NVAO • FLANDERS

System-wide analysis
FUTURE-PROOF CURRICULA

Stepping stones for future-proof higher education

11 OCTOBER 2024

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Contents

1 Introduction

1.1 The framework: system-wide analysis 2023-2024

In the higher education quality assurance system of Flanders, system-wide analyses map out good practices in terms of themes relating to educational policy and programme quality: good practices that surpass generic quality and that are innovative for Flanders. This affords higher education institutions the room to learn from one another.

The calendar for the system-wide analyses has been set down within the NVAO stakeholder group. Together with representatives of the Flemish Interuniversity Council, the Council of Flemish University Colleges, the National Union of Students in Flanders (VVS), the Cabinet of the Minister and the Ministry of Education, the Accreditation Organisation of the Netherlands & Flanders (NVAO) opted for the theme of "**curriculum development and future-proof curricula**" for the academic year 2023-2024.

The theme was defined as follows: "**adaptably and flexibly tying in with developments in the labour market and in society, curriculum models, structure of learning outcomes, use of instructional formats and student assessment formats, and practical organisation of education (e.g. academic calendar)**".

During the academic year 2023-2024, a working group consisting of representatives of the participating institutions substantiated this system-wide analysis. The **nine participating higher education institutions** are AP University of Applied Sciences and Arts Antwerp, HOGENT, KdG University of Applied Sciences & Arts, KU Leuven, LUCA School of Arts, Odisee, University of Antwerp, Ghent University and Vrije Universiteit Brussel. The majority of representatives of these institutions are **central education developers and policy staff.** Some are **educational experts active in faculties and programmes, or teaching staff**. Furthermore, programme stakeholders were actively invited to support the sharing of good practices. Two NVAO process supervisors coordinated and facilitated the process.

1.2 The process: knowledge sharing and deepening via interactive methodology

The system-wide analysis commenced with the drafting of an exploratory memorandum. In this memorandum, NVAO compiled insights from literature and from the applications submitted by the participating institutions. The document presented leads for further analysis, for knowledge sharing and for the further development of existing good practices.

The working group devoted the first semester of this academic year to perusing the good practices submitted by all the participants.
To ensure in-depth knowledge sharing during the live meetings, the working group pursued an **interactive methodology**. Each participating institution submitted one or more good practices in the form of a "portrait", including the sources used. The working group studied each portrait – prior to the plenary session – and formulated what were termed "inquisitive questions". The institution submitting the practice ensured that these questions were answered when they presented their case to the working group. Beforehand, the institution itself also formulated several questions to which it aimed to find answers in a dialogue with the other participants.

> *"The working group's point of departure was: 'knowledge starts to flow once there is a demand', and this worked both ways."* *(quote from the system-wide analysis session)*

These thorough preparations ensured that during the live meetings, particular attention could be focused on the **working elements** in each good practice, as in the opinion of the working group, collectively looking for success factors deepens the available knowledge. Reflecting on insights acquired is challenging and ensures that said insights will be embedded more firmly. One of the concrete results of the presentation was an overview of **critical success factors per good practice**.

For the entire semester, the working group thus substantiated exchange, resulting in mutual inspiration, deepening of success factors and setting down reflections and insights.
Afterwards, based on the insights acquired and the formulation of additional learning requirements, an international peer-to-peer event was organised. Plenary sessions, presented by international experts, were followed by roundtable discussions.

The following speakers successively took the floor:

- Karen Triquet (VUB, EUTOPIA) on the EUTOPIA educational model: *Future-proofing Curricula through Connected Communities*;
- Niels Van der Baan (Maastricht University) on the development of employability competences in higher education, featuring coaching as a good practice;
- Linda de Greef (University of Amsterdam) on *Inter-disciplinarity and Transdisciplinarity for Future-proof Education* and the *Transition Makers Toolbox*, based on the *Inner Development Goals (IDG)* framework

- Rik Vangangelt (Utrecht University) on the operation of the *Centre for Academic Teaching and Learning*, focusing particular attention on educational innovation, staff development and educational scholarship.

During the roundtable discussions, the working group participants entered into a demand-driven dialogue with the experts, by referring to their own good practices. This reflection enabled each institution to once more deepen its own good practice.

In the second semester of this academic year, the working group continued to compile the insights acquired. The members looked for **common critical success factors** and formulated ***key takeaways*** as important "wise lessons" overarching the various good practices.
In addition, they worked on the design of this **publication** and an **announcement event.** This magazine is intended for anyone interested in future-proof educational development in higher education. The working group aimed to find a structure that best reflects the initial cases (the "portraits") and the insights acquired. The contributions of the international peers have also been included in this magazine.

1.3 Guide to reading this magazine

The publication comprises the following components:

- **Why** a future-proof curriculum?
- **How** can you design a future-proof curriculum?
- **Basic conditions and prerequisites** for designing a future-proof curriculum
- **Practical examples** of the participating institutions and the international peers
- **Looking back and looking ahead**

Readers are free to **choose how to navigate** this magazine. Everyone can read according to their interests. For example, you may choose to go through the magazine in chronological order, but you may also opt to first go over the practical examples (*Chapter 5 "Practical examples"*); subsequently, you will recognise certain aspects of the examples in the various phases of the ADDIE model (*Chapter 3 "How to design a future-proof curriculum"*).

2 Why a future-proof curriculum?

2.1 The urgency of future-proof curricula

With **future-proof curricula**, the higher education sector aims to ensure that students acquire valuable knowledge and skills that will continue to be of value in the future. For both universities of applied sciences and research universities, this is an increasingly urgent issue, as their curricula need to enable them to pro-actively and flexibly tie in with the growing diversity in student populations (for example, in terms of requirements and backgrounds), with rapid evolutions on the labour market (i.e. the professions and type of organisations for which the students are being trained) and with successive changes in wider society as a whole (for example, developments in the fields of technology and sustainability). Therefore, **future-proof curriculum development** entails a search for options for curricula to quickly, adaptably and flexibly respond to new evolutions and to remain relevant and effective over a longer period of time.

All this calls for sustainable futures thinking. What will be of importance in the distant and uncertain future? How can futures thinking be shaped in a manner that will generate a proper assessment of what new generations will need? It also calls for dynamic design and adaptability, taking account of contextual factors. Concurrently, the principles of *constructive alignment*, involving seamless alignment of the primary competences, the learning and teaching activities and the evaluations, will also remain important.

Thus, future-proof curriculum development is urgent and complex. It requires a great deal of expertise, flexibility and adaptability on the part of all those involved. Institutions clearly aim to learn from one another in this respect, which was also demonstrated by the large number of applications for this system-wide analysis.

2.2 Common elements in the exchange

The applications clearly showed that all the participating institutions, each in their own way, have already gained experience with the development of future-proof curricula. Over the past few years, the institutions have made funds available to this end, in many cases utilising the project subsidies provided by the *Voorsprongfonds* [Advancement Fund Education of the Future]. Within all the institutions and programmes involved, so much is clearly going on in this field that it would be impossible to cover everything in this system-wide analysis. However, the selected practical examples that the working group has shared and explored, each embedded in their own institutional and programme contexts, showed several common elements.

One of the common elements concerned the responsibility within the institutions to provide future-proof curricula. In the participating universities, realising the changes required to future-proof their curricula is clearly a **shared responsibility**. Thus, it touches upon the complex interaction between:

- **the central (institutional) level**, at which future-oriented (educational) visions, strategies and policies are substantiated; and
- **the decentral (faculty, department or programme) level**, at which concrete future-proof curriculum solutions are designed and implemented for the students (for example, via new learning pathways/subjects, adapting the structure of the academic year or problem-driven education).

The working group has shared a wide range of practices, in which decentral initiatives and central, institution-wide approaches always interact. The central-level and decentral-level design and definition of **roles and positions** in the field of curriculum development and educational support differ from one institution to the next.

With respect to **learning outcomes**, the practices shared demonstrate an emphasis on the acquisition of transversal competences, largely inspired by *21st century skills*. Many institutions have translated such competences into their own set of **generic competences**.

The system-wide analysis has also clearly demonstrated that in terms of content and organisation, the institutions are actively seeking a more **interdisciplinary approach to their curricula**, in order to have their education reflect the interrelation between up-to-date knowledge and complex societal issues.

The exchange revealed that many institutions are pursuing a **systematic, phased approach to curriculum development.** Future-proof curricula are substantiated on the basis of a **cycle** comprising several steps. The ADDIE model (involving the five steps of *Analysis*, *Design*, *Development*, *Implementation*, *Evaluation*) is an example of such a commonly pursued cycle. The working group has decided to structure the "How to design a future-proof curriculum" component of this publication in accordance with this model.

Participants emphasised the dynamic nature of such a cycle, in which the successive steps interact and are thus, in some cases, repeated to a certain extent. This is part of the dynamics that a future-proof design requires in the complex interaction of institutional

and programme levels. Yet the design steps/phases of such a model will always be useful as an instrument for reflection on the actual progress made.

Of note is the fact that many working group participants are looking for ways to enhance their own competences and those of managers in the field of **change management**, in order to garner more support for and increase the effectiveness of curriculum implementations. This involves staff development, promoting and retaining ownership among teaching staff and continued systematic involvement of students and external stakeholders in the changes. Many knowledge requirements put forward by the participants also concerned overall **progress monitoring** and **quality assurance**.

Finally, a concept that frequently came up during the exchanges was "breaking through the **institutional concrete**". The working group thus refers to the tension between variable requirements on the one hand and the at times rigid regulations of the institutions and authorities on the other (for example, academic calendars, examination regulations, legal requirements and frameworks) that could hinder a rapid and flexible curriculum design. Many expressed a particular desire to explore ways to achieve more dynamic interaction.

The working group focused less attention on some topics relating to future-proof curriculum development that were mentioned in the applications submitted by the institutions. Such topics pertained to, for example, ICT to improve learning and to keep pace with technological progress. Less attention was also paid to the range of curricula for future-proof lifelong learning (for example, via *micro credentials*).

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3 How to design a future-proof curriculum

3.1 About the structure of this chapter

The working group emphasises that designing a future-proof curriculum constitutes an **iterative** rather than a **linear process**, and that it is important to involve the appropriate **stakeholders** every step of the way.

Several curriculum development models can be found in the literature. For this component of the magazine, the working group has sought inspiration in the **ADDIE** (*Analysis*, *Design*, *Development*, *Implementation*, *Evaluation*) **model** for curriculum development. This model is not new, but the fact that quite a few higher education institutions are using these design steps (or variations thereof) proves its strength and ensures recognisability. It also resonates nicely with the wide interest in *Instructional Design for Learning* and lends itself to concretising the relationship with the development of a future-proof curriculum.

Although in literature the ADDIE model is usually elaborated at the micro level, the working group has employed this model for both the **institutional-level** and the **programme-level** development of future-proof curricula**.**

The main goal of this component of the magazine is to **inspire** and to **illustrate** future-proof curriculum development by reference to the successive steps in the ADDIE model. The "*Practical examples"* component, presented in Chapter 5, **outlines the full practice**. Readers are free to choose which component to go through first.

For each phase/design step of the ADDIE model, this component contains:

- **A brief explanation of the relevant phase**
  The working group has described the phase based on various sources.
- **Key takeaways**
- **Illustrations from the participating institutions**
  From the good practices submitted, the institutions selected one or more components that tie in with a particular phase of the ADDIE model. These illustrations may be situated at the institutional level or at the programme level.

The ADDIE model - sources:

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3.2 Analysis

3.2.1 Description

In the "Analysis" step, an institution or programme substantiates and identifies the reasons why change is necessary. It analyses the current situation and the situation as envisaged. It uses qualitative and quantitative data on the curriculum, collected among various stakeholders (students, teaching staff, alumni, the professional field, external peers and experts) as part of the quality assurance process. It identifies and specifies the driving forces for change. This ensures that the next steps in the ADDIE process can be completed efficiently and effectively.

