distinctive contribution of CYANOTYPES lies precisely here.

Rather than proposing another set of policy ambitions, the project offers evidence from pilots across Europe that competence frameworks can function as practical infrastructures for institutional transformation. They provide a shared language for identifying hidden implementation challenges, developing organisational capability and connecting educational innovation with long-term strategic change.

Europe's future competitiveness will not depend solely on excellence in STEM disciplines, technological adoption or scientific discovery. It will equally depend on institutions capable of cultivating creativity, critical judgement, ethical reasoning, interdisciplinary collaboration, systems thinking and the ability to translate knowledge into societal, cultural and economic value.

Developing these competence infrastructures should therefore be understood not as an additional educational agenda, but as a strategic investment in Europe's capacity to innovate, adapt and lead in an increasingly complex world.

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