3.2.2 Key takeaways

Decide on your team in the analysis phase.

- Ownership is vested with the programme; provide proper central supervision and embedding. Involve various perspectives in a structural/systematic manner: students, teachers, staff, alumni and the professional field. This ensures that both the thought process and the implementation are state-of-the-art, broadly sourced, widely supported and geared to the requirements and challenges which, at that time, are priorities for all those concerned. In short, you transcend your own views. In this respect, it is important to create an environment in which everyone has the opportunity and the room to think, speak and participate openly and out of the box.
- Also involve national and international partners; they can provide added value. International (structural) collaboration (such as within a European Alliance and existing partnerships among higher education institutions) and the integration of or inspiration provided by various international perspectives constitute added value.
- Foster shared ownership via well-considered methodologies: assume joint responsibility for good education by, for example, pursuing activating methodologies that allow everyone to provide input and have a say. This transcends the individual teacher and the individual programme component.
  If applicable: identify the various roles, including that of supporter, and specify the expectations of all those concerned.

Scan your curriculum.

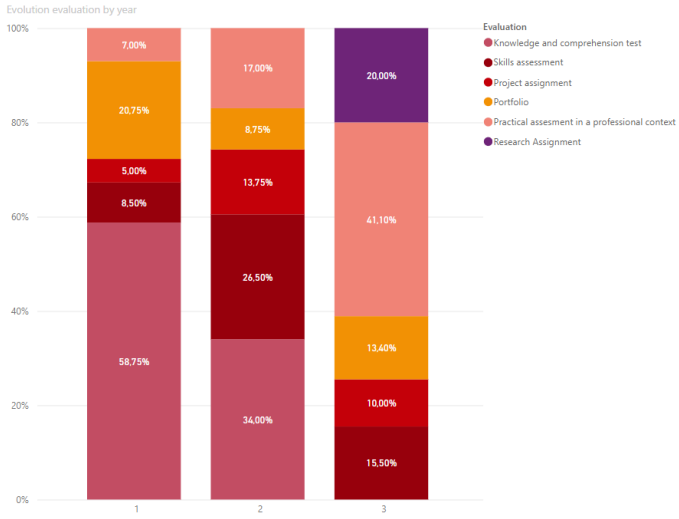
- Determine a focus for scanning the curriculum. Define points for improvement and ambitions.
- Adopt an in-depth, evidence-informed approach, featuring comparative data analysis.
- Utilise available instruments to conduct the scan, for example, quality assurance instruments and development instruments.

Create urgency.

- Perceived urgency is essential to garner support for change.
- Analyse the basic conditions and prerequisites, but do not let the "institutional concrete" hold you back from the onset. Map out the main basic conditions and prerequisites and get started. The terms "basic conditions" and "prerequisites" are defined in Chapter 4.
- During the roll-out, other basic conditions and prerequisites can be explored and adapted if necessary.

3.2.3 Illustration: AP University of Applied Sciences and Arts Antwerp

The **competence matrix** is a customised set of dashboards in the PowerBI program. The tool is intended to analyse curricula and can also be used to simulate changes in a curriculum. It allows programmes to consult the interrelationship of programme-specific learning outcomes (OLRs), attainment targets, instructional formats and student assessment formats per programme component and for the overall programme. This enables the programme to ensure that proper *constructive alignment* is achieved within the programme. The tool can be expanded to accommodate programme-specific requirements or university-wide projects.



Evolution in student assessment formats per year for analysis purposes

Some of the many possibilities:

- **Scanning:**
  In many cases, a curriculum is structured on the basis of a teaching concept featuring learning pathways. Via the competence matrix, these learning pathways can be mapped out throughout the curriculum. A convenient diagram enables the curriculum to be scanned for gaps in a learning pathway.
- **Adopting a helicopter perspective:**
  At AP UAS, programmes tag their attainment targets if they are geared to one of the four domains within the sustainability competences (intrapersonal thinking, critical & system thinking, interconnected collaboration and

sustainable action). Smart diagrams enable a programme to check the extent to which particular domains are targeted and within which programme components or years. This comprehensive perspective enables the programmes to change direction where necessary.

- **Measurable aims and objectives:**
  The competence matrix enables AP UAS to gauge university-wide policy. For example, in the near future, it will be possible to check per programme which programme components meet the Cross-pollination definition (see portrait in Chapter 5) and whether each student has gained interdisciplinary experience upon graduation.

See Chapter 5 for the full practical example, *The university-wide roll-out of the Cross-pollination within AP University of Applied Sciences and Arts Antwerp project*, including sources and contact details.

3.2.4 Illustration: HOGENT

The "Study and understand" step from the HOGENT UAS curriculum development toolkit supports programmes in gaining insight into all the elements that may impact the new curriculum. This insight constitutes the basis for making well-considered choices for the future. The toolkit offers design teams various methodologies to assist them with the subsequent aspects of the analysis phase:

Curriculum analysis: The toolkit provides programmes with methodologies for analysing the existing curriculum. For example, design teams are invited to award substantiated individual scores to specific themes in the current curriculum. The subsequent dialogue fosters a common understanding of and consensus about what is and is not effective.

Stakeholders' perspective: The toolkit helps design teams to review the curriculum from the perspective of stakeholders. This can be achieved by studying sources of information, but also by answering specific questions from the stakeholders' point of view. This affords teams insight into the various interests and expectations.

Context analysis: Context analysis can help set the course for the new curriculum. For that reason, the toolkit offers methodologies enabling design teams to consciously consider developments in society, education and the professional field.

See Chapter 5 for the full practical example, *Toolkit for learning outcome-oriented curriculum development within HOGENT*, including sources and contact details.

3.2.5 Illustration: KdG University of Applied Sciences & Arts

KdG University of Applied Sciences & Arts puts forward **four generic competences** as a springboard towards future-proof curricula for its programmes. The **KdG competences scan** is a tool to draw up an institution-wide state of the art and to inspire programmes to get to work on the KdG competences. The KdG competences are personal leadership, global competence, digital and technological literacy, and sustainability competence. Concurrently, the scan paints a concrete picture of the programme based on its vision, the learning outcomes, the programme curriculum, and teachers' attitude and teaching methods. Thus, KdG is substantiating the "A" of the ADDIE model at both the institutional level and the programme level.

In concrete terms, a **dialogue** takes place between the core programme team and policy staff. Based on specific questions, this dialogue gauges the current state of the art regarding several aspects of the KdG competences within the programme. Such specific questions may be: "Do you recognise the contents of the competences in the current programme-specific learning outcomes (OLRs)?", "In which learning outcomes is that?", "Can you state actual examples of aspects in which the competence is already being addressed?", "Do you recognise the literal wording of the competences in the current learning outcomes or do you instead recognise synonyms?". The aim is to achieve a common understanding of the competences.
Programmes **rank themselves** in terms of the various competences, indicating where they are seeking more inspiration and which of their practices may inspire others. This is followed by *matchmaking*: knowledge sharing between programmes in order to feed one another.

KdG competences result in future-proof curricula

See Chapter 5 for the full practical example, *KdG competences as stepping stones towards the future*, including sources and contact details.

3.3 Design

3.3.1 Description

In the "Design" step, an institution or programme uses the strengths and requirements identified in the "Analysis" phase to develop a vision for a future-proof curriculum. This vision encompasses the goal to be achieved by the change: it revolves around the intended programme aims and objectives. In addition, it may set out the educational concept, the programme profile, the learning assessment policy, the intended teaching-learning formats, the evaluation formats, the intended learning environment and the intended curriculum content. The "Design" step involves sketching the process and the timeframe within which the intended change will be implemented.

3.3.2 Key takeaways

Update your vision or design a new vision.

- Cut through the strategic five-year term. Challenge your programme to *really* embrace future-proof and long-term thinking.
- Future-proof means that the curriculum content must be open to rapid adjustment and that the programme must actively keep a finger on the pulse in order to be able to integrate societal and professional trends.

Ensure that conceptual transparency and flexible substantiation remain compatible and monitor the balance between central frameworks and autonomy.

- Take the institutional level into account and monitor the balance between *top-down* (vision-driven) and *bottom-up* (expertise, support-base), with autonomy versus commitment.
- Create a common base that bears translation to and builds on frameworks and methodologies at the faculty, department or programme levels.

Dare to think broadly.

- Integrate *futures-thinking skills* when designing your vision. Future-proof thinking is not only relevant for students within the framework of *21st century skills*, but also for teachers, programmes and policy at all levels. Think broadly in this respect: personal development, sustainability, creativity, critical thinking and interdisciplinarity are also important. Dare to experiment and to change; think outside your comfort zone.

3.3.3 Illustration: HOGENT

The HOGENT UAS **toolkit for curriculum development** helps programmes to design the following vision elements in a well-considered manner and to visualise them, e.g. in the form of text, figures or diagrams:

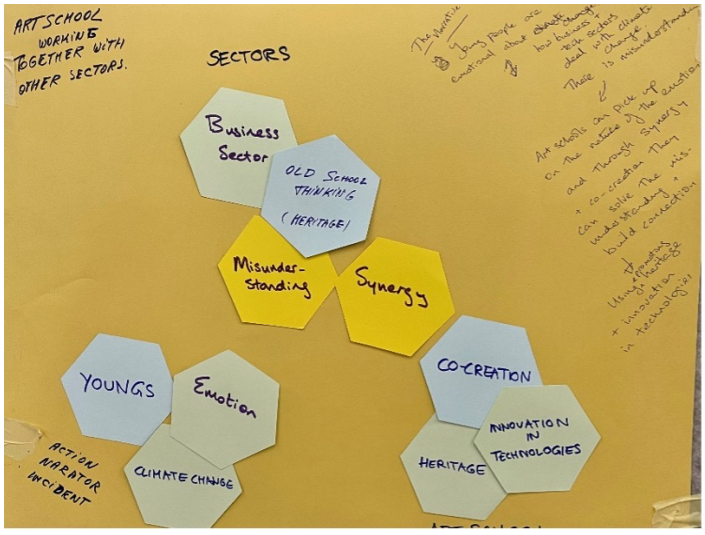
- **Programme vision and programme-specific learning outcomes:**
  In order to develop a broadly supported programme profile, the toolkit offers methodologies that encourage design teams to reflect on the characteristics of the future work environment for which it trains students and on the qualities that graduates must possess in order to enjoy future success. Targeted assignments and questions for debate help to get all the programme team members on the same page and to have the proposals resonate with graduates and representatives of the professional field.
- **Educational concept:**
  To draft an educational concept, the toolkit proposes methodologies that generate insight into interesting learning and teaching experiences and valuable educational innovations. The design teams are encouraged to think creatively and to substantiate their proposals with literature.

To support these design steps, info charts are available that explain the relevance and desirability of these vision elements. Furthermore, the toolkit comprises appropriate inspiration charts featuring concise descriptions of good design practices and actual results achieved by other programmes.

See Chapter 5 for the full practical example, ***Toolkit for learning outcome-oriented curriculum development within HOGENT***, including sources and contact details.

3.3.4 Illustration: LUCA School of Arts

When designing future-proof curricula, **"futures thinking"** can be inspiring. The future cannot be predicted, but the education sector can help to shape its own future via "Futures Studies". LUCA School of Arts has explored the possibilities of futures thinking through the *FAST45* Erasmus+ project. The key question of this project is: "In 2023, how do we relate to 2045 as a higher art school, and what do we need to do to prepare for this?".
Planning, monitoring, analysing and assessing policy initiatives requires more than shifting and adapting; it is imperative for everyone to be able to participate in shaping the future. Artistic practices constitute an excellent instrument to this end. The project team is developing an *online learning platform* featuring interviews, knowledge clips, seminar recordings, literature referrals, infographics, guidelines and methods for futures studies. This knowledge base provides art schools with tools for futures thinking. The project is creating **Future Art School Labs** in which stakeholders discuss and document such thinking. These building blocks constitute the basis for four **Art School Futures Scenarios** (*Open Spaces*, *Slow Eco Life*, *Phygital Frontiers*, *Profitable Endeavours*). For each scenario, the project team formulates recommendations for policymakers at the local, national and European levels. The concept of futures thinking, although new within LUCA, is being integrated into policy.



The practical example submitted focuses on the manner in which LUCA has integrated the results and views from the FAST45 research project into the critical reflection carried out in the purview of the institutional review. The main outcome is awareness of the importance of futures thinking.

The LUCA management committee has decided to integrate futures thinking into policies and programme visions. The next step is to carry this through to the meso and micro levels of programmes, teachers and students.
See Chapter 5 for the full practical example, ***Future-oriented vision development at LUCA School of Arts***, including sources and contact options.

3.3.5 Illustration: Ghent University

Ghent University wants its programmes to pursue a **proper balance** between the acquisition of **discipline-specific competences** on the one hand and **generic competences** on the other. It has developed an *inspiring framework of generic competences* (in Dutch) which helps programmes to explore which generic competences are essential in the profile of the (future) graduate whom the university aims to produce. On the basis of this university-wide framework, the Faculty of Medicine and Health Sciences created its *own framework* (in Dutch) comprising eleven learning outcome domains. The faculty framework reflects the **faculty-specific emphases** for the graduates.
In a two-hour workshop, the programme is guided through **two thinking steps** and **updates** its **programme vision**.

- Step 1: The programme places itself in society and the professional field. This revolves around the following question: which current and future societal issues and professional requirements and evolutions are of relevance to the programme and its graduates?
- Step 2: The programme outlines the characteristics of its graduates. This revolves around the following question: What type of student does the programme aim to produce in five to ten years' time (knowledge, skills and attitudes) and which generic competences does this require? The point of departure is the university-wide framework or, if the programme is part of the Faculty of Medicine and Health Sciences, the faculty-specific framework.

See Chapter 5 for the full practical example, *From a central vision for future-proof curricula to a faculty approach within Ghent University*, including sources and contact details.

3.3.6 Illustration: Vrije Universiteit Brussel

In 2023, Vrije Universiteit Brussel formulated a **future-proof revised educational vision: VUB as an Urban Engaged University**.

This vision is built on **five pillars:**

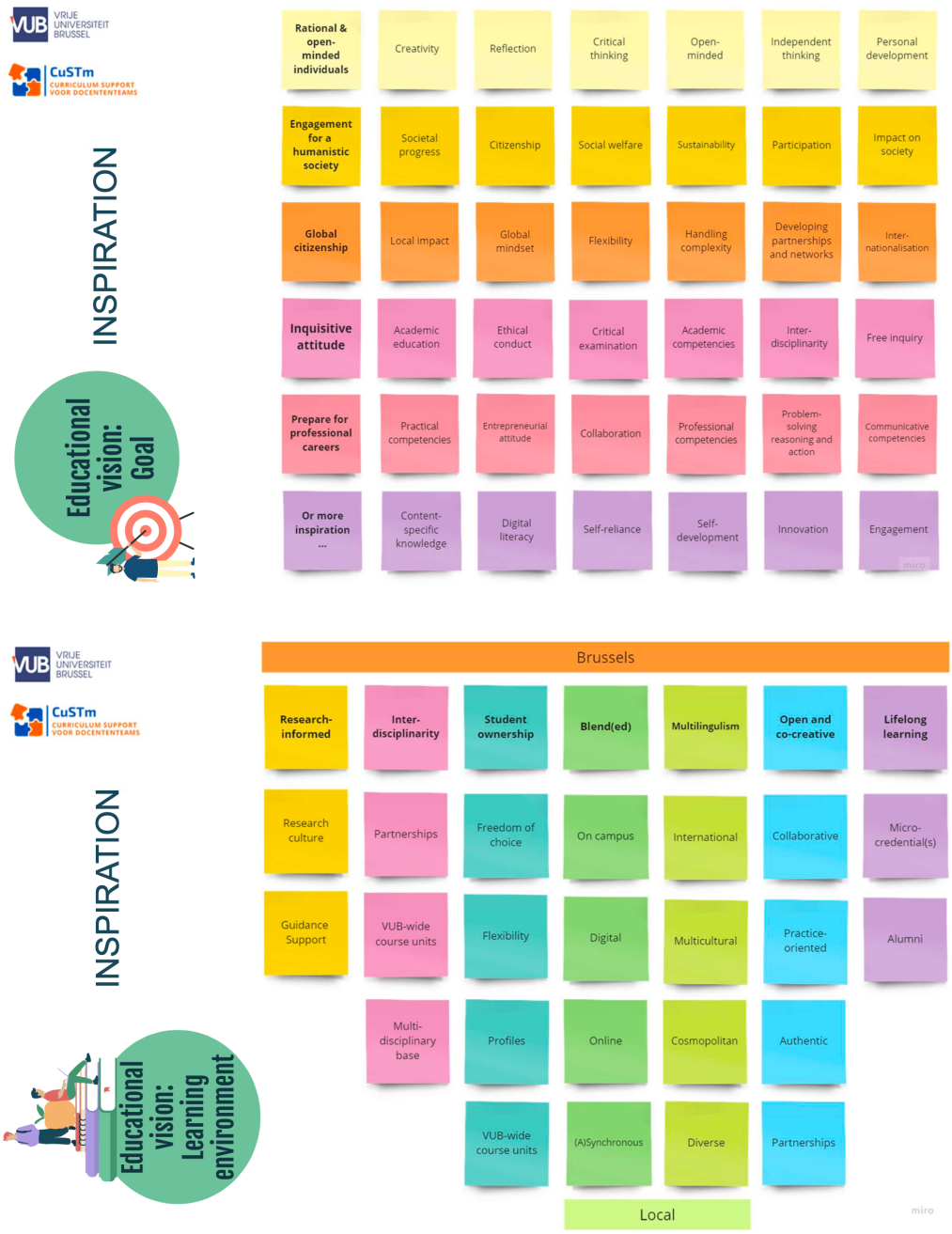
1. Development into open-minded individuals
2. Commitment to a sustainable, humanist society
3. Citizens of the world
4. Development of an open attitude of free inquiry
5. Preparation for a professional career

This vision identifies **seven teaching principles as ingredients** that guide programmes in the substantiation of their curricula:

1. Research-informed didactics
2. Student ownership
3. Interdisciplinarity
4. A thoughtful blend
5. Multilingualism
6. Open, co-creative education
7. Lifelong learning

In part to implement this revised educational vision, the university developed the **"Curriculum Support for Teaching Staff" (CuSTm) methodology**, based on the ADDIE model. The VUB educational vision is used as a touchstone in each of the phases. One of the first steps involves a two-hour workshop in which a programme team formulates or updates its views on education, based on the VUB-wide vision. Leading questions in this process are:

- Goal: What knowledge and skills do we want students to acquire during the programme?
- Values: What values do we, as a programme, consider important? What do we propagate?
- Learning environment: In what type of environment will students end up? What role(s) do teachers assume? With whom do students learn? Where and when do students learn?
- Teaching, learning and assessment formats: How do we want to encourage students to learn? How can we ensure that the students possess the intended competences?



Inspiration charts and worksheets used during the Vision Development Workshop

See Chapter 5 for the full practical example, *Curriculum innovation & Support for teaching staff at Vrije Universiteit Brussel*, including sources and contact details.

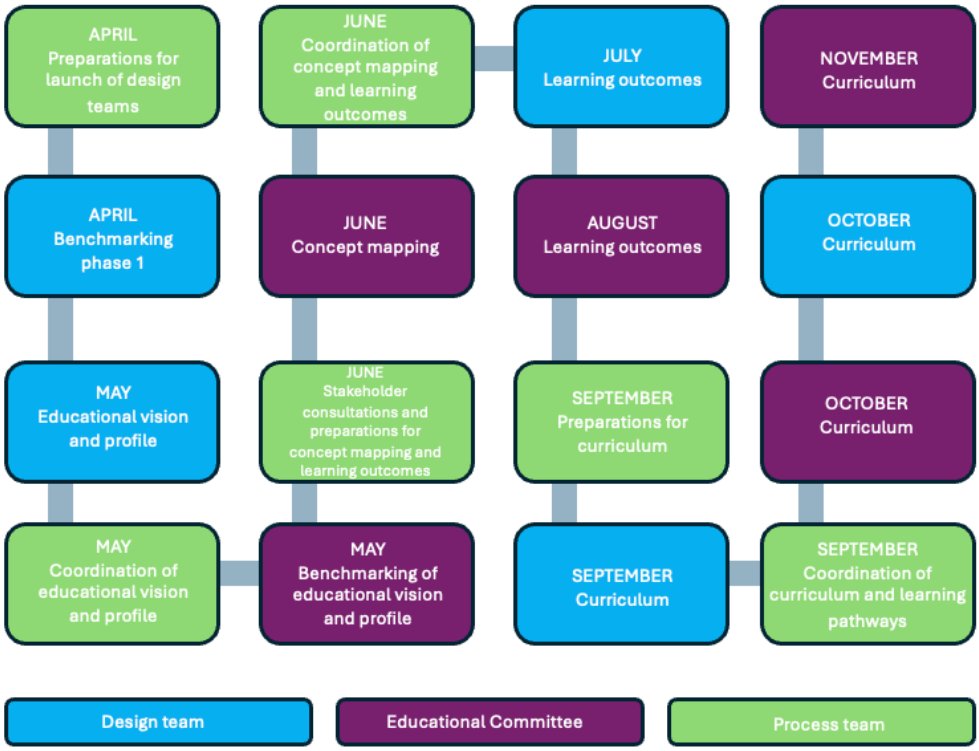
3.3.7 Illustration: KU Leuven – STEPS model

Two bachelor's programmes of the Faculty of Social Sciences were systematically restructured on the basis of extensive analyses and sources. Following benchmarking against similar programmes at home and abroad, the educational visions and profiles of the new programmes were elaborated. Subsequently, the content was visualised by a concept mapping exercise. Finally, the learning outcomes were defined and the curriculum concept and learning pathways were elaborated in phases. This resulted in

an innovative education model, in which each semester forms a complete study block and serves as a stepping stone to the next block: **"STEPS"**. The **lab courses** in this model constitute the most explicit illustration of this "future-proof" educational concept.

To steer this process in the right direction, the faculty appointed a **design team** for each programme – complementary to the Educational Committee – composed of representatives of academic staff, teaching assistants, students and educational developers. An overarching process team streamlined and initiated the efforts and pursued synergies. The phased implementation of the new bachelor's programmes is systematically monitored by the faculty education committee and the Educational Committee through focused direct interviews, formal evaluations and informal meetings with students.

Systematic design



Systematic and process-based strategy for the restructuring of two bachelor's programmes of the Faculty of Social Sciences

See Chapter 5 for the full practical example, *Lab weeks in the STEPS model of the Social Sciences bachelor's programmes at KU Leuven*, including contact details.

3.4 Development

3.4.1 Description

The "Development" phase involves the actual development, at the institutional and/or programme level, of the intended education to be provided within the future-proof curriculum. In this phase, on the basis of the vision and the proposed design plan, the curriculum and the associated learning activities are set down: elaborating learning outcomes, learning pathways and choices made regarding educational concept, defining the learning assessment policy, setting down course contents and instructional formats, developing instructional materials and preparing evaluation formats.

3.4.2 Key takeaways

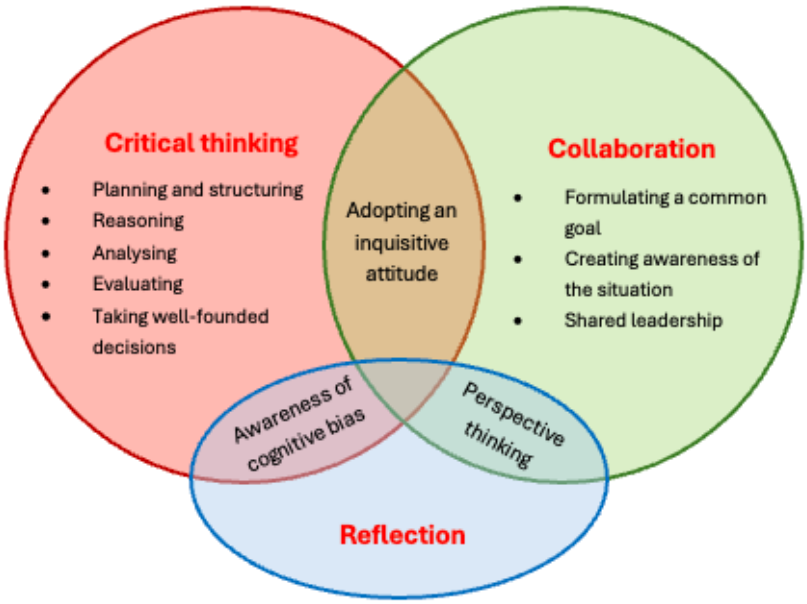
- Use the updated or new vision as a touchstone during the design and restructuring process.
- Adopt an incremental approach and use your time wisely. Adopt a working method that quickly generates tangible and relevant output for the programme (e.g. drafting an educational vision, specific choices for instructional and evaluation formats, adapted programme-specific learning outcomes).
- Provide a transparent structure and clarity: be transparent in what is expected (for example, expectations from each session, how many sessions have been scheduled, procedures) and monitor how the process is working out.
- Work on an evidence-informed basis, using theoretical models and adopting an inquisitive attitude.
- Provide a tangible instrument, such as a toolkit or sustainable educational step-by-step plan, that is open to modular, flexible and customised adaptation. Ensure that programmes can effectively set to work via activating and blended instructional and evaluation formats (*teach what you preach)*. This lowers the threshold.
- Have an eye on the whole picture: learning outcomes, instructional and evaluation formats, (subject) contents and the coordination of these elements within a curriculum (*constructive alignment* at the programme level).
- Ensure you create clear, appealing visuals and diagrams of the curriculum concept or model. Such visuals can also support the communication strategy and explain the reasons for the curriculum choice to stakeholders. Make the "why" explicit for all the teaching staff, (future) students and other partners.

3.4.3 Illustration: University of Antwerp

The origin of the **university-wide, interdisciplinary courses** lies in the decision of the Education Council and the Governing Board to include such programme components in the curriculum of each faculty of the University of Antwerp. This *top-down* policy is paired with a *bottom-up* approach: teaching staff of various faculties are involved in the development of the various courses. These university-wide, interdisciplinary courses, which are mandatory for second-year and third-year bachelor students, have been designed around themes such as social inequality, sustainability and ideological diversity. Nearly all interdisciplinary courses subjects are organised and coordinated by Centre Pieter Gillis (CPG).
In the Development phase, a team of teachers and educational experts from the central Department of Education collectively develop the **common core competences,** the **interdisciplinary content** and the **agreed structure** and **credits** for the programme components. In addition to a range of interdisciplinary courses, a transdisciplinary course is set up: "Community Service Learning".

The first phase involves the development of **instructional materials.** Two teachers from two different disciplines set down the course content, schedule the lectures to be provided by guest professors and create assignments for students. For the interdisciplinary courses, **various sources and materials** are selected in order to present different perspectives of the themes being discussed. In addition, within an agreed evaluation framework, the team experiments with different **evaluation formats** that cover students' theoretical and academic knowledge as well as their practical interdisciplinary skills.
CPG holds expertise in the field of interdisciplinary education. The CPG Governing Board strives to monitor this framework and provides feedback to teachers embarking on an interdisciplinary course. The feedback focuses on aspects such as the instructional concept, interaction with the students and the evaluation formats.

These "development decisions" are based on the quality culture within the institution, with an emphasis on competence-based education, activating and student-centred education, integration of education and research (nexus), and internationalisation. A thorough and theme-based approach in the Development phase enables the teachers to provide students with targeted and relevant support; thus, the latter will be better prepared for the complex challenges of modern society. As said, society is in a constant state of flux, so the "Development" phase is never really completed: over the years, new interdisciplinary courses may be added, whilst others might be scrapped. This allows for an optimum focus on topical themes.

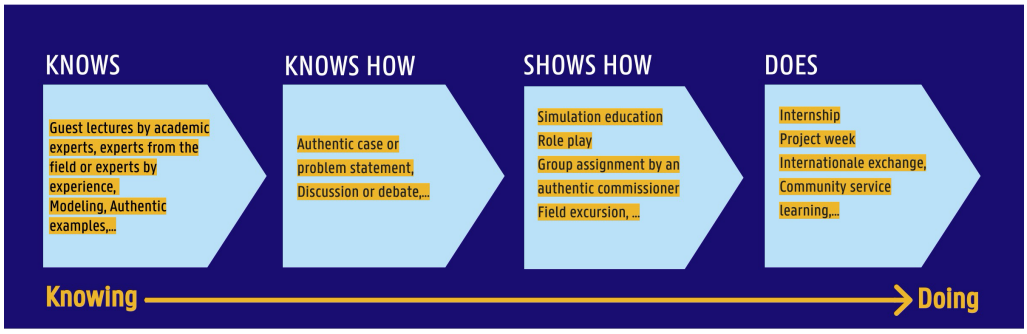


Source: De Greef, L., Post, G., Vink, C., & Wenting, L. (2017). Designing interdisciplinary education: A Practical Handbook for University Teachers. Amsterdam University Press, p.35.

See Chapter 5 for the full portrait, *University-wide interdisciplinary courses at University of Antwerp*, including sources and contact details.

3.4.4 Illustration: Ghent University

Once a programme has updated its programme vision with generic competences, it can design a specific action plan in relation to instructional and evaluation formats. An important design principle is the gradual (i.e. not once-only) acquisition of generic competences in the curriculum via experiential learning. The Miller pyramid is leading in this respect (see illustration).



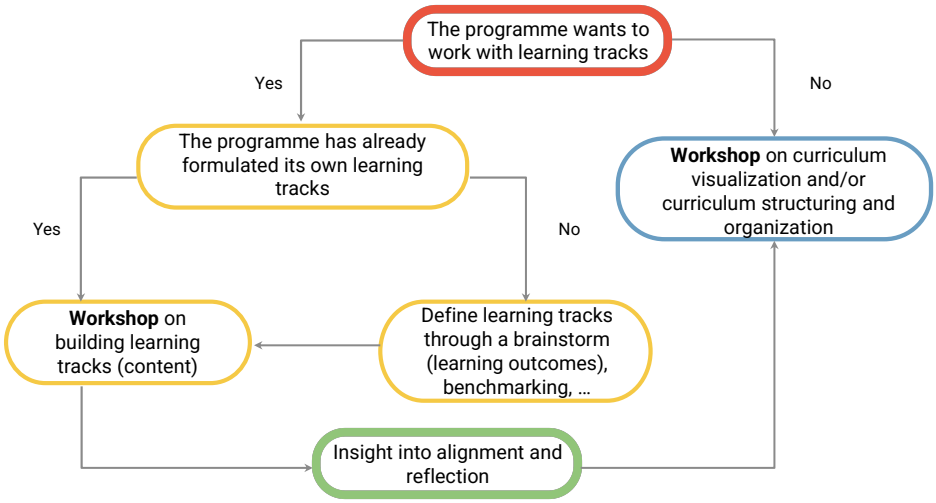
Based on this pyramid, Ghent University has developed three spectrums of experience-oriented instructional and evaluation formats for the curricular development of generic competences. On the left, each spectrum features instructional formats that are primarily aimed at the acquisition of knowledge and insight. Towards the right, the diagram features instructional formats aimed at the application of competences in a controlled education context, up to the ultimate fully integrated demonstration of the competences in authentic contexts.
In a two-hour workshop, the programme will pick a spectrum and select, in a targeted and well-considered manner, instructional formats (and evaluation formats) in order to develop the intended generic competences to the desired level. Each instructional format in the spectrum comes with a helpful info sheet that can assist teaching staff in the substantiation of their subject.
The programme selects one of the three future-oriented focuses. In the future, these will be supplemented further.

- *Interdisciplinarity spectrum* (in Dutch)
- *International stepping stones spectrum* (in Dutch)
- *Societal embedding spectrum* (in Dutch)

See Chapter 5 for the full practical example, *From a central vision for future-proof curricula to a faculty approach within Ghent University*, including sources and contact details.

3.4.5 Illustration: Vrije Universiteit Brussel

Once a programme has set down a clear vision (see Design phase), it can move on to the next phase. The follow-up workshops facilitated by the CuSTm support team address the design of **learning pathways**, **curriculum visualisation, curriculum structure and curriculum organisation**. Ultimately, programmes will gain additional insights into the structure and coherence of the curriculum, reflect on those insights and (if necessary) formulate action points.



Learning pathways flowchart

In one or more workshops, **learning pathways** were developed in accordance with the following steps:

- Determine the end point of the programme: the programme-specific learning outcomes.
- Determine which learning pathways will be integrated into the programme based on previous analyses, brainstorming and the programme-specific learning outcomes.
- Determine the attainment target for each learning pathway: What will a student achieve at the end of a particular learning pathway? To the achievement of which programme-specific learning outcomes is the learning pathway contributing?
- Determine the interim targets for each learning pathway: What interim steps must students complete to achieve the attainment target and where are these interim steps situated in the curriculum?
- Determine the components of the learning pathway: How will students be able to achieve the interim targets? Which (subject) content is contributing to the learning pathway? Which instructional formats, which study materials and which evaluation formats are suitable? Ensure coordination between the various elements of the programme component (congruence principle), but also within the programme.

In addition to the technical and administrative elements of curriculum building, the CuSTm methodology also supports programmes in terms of the **visualisation** of their curriculum (for example, visualising where and how the educational vision is integrated into the curriculum and in the individual programme components) and the **well-considered structure** of "future-proof" educational, instructional and evaluation formats in the programme.

See Chapter 5 for the full practical example, *Curriculum innovation & Support for teaching staff at Vrije Universiteit Brussel*, including sources and contact details.

3.4.6 Illustration: University of Amsterdam

A toolbox based on the *Inner Development Goals*

The *Transition Makers Toolbox*, based on the *Inner Development Goals* (IDG) framework, is a valuable tool for teachers and curriculum developers developing future-proof education. Now that science and society are becoming increasingly intertwined, universities need to equip students with not only knowledge and skills within their own

discipline, but also with insight into the societal and moral implications of their action. This requires a balanced approach, integrating cognitive and affective learning. The Toolbox, collectively developed by teachers from all over the Netherlands, offers ready-to-use learning activities and student assessment formats, divided into five categories, that encompass 23 attainment targets. Selecting the intended attainment targets will provide teachers with access to the instructional materials. This tool supports the personal development of students and ensures that they are prepared to tackle complex societal challenges.

In higher education, the interaction between knowledge, skills and attitudes is crucial. Traditionally, the academic focus was on knowledge transfer, but the needs of modern society require the development of attitudes, especially within the context of interdisciplinary and transdisciplinary education. Such an approach is essential to address complex issues such as climate change, access to healthcare and digitalisation.

The IDG framework, a non-profit initiative from Sweden, emphasises the personal skills and qualities that are necessary to tackle the societal issues identified within the UN *Sustainable Development Goals* (SDGs). In collaboration with other universities in the Netherlands, the University of Amsterdam Institute for Interdisciplinary Studies has created the *Transition Makers Toolbox* to tie in with this framework. The Toolbox offers extensive learning activities and evaluation methods for higher education institutions, in support of the development of crucial skills such as collaboration, reflection and resilience.

By integrating the IDG framework into their curricula, teachers can help students cultivate the vision, leadership and skills that are needed to realise societal changes. This holistic approach not only prepares students for understanding the world, but also for actively shaping the world towards a sustainable future.

Want to know more?
Home - Transition Makers Toolbox

Transition Makers Toolbox

3.5 Implementation

3.5.1 Description

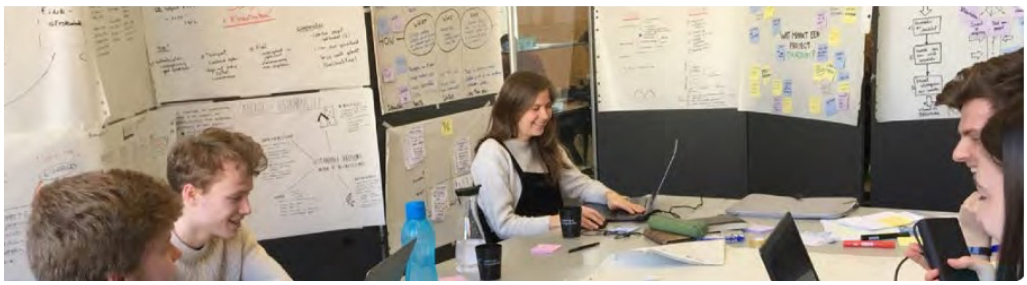
This phase involves the implementation of the curriculum: the material developed is put into actual use. This component also comprises staff development, teacher support and student support during their studies. Stakeholders are being informed. In many cases, the target group is requested to provide feedback at the start, with a view to the evaluation phase.

3.5.2 Key takeaways

- Use a clear instructional model that is conducive to internal and external communication and fosters the profiling of the updated programme.
- Allow sufficient time for operationalisation and provide proper coordination between all the parties involved at various levels within the institution. Regular consultation and mediators can help if problems arise and with the actual implementation. If possible, an institution can make funds available to this end.
- Professionalise the teaching staff involved to make them feel sufficiently competent to realise the innovations. Offering professionalisation initiatives and trainings for teachers and education staff is crucial to bring about a change in culture and to ensure that innovations are realised. Do not focus on substantive professionalisation only; also address professionalisation in relation to process management, paying attention to participation in the educational organisation (for example, Sociocracy 3.0).
- Starting from low-threshold initiatives such as drafting instructional materials or collectively reflecting on the future or the discipline can give impetus to the subsequent development of larger collaborative projects.

3.5.3 Illustration: University of Antwerp

The implementation of the university-wide, interdisciplinary courses within the University of Antwerp commences with careful **scheduling of the teaching activities** and the actual **introduction of the instructional materials developed** into the education process.
Teachers are provided with **support and feedback** from Centre Pieter Gillis (CPG), enabling them to ensure a consistent and effective learning experience for students. They employ both traditional and digital instructional resources, such as videos, podcasts and interactive modules. A key aspect of the implementation is the use of the Blackboard learning environment, which supports and motivates students. Among other things, Blackboard provides access to the instructional materials, enabling students to learn at their own pace. This not only boosts students' commitment, but also helps them to better understand and apply the subject matter.



In addition, in several interdisciplinary courses, **specific student assessment formats** are used to assess students' progress. These formats include essays, critical questions, presentations and projects. The evaluation formats not only assess students' **theoretical knowledge**, but also their **practical skills**. A combination of summative and formative evaluation formats ensures that students receive feedback and are able to improve their learning process. Furthermore, the subject of Community Service Learning offers students the possibility of combining their academic knowledge with practical experience.

During the implementation, account is taken of **feedback** from students (annual student evaluations), teachers and counsellors. This feedback is used to continuously improve the instructional materials and the educational formats. A structured and flexible approach in the implementation phase enables the University of Antwerp to provide students with high-quality and relevant support and enhance programme components.

See Chapter 5 for the full practical example, *Interdisciplinary courses at University of Antwerp*, including sources and contact details.

3.5.4 Illustration: Vrije Universiteit Brussel (VUB)

The **curriculum innovation mandates** are a way to realise future-proof curricula in line with the renewed VUB educational vision. The mandates are intended to partially exempt academic staff from educational tasks specifically with a view to optimisation of the curriculum. These mandates thus create **capacity (time and space)** among programmes and teachers to explore and implement relevant innovations in the curriculum.

During the academic year 2022-2023, ten projects were carried out by 24 mandataries, using project resources provided by the Higher Education Advancement Fund. These curriculum innovation mandates were focused on the design, development and/or implementation of new or updated programme components, learning pathways and partnerships, paying attention to the **policy priorities to promote future-oriented curricula** (for example, blended learning, international and intercultural competences, socially engaged education, sustainability, diversity, interdisciplinarity). For the duration of the mandate, the mandataries participated in three peer review sessions, focused on the exchange of mutual expertise.

According to focus meetings and self-reports, the mandataries have developed enhanced educational competences, but also (further) expanded their subject matter

expertise, organisational skills and leadership skills. Following a positive evaluation, VUB will set aside resources for a new round of curriculum innovation mandates, to commence in the autumn of 2024. Seven projects were accepted, with a total of 21 mandataries; therefore, most of the projects will be carried out by an academic educational team. The projects are aimed at the development of learning pathways (for example, research skills, AI literacy, intercultural skills) and the future proofing of curricula by way of co-creation and partnerships.

See Chapter 5 for the full practical example, *Curriculum innovation & Support for teaching staff at Vrije Universiteit Brussel*, including sources and contact details.

3.5.5 Illustration: Odisee

Implementing future-proof curricula requires supportive teamwork. Odisee has viewed the co-creation process in quite a broad perspective when implementing its new vision. Central-level education experts collaborated with the programme teams, both still operating at their own levels, with services providing complementary insights. In the practical example, we highlight the crucial role of a **central bridging figure** facilitating the coordination between educational innovation and the administrative-organisational processes.

Another prominent element of the implementation phase is the **substantive sprints**, which are small, institution-wide taskforces of teachers, students, educational experts and one central leader who delve into a curriculum challenge (for example, "How can we operationalise the ownership concept in our vision for teams and teachers?").

Coordination is essential during this development phase. Without coordination, the programme teams setting to work with the tools will be bogged down in the incoherence between the tools or find out too late that a particular idea, e.g. relating to formative and integrated evaluation, will have negative repercussions in terms of study progress.

Implementing future-proof curricula requires supportive teamwork. © *Lorenzo Quinn, Venice Biennale, Support, 2017 (https://pixabay.com/nl/photos/handen-veneti%C3%AB-kanaal-itali%C3%AB-2577535/)*

In parallel to the "sprints products", the programme teams were engaged in a **professionalisation track** pertaining to the design of future-proof curricula, process support and receptivity to change.

The central support provided via three inter-coordinated routes does not interfere with **programmes' ownership** of their specific curriculum and particular implementation.

We are situating the sprints and professionalisation in the Implementation phase of the ADDIE model, although they could also be placed under Development. This choice illustrates that at the institutional level, the thought process continues beyond the Design phase. In each subsequent phase, new teams are formed and supported in their curriculum reform.

See Chapter 5 for the full practical example, *Implementing curricular frameworks requires process support and coordination with services at Odisee UAS*, including sources and contact details.

3.5.6 Illustration: KU Leuven

Service-learning

Service-learning is an innovative educational approach that fosters the **broad personal development** of the students, in preparation for their future role in society. This holistic, value-imparting development is focused on the world and pursues greater societal solidarity. At several faculties of the three science disciplines at KU Leuven, a total of **35-40 Service-learning courses** have already been created. Each course involves a one-year start-up trajectory, in which various actors are involved (the university, teachers, students, partners), supported by a central service-learning team combining a range of expertise. The support is demand-driven and tailored to each course, in addition to professional training.
The process consists of several phases:

- **Phase 1: Information and assessment** - for example, contacts with the programme, teachers and students; assessing aims and objectives, assessing the framework.
- **Phase 2: Enhancing the foundations of Service-learning** - for example, clarifying mutual expectations and coordinating the basic values of Service-learning, with the team of teachers. This involves considering the societal and personal "*big why?*" of the course.
- **Phase 3: Project phase** - Interactive process with the team of teachers, in which the course is designed on the basis of a canvas featuring the different Service-learning elements, including the formulation of learning outcomes (academic, disciplinary, interdisciplinary and societal) and personal development goals (personal, collaborative and values) for the new course. It also includes the formal approval of the new course.
- **Phase 4: Further training and professionalisation** - In this phase, the Service-learning team organises several training sessions based on e-modules.

Once the entire process has been completed and the course has been validated, the new course will be launched in September of the new academic year.

See Chapter 5 for the full practical example, *Service-learning at KU Leuven*, including sources and contact details.

3.5.7 Illustration: KU Leuven – Adaptive basic math learning paths

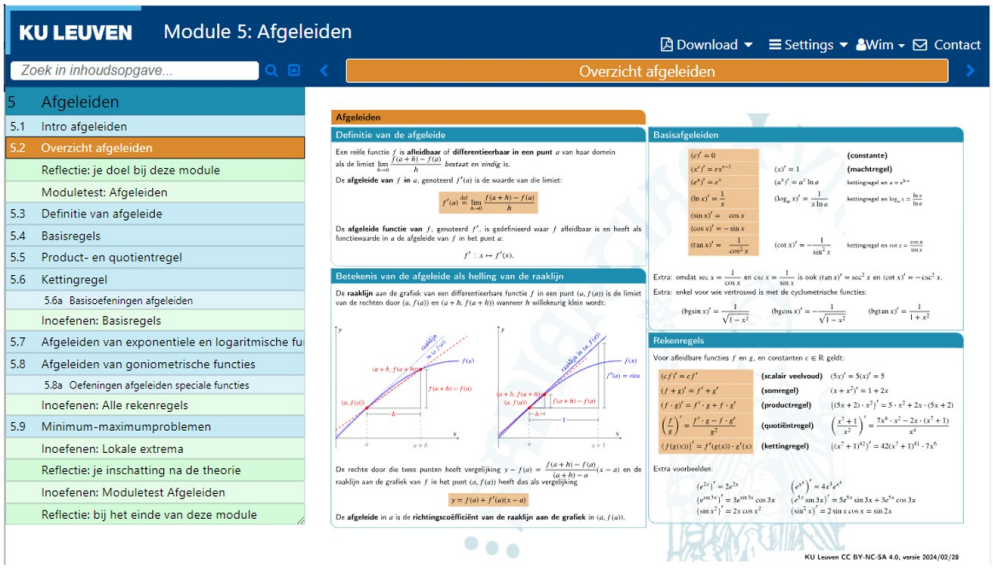
Improving the basic mathematics skills of an **heterogenous group of newly enrolled students** poses a considerable challenge at KU Leuven. This has prompted the faculties of Science (FWET), Economics and Business (FEB) and Industrial Engineering Science (FIIW) to join forces. The collective project addresses both the mathematical content and the instructional and technological aspects:

- A well-documented **modular range of basic math** for different entry levels, consisting of manageable **theoretical online modules** and **interactive exercises** with immediate feedback. These courses can be offered institution-wide, thus creating efficient, adaptive paths tailored to the needs of newly enrolled students.
- **Reflective questions and *learning analytics*** visualisations serve as a motivating, objective "mirror" for each student.
- A ***dashboard*** has been created for **student counsellors, study path advisors and teachers**, which displays, among others, the solved exercises (by individual students) and general statistics (page views).

The materials developed are used in several phases of the orientation and study process of future and newly enrolled students, always in consultation with the educational team:

- Within the Faculty of **Economics and Business**: an **entirely new online path** for various programmes, comprising theory, a reflection component and an interactive series of exercises. The online path is incorporated into the Math Preparation Path for prospective students and offered to students in the first phase of the programme as a "Basic math" support package.
- Within the Faculty of **Industrial Engineering Science**, new theoretical pages and a series of exercises have been developed.
- Within the Faculty of **Science**: a new **online remediation path** tailored to students embarking on the Bachelor of Mathematics and the Bachelor of Physics programmes, based on (former) positioning test questions.

Programmes in various other faculties are also already using the material developed.



See Chapter 5 for the full practical example, *Adaptive basic math paths for newly enrolled students at KU Leuven*, including sources and contact details.

3.6 Evaluation

3.6.1 Description

Evaluation and reflection are inherent to every step in the curriculum development process. The "Evaluation" step involves verifying whether the education to be provided under the future-proof curriculum meets the aims and objectives set down in the "Design" phase. This can be substantiated at the institutional and/or programme level. Areas that require adjustment are identified. The successes are specified and communicated.

3.6.2 Key takeaways

- **Reflect and evaluate on a regular basis, from the start of the development process:**
  - Incorporate a reflection step into the existing quality assurance system of the institution, focusing attention on educational policy, quality culture and quality assurance. From the start, consider the expected impact of and expectations for the educational innovation and how these will be monitored. When will we be content and how will we, as a programme, actively follow up the innovations?
  - An iterative approach, involving regular evaluation and adjustment, will generate sustainable change. Involving teachers and other staff in design teams and other participation structures fosters ownership and innovation.
- **Utilise data, adopt an evidence-informed approach.**
  - Use Power BI or another tool to collect quantitative data and visualise and evaluate achievements of the programme. You can also use qualitative data. Collecting and visualising data generates substantiated insights for fine-tuning your curriculum design and restructuring. Monitor and evaluate the effects of curriculum innovations at regular intervals, on the basis of actual data and indicators. This helps to gauge progress, celebrate successes and adjust course where necessary.
  - Encourage an inquisitive attitude among teachers with respect to their educational practice: how are they organising their educational practice and how does it impact students' learning and the teachers' own experience? Where possible, tie in with scientific literature on education research in the discipline.

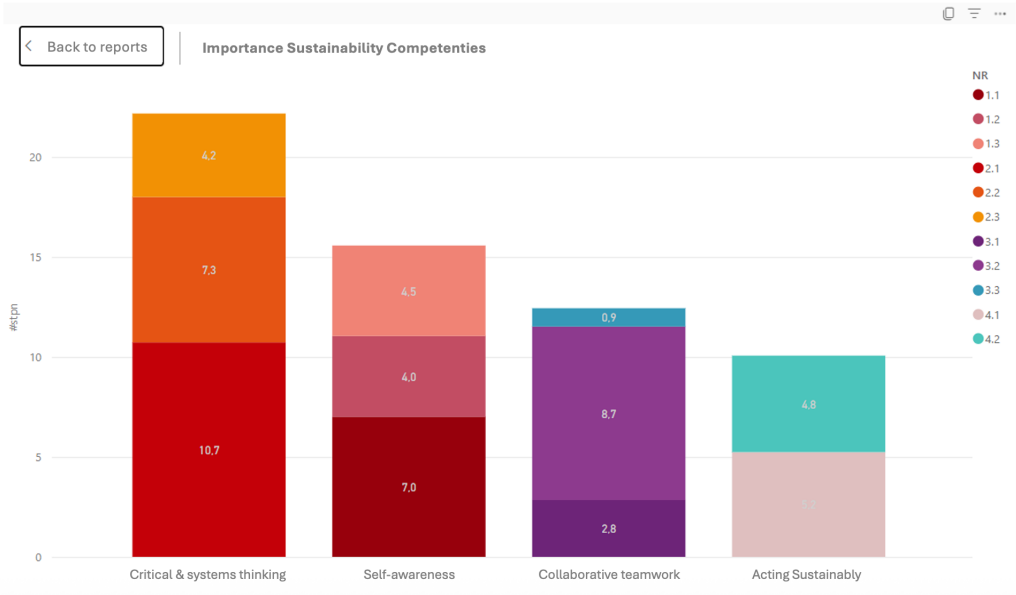
3.6.3 Illustration: AP University of Applied Sciences and Arts Antwerp

The **competence matrix** is a customised set of dashboards in the Power BI program (see under the "Analysis" phase). The tool is intended to analyse curricula and can also be used to simulate changes in the curriculum. Programmes can use it to consult the inter-relationship between programme-specific learning outcomes, attainment targets, instructional formats and student assessment formats per programme component and for the overall programme. This enables the programme to ensure that proper *constructive alignment* is achieved within the programme. The tool can be expanded to accommodate programme-specific requirements or university-wide projects.

The tool can be used in the "Evaluation" phase:

Measurable aims and objectives
The competence matrix enables AP to gauge university-wide policy. For example, in the near future, it will be possible to check per programme which programme components meet the Cross-pollination definition (see practical example) and whether each student has gained interdisciplinary experience upon graduation.

Reports



Overview of integration of sustainability competences into curricula as input for the Education service

See Chapter 5 for the full practical example, *The university-wide roll-out of the Cross-pollination within AP University of Applied Sciences and Arts Antwerp project*, including sources and contact details.

4 Basic conditions and prerequisites in designing a future-proof curriculum

This component addresses the basic conditions and prerequisites that transcend the design steps/phases of the ADDIE model. Key areas are **culture, time and resources**. Basic conditions are elements that are essential for realising educational innovation and lie within the sphere of influence of an institution or programme team. Prerequisites are invariable elements within which educational innovation needs to be realised (for example, legal frameworks).

Such basic conditions and prerequisites are regarded as **critical success factors** for designing and embedding a future-proof curriculum.

- Take account of **statutory frameworks**. Such prerequisites are mandatory and binding upon design teams. It is important to consider such frameworks not only at an early stage of the curriculum design process, but also in subsequent phases when ideas are crystallised and operationalised.
- Secure sufficient **funding**, as this gives you particularly important leverage in the development and implementation of future-proof curricula. Funding may come from your institution's own resources or from external grants, e.g. the Erasmus+ programme.
- Wherever necessary, base your efforts on a **central framework** and secure **central support.** Provide direction and clarity yet offer sufficient flexibility and autonomy for individual choices at the **decentral level**.
- Use an **engaging vision** as your point of departure, paying attention to various aspects and perspectives of future-oriented education.
- Take account of the **institution-wide strategic educational policy**.
- Wherever possible, launch **pilot projects**; this will create a ripple effect within the institution.
    - Enhance this effect via **networking**: establish contact between programmes in order to facilitate exchange and mutual inspiration (peer reviews, learning networks). This will foster their receptivity to change. Do this incrementally (no end date), with, for example, exchanges on specific tools.
    - *Early adopters* (*change makers*) make valuable ambassadors for championing the importance of future-proof curriculum design and restructuring and promoting engagement: they will plant the seeds for further expansion within the institution.
- Rather than focusing solely on the result of curriculum design and restructuring, also identify the benefits that a programme team will derive from working through the **process of change**, preferably with innovative instructional formats that generate a lasting impression.
- Be transparent towards programme teams regarding the **time** required for the high-quality realisation, monitoring and evaluation of the various efforts involved in a future-proof redesign. Encourage programmes to structurally allow time and space for mutual discussions about the education that they provide.
- Match teachers from **different disciplines**, thus enabling interdisciplinary activities to flourish and develop. Unknown is unloved.

- Have an eye for **collaboration** with (international) (education) **partners** to enhance the options for a future-proof curriculum. Take time to allow such collaboration to **grow**.
- It is not only the Design phase that requires time and resources: sufficient capacity is needed for **embedding and follow-up** as well. Arrange **professionalisation** of all the stakeholders (teacher teams, curriculum directors, staff).

5 Practical examples

This chapter looks at the practical examples submitted by the nine institutions that have participated in this system-wide analysis.
The international peer cases are discussed in Chapter 6.
The working group has opted for "practical examples" rather than "good practices" as the designation of this chapter, as in its opinion, one can learn from all types of situations, not just from success stories. Therefore, the practical examples presented here not only deal with the results and the critical success factors, but also with the challenges and the manner in which institutions coped with such challenges.
(Editor's note: elsewhere in this magazine, we do use the term "good practices", as this is the standard designation in the system-wide analysis framework.)

5.1 The university-wide roll-out of the Cross-pollination within AP University of Applied Sciences and Arts Antwerp project

What did we intend to address? Why did we consider that important?
In 2021, AP UAS proposed its new **vision of education**, accompanied by some **strategic aims and objectives for the period 2021-2025**. Said aims and objectives include the following: "Students collaborate, including across programmes, through a window in each curriculum and common programme components." AP thus intends to prepare its students to pursue, on an interdisciplinary basis, solutions to increasingly complex societal and professional issues.

How did we work on this? What results have we achieved?
To realise the aims and objectives set down in the educational vision, a working group was established under the authority of the Education and Student Directorate. The **working group** consisted of various representatives within the university: the project leader from the Education and Student Directorate, a programme head, a lecturer, two students, the Head of Student Records, the Timetables Policy Advisor and the Education Policy Advisor. The working group was charged with the task of converting the aims and objectives from the educational vision into specific university-wide guidelines or agreements. The many meetings of this working group resulted in a **Cross-pollination policy framework** which was scrutinised during a meeting of the core task consultation

committee (department heads, heads of the Schools of Arts and members of the management team). Following some modifications, it was endorsed by the Executive Director and the General Manager.

The policy framework sets out a **definition** of Cross-pollination and a **minimum number of credits to be assigned by first degree (associate degree) or bachelor's programmes** in order to enable Cross-pollination for **every student**. A deliberate choice was made to set down presumably complicated administrative and technical agreements at a later date. In order to properly map out the required technical-administrative agreements, several **pilot projects** were rolled out within two departments and one School of Arts. For each of these projects, budgetary support was secured.

Before long, the working group efforts and the many contacts with programmes revealed that a wide range of existing good initiatives/programme components already qualified for the designation of Cross-pollination. The competence matrix was used to map out these programme components through a baseline survey. In this digital tool (developed by AP within the Power BI program), which provides each programme with insight into its curriculum, instructional and student assessment formats and attainment targets, programmes could "tag" or mark the programme components that already accommodated Cross-pollination. This tagging enables central policy monitoring and allows programmes to mutually see which programme components are "open" to students enrolled in other programmes.

The Cross-pollination project is currently in full swing within AP. In many cases, the departments and Schools of Arts have latched onto this task to pursue and facilitate useful interdisciplinary collaborations. The results are gradually becoming manifest, and the initiatives are being scaled up. By 2025, the policy should be incorporated fully into every programme. At such time, quantitative measurement of the aims and objectives will be possible using the competence matrix, and we will verify among the students and alumni whether Cross-pollination is actually providing added value within their curriculum.

What are the main conditions for success?

- A central university-wide policy framework comprising clear agreements that cover all the programmes, in combination with pilot projects that generate a ripple effect.
- A working group in which a wide range of expertise from the university is represented. The working group regularly checks with stakeholders to keep a finger on the pulse and thus develop a feasible framework.
- The programmes are given leeway to set down their own actions and timing to align with the policy framework.
- The aims and objectives are formulated in a quantifiable manner and will continue to be followed up at the central level via the digital tool designed for this purpose. This ensures smooth follow-up of the policy, even after this strategic period.
- The point of departure is the scope provided by the initial objective of "creating room for supra-programme student collaboration". Scrutinization of administrative-organisational difficulties was deliberately postponed until later, in order to avoid crippling the initiative right away.

What challenges did we face and how did we cope?

The biggest challenge remains the actual organisation, both at the central level and among the departments and programmes. Cross-pollination requires assembling students from different programmes at the same time and within the same space. This is extremely complicated on account of different timetables and the countless options for substantiating Cross-pollination. The policy framework proposed setting aside a collective moment in the overall university timetable, specifically dedicated to Cross-pollination. This idea initially met with a great deal of protest and has not been implemented. However, now that programmes are actively setting to work, many of them spontaneously ask for creating university-wide time and space. Ideas and individuals sometimes need time to make strides; thus, in the long run, some issues will garner more widespread support.

"Power BI is a wonderful instrument for visualising Cross-pollination and interpreting achievements." *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Analysis"* and *"Evaluation"* phases in Chapter 3.

Contact

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5.2 Toolkit for learning outcome-oriented curriculum development within HOGENT

What did we intend to address? Why did we consider that important?
Our educational development service helps programmes to develop learning outcome-oriented curricula that are future-proof and in line with HOGENT's educational vision. Practical literature about curriculum development in higher education is not readily available, but within our service we had already gained extensive practical experience with supporting curriculum development. We noticed that many teaching staff tended to focus on content rather than on learning outcomes. That is why we sought to optimise our support for programmes with a view to the development of well-considered and learning outcome-oriented curricula.

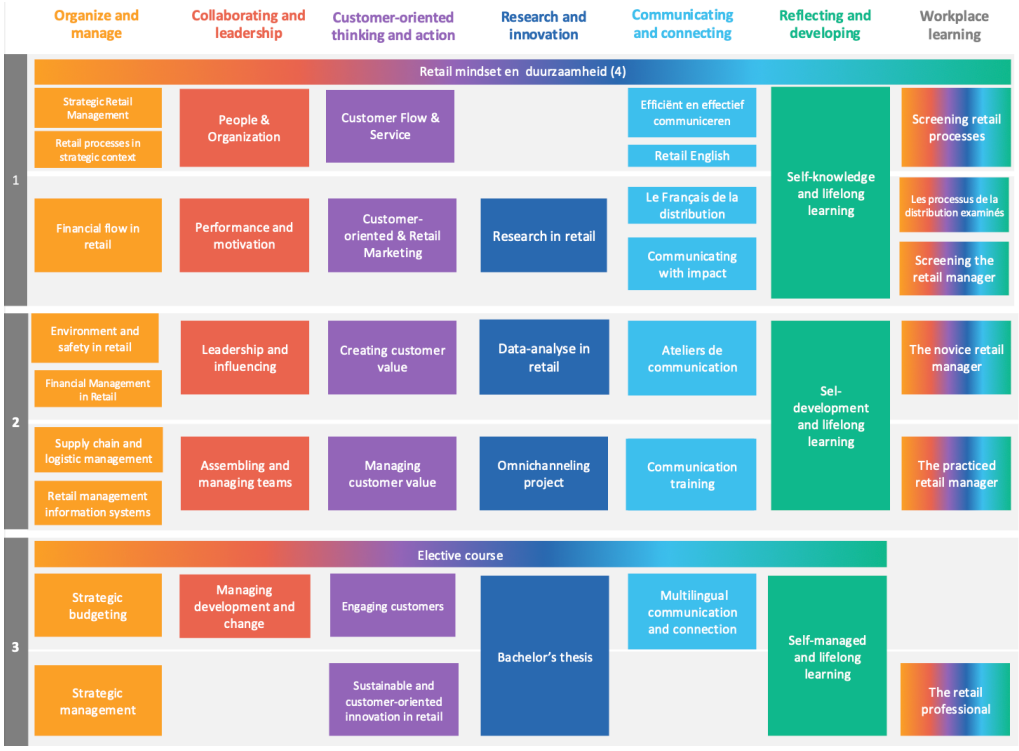
How did we work on this? What results have we achieved?
We developed a practical and inspiring toolkit that programmes can use to realise well-considered and learning outcome-oriented curricula. The toolkit is intended for education developers looking for practical and motivating methodologies and for curriculum managers who are keen on going through the curriculum development process together with their team. The toolkit is sustainable, as it has been developed independently of the university, its current policy and its current educational vision. Thus, other higher education institutions can also implement the toolkit.

The toolkit was developed on the basis of an educational step-by-step plan, which was thoroughly tested and adjusted.
During the development process, scientific insights and practical applications were combined in order to optimally gear the developed product to programmes' requirements.

The toolkit comprises ten steps for developing a learning outcome-oriented curriculum. Each step contains one or more info sheets featuring background information and several discussion or assignment sheets to support the process. In addition, good practices have been included for inspiration.

The following steps have been elaborated within the toolkit:

- Planning
- Exploration and understanding
- Programme profile
- Educational concept
- Building a curriculum:
    - Creating learning outcome pathways
    - Substantiating learning outcome pathways by setting down content, aims and objectives
    - Designing programme components
    - Finalising programme components by setting down evaluation and instructional formats
- Implementation
- Evaluation and adjustment



Although the toolkit is intended to be followed step by step, in the purview of a full curriculum revision, it also lends itself to more creative applications by selecting specific steps. This means that the toolkit can also be used to introduce minor adjustments to the curriculum. Throughout the steps, suggestions are provided regarding stakeholder involvement.

Going through the toolkit step by step will generate a learning outcome-oriented curriculum for a programme. The learning outcome pathways provide a clear structure in the curriculum, whereby the programme components serve as building blocks for achieving the learning outcomes. This clear structure enables transparent communication about the curriculum and helps teaching staff and students to best position themselves to achieve the intended learning outcomes.

What are the main conditions for success?

- The strong focus on learning outcomes helps to integrate this aspect into the culture, which is no simple matter.
- It is a sustainable instrument for long-term use.
- The toolkit can be used by other institutions.
- Programmes can choose: they do not need to follow the toolkit in a linear manner, but are free to adapt its use to their own requirements.
- The toolkit translates the educational philosophy into concrete and understandable terms.
- The toolkit is based on practices that have proven to be effective.

What challenges did we face and how did we cope?
The development of the toolkit was time-consuming. When collecting effective practices, it was essential to not only consider what works, but also the reasons why something does not work. Subsequently, the proposed approach was tested in other contexts and where necessary adjusted on the basis of the feedback received. This iterative process took time. In addition to the substantive elaboration, the actual design was also time-consuming.

The toolkit focused on the development of undergraduate programmes. However, other issues emerged when developing lifelong learning tracks. To accommodate such issues, we developed the supplementary alternative toolkit "Lifelong Development Expedition".

"The toolkit uses activating instructional formats, which places the team in an active position. This is essential, as ownership is vested with the programmes." *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Analysis"* and *"Design"* phases in Chapter 3.

Contact

- HOGENT Educational Development Service: *service.onderwijsondersteuning@hogent.be*

Want to know more?

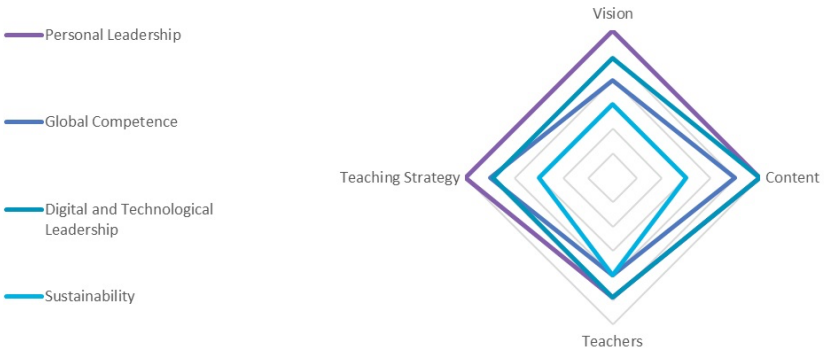
- The Lifelong Development Expedition toolkit (in Dutch) can be consulted *here*.

5.3 KdG competences as stepping stones towards the future

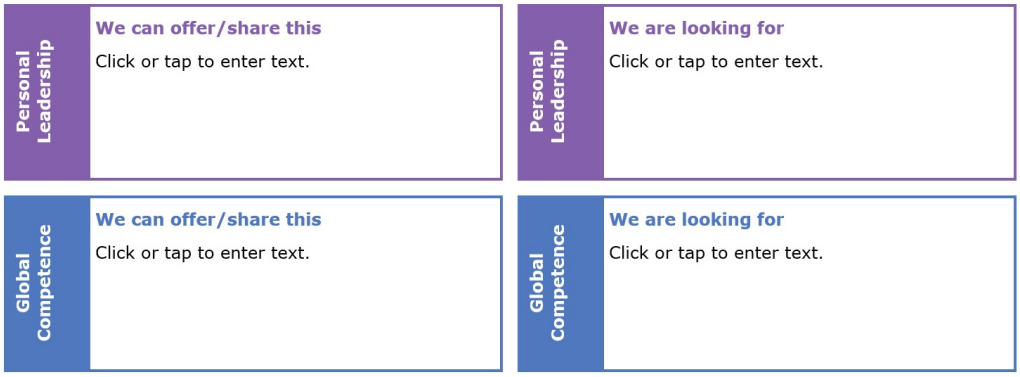
What did we intend to address? Why did we consider that important?
Within its Strategic Plan '21-'25, KdG UAS has defined four breakthrough domains. The KdG competences – **personal leadership, global competence, digital and technological literacy and sustainability** – are situated within one of these four domains. Among other things, these competences are intended to result in future-proof curricula. The KdG competences encompass so-called "transversal goals", i.e. goals that cannot be accommodated (solely) within one or more programme components, but (also) require a cross-curricular, even interdisciplinary approach.

How did we work on this? What results have we achieved?
Following the conceptualisation of the KdG competences, we developed the methodology for a KdG competence scan. This scan was intended to map out the baseline situation for each programme, in terms of each of the four competences. The baseline situation, in turn, constituted the point of departure for knowledge sharing, tailored to the requirements of each programme.

KdG competence scan revealed the baseline situation of each programme
Using a rubric, the programmes ranked themselves in terms of these four competences. Four perspectives were used to this end: the programme vision, the curriculum content, staff attitude, and the teaching strategy. For each programme, a two-hour focus group was set up with a core team, resulting in a comprehensive report. This is a screenshot of a sample report on the KdG competence scan:



Matchmaking methodology facilitated further knowledge sharing
For each of these four competences, this exercise not only generated a rough picture per discipline, per campus or for the entire university; the results were also used to facilitate further knowledge sharing between programmes. A strength-weakness analysis featuring specific illustrations for each of the four competences matched interesting discussion partners via a *matchmaking* methodology.



KdG competences knowledge sharing based on the scan exercise

Time and space were provided for knowledge sharing in an optimally safe environment. Therefore, the value of the knowledge-sharing moment primarily depended on the relevance of the shared info as perceived by the other programme and on the mutual commitment.

What are the main conditions for success?

- The shared language and significance of the competences in question: illustrating with practical examples is imperative.
- A tightly structured methodology carried out by a limited number of process supervisors ensures a consistent experience for all the programmes.
- The mandatory nature of the scan generates much data on the various baseline situations, thus revealing learning requirements and enabling matchmaking and knowledge sharing.

What challenges did we face and how did we cope?

The workload for process supervisors was very high.
The mandatory nature sometimes thwarted programmes' autonomy. We attempted to restore programmes' ownership by using a template for annual action plans, in which programmes could link specific actions to the various breakthrough domains and thus to KdG competences.

"Matchmaking as a working format inspires us all. The limited time investment – two hours for each programme, with an extensive output, is also greatly appreciated." *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Analysis"* phase in Chapter 3.

Contact

- *www.kdg.be*
- *nele.dewitte@kdg.be*

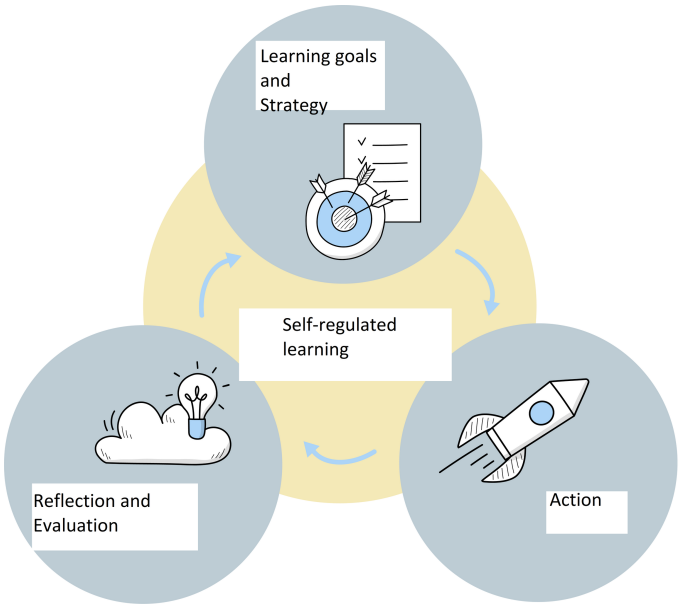
Want to know more?

- Vaughan, T., & Albers, B. (2021, May 4). *Research to practice – implementation in education*. Teacher Magazine. *https://www.teachermagazine.com/au_en/articles/research-to-practice-implementation-in-education*
- Helen May & Liz Thomas (2010) *Embedding equality and diversity in the curriculum. Self-evaluation framework*. York: The Higher Education Academy.

5.4 Adaptive basic math paths for first-year students at KU Leuven

What did we intend to address? Why did we consider that important?

In order to offer newly enrolled students maximum learning opportunities, KU Leuven is providing inclusive – and where needed, tailored – support, among others by using adaptive learning paths and learning analytics. Rather than adhering to the "one size fits all" principle, adaptive materials allow students to process the study and exercise packages at their own pace and in their preferred order.



In several faculties, refreshing and improving the basic math skills of a heterogenous group of first-year students poses a major challenge. The faculties of Economics and Business (FEB), Industrial Engineering Science (FIIW) and Science (FWET) have combined their experience and developed attractive, modular and adaptable (supporting/preparatory and remediating) basic math paths within a university-funded Innovative Digital Learning (IDL) project.

How did we work on this? What results have we achieved?

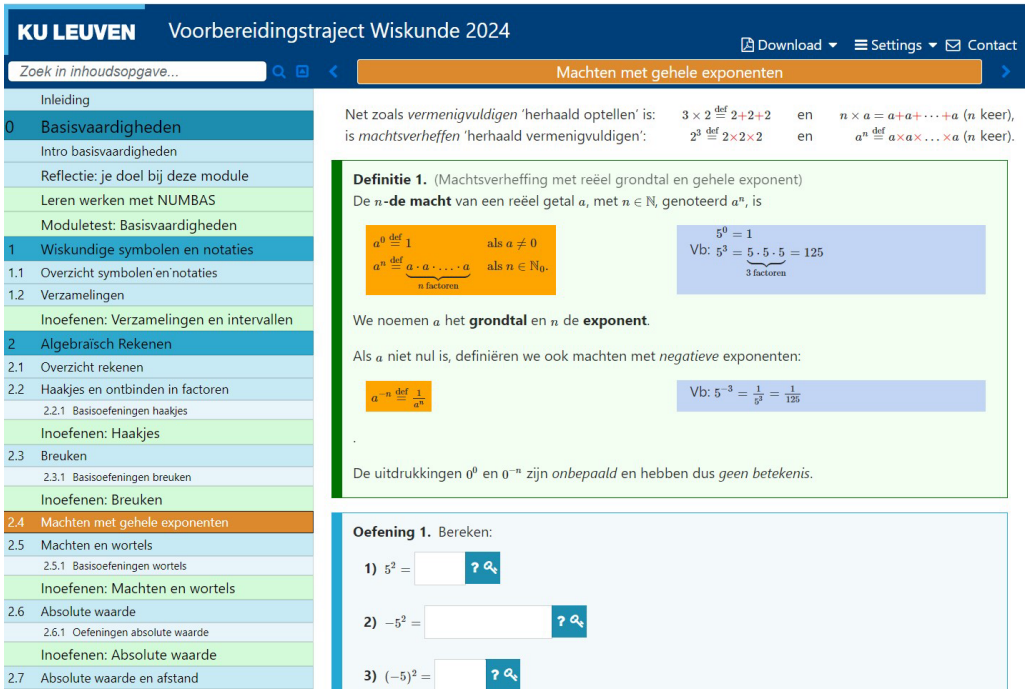
Since 2018, the Faculty of Science has adapted its existing Maths Summer Course for (online) self-instruction. Concurrently, the Faculty of Economics and Business was developing an online interactive Maths Preparation Track comprising more or less the same topics, whilst the Faculty of Industrial Engineering Science wanted to teach first-year students how to process the math learning materials more efficiently and more effectively.

In 2021-2023, these three faculties joined forces. Under the **"Adaptive Basic Math Paths @KU Leuven" IDL project,** the mathematical learning content, the instructional design and the technological foundation were elaborated upon and expanded into an adaptive range of basic math courses, which are now implemented at various locations. Under this **joint project,** the initiating faculties developed the following:

- A well-documented **modular range of basic math learning content** for different entry levels, consisting of manageable **theoretical online modules** and **interactive exercises** with immediate feedback. This offering can be used efficiently university wide, in order to create comprehensive and adaptive paths tailored to the needs of newly enrolled students.

- **Reflective questions and learning analytics visualisations** serve as a motivating, objective "mirror" for each student. Via the dashboard linked to the adaptive path, students' subjective perceptions are set against their objective performance. Thus, a heterogenous group of students is learning to process the study materials offered more efficiently and more effectively, by consciously setting learning goals and taking tests to assess whether these goals have been attained.

- A **dashboard for student counsellors, study path advisors and teachers** maps out, among other things, the solved exercises (by individual students) as well as general statistics (page views).



KU Leuven uses the materials developed to offer adaptive basic math paths in several phases of the orientation and study process of prospective and newly enrolled students.

- Within the Faculty of **Economics and Business**, an entirely new online path was developed for various programmes, comprising theoretical learning content, a reflection component and an interactive series of exercises. It is both used as a Math Preparation Path for prospective students and offered to students in the first phase of the programme as a "Basic math" support package.

- In consultation with the study coaches and assistants, the Faculty of **Science** developed a new online remediation path tailored to students embarking on the Bachelor of Mathematics and the Bachelor of Physics programmes, based on (former) positioning test questions.

- The Faculty of **Industrial Engineering Science** is offering this online material as a remediation path for students who failed the entrance exam.

- In consultation with the teachers and study coaches, the Faculty of **Industrial Engineering Science** added new theoretical pages and an (interactive) series of exercises.

Apart from the initiating faculties, the material is also used by programmes from various other faculties.
The initial results of a study into a potential statistical connection between participation in the Math Preparation Path offered by the Faculty of Economics and Business and student success in the first bachelor phase of the programme appear promising. The effectiveness of the dashboards and reflective questions will continue to be monitored.

What are the main conditions for success?

- Good and constructive cross-faculty collaboration
- Combining subject matter knowledge, technological and teaching expertise
- A common basis in a delineated domain (mathematics), but also the option of differentiation in accordance with a programme's singularity
- Central support, such as funding

"The accessibility of the dashboards for students provides added value!" *(quote from the system-wide analysis session)*

What challenges did we face and how did we cope?

- The main challenge involves the continuity of the project (material). The range of courses developed under this project utilises various components, that together constitute a slightly complex architecture.
- Securing resources for an inter-faculty information desk to support continued use of the material, such as when existing material is used in additional courses provided by other programmes.
- Ensuring that the KU Leuven programmes and faculties continue to find their way to this material, to guarantee that the efficiency gain created will not be lost.

"Good momentum: link to the entrance exam and corresponding mandatory remediation." *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Implementation"* phase in Chapter 3.

Contact

- *https://www.kuleuven.be/onderwijs/learninglab/projecten/archief/projecten-2021-2#2* (in Dutch)

Want to know more?

- *https://www.kuleuven.be/english/stuvo/onderwijs/learninglab/projecten/idl-2021-2022/adaptieve-trajecten-basiswiskunde* (in Dutch)

- Schmitz, B. & Wiese, B.S. (2006). New perspectives for the evaluation of training sessions in self-regulated learning: Time-series analyses of diary data. *Contemporary Educational Psychology 31*, 64-96.
- Zimmerman. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal 45:1*, 166-183.

5.5 Service-learning at KU Leuven

What did we intend to address? Why did we consider that important?

KU Leuven aims to offer its students a holistic education, focused on the world. Service-learning is an innovative educational approach that fosters broad personal development of the students, in preparation for their future role in society. It is a unique form of education, revolving around "serving" or "engaging", "reflection" and "learning". Students serve society by engaging with a particular organisation or community and reflecting on their experiences in a structured manner. Thus, they widen their outlook and learn not only at an academic level, but also at professional, personal, social and societal levels. This affords students the opportunity to grow into responsible and critical (global) citizens, who are committed to a world with greater solidarity at the local, European and global levels. In line with the recent UNESCO report *Reimagining Our Futures Together: A New Social Contract for Education* (2021), we intend to embed Service-learning as a valuable and value-imparting form of education within the university.

How did we work on this? What results have we achieved?

At KU Leuven, the introduction of Service-learning began in 2015 as a bottom-up process. With university support, a more broad-based project gradually developed, aimed at enabling each programme to offer the option of a Service-Learning experience. This resulted in the creation of 35 to 40 Service-Learning courses. Together with the four university colleges of the Association (Vives, UCLL, Thomas More, Odisee) and the School of Arts (LUCA) of the KU Leuven Association, Artevelde UAS and KdG University of Applied Sciences & Arts, KU Leuven established an active *Expert Forum on Service-Learning* (EF-SL) which already led to the creation of 27 Service-Learning courses. KU Leuven also participates in the global *Uniservitate* project with headquarters in Buenos Aires; KU Leuven is the Northwestern European hub of this network. Furthermore, within the *UNA Europa* network (European alliance of eleven European universities), KU Leuven pioneers the implementation of Service-learning.

Additionally, the KU Leuven Service-learning team helped to set up the *Flemish Network for Service-Learning in Higher Education* (founded in 2019), comprising all the higher education institutions in Flanders, which is coordinated by *UCSIA* (University Centre Saint-Ignatius Antwerp). Team members are also active within the *European Association of Service-Learning in Higher Education*.

The **methodology** for the development of new Service-learning courses is governed by a university-wide action plan for the development of a Service-learning culture, which encourages students to view involvement in social causes as an integral component of their programme.

That same methodology is also being implemented within the universities of applied sciences of the Uniservitate project.
At KU Leuven, the development and introduction of a new Service-learning course entails a one-year process comprising several sessions in which various actors are involved (the university, teaching staff, students, partners), supervised by a Service-learning team combining a wide range of expertise. The support offered demand-driven and provided on an individual basis, alongside professional training.

The process consists of several phases:

- **Phase 1: Information and assessment** - contacts with the programme, teachers and students; information session on Service-learning; assessing the aims, objectives and framework within the programme; visibility within the university including announcing the call.
- **Phase 2: Enhancing the foundations of Service-learning** - clarifying mutual expectations and alignment with the core values of Service-learning, together with the teaching team applying for the new course. Attention is also paid to the societal and personal *"big why?"* of the course.
- **Phase 3: Project phase** - Interactive process with the team of teachers, in which the course is designed on the basis of a canvas featuring the different Service-learning elements, including the formulation of learning outcomes and personal educational objectives (values) for the new course. Feedback is provided by the other projects and external partners. These first steps are aimed at the endorsement of the new course by the educational committee within the faculty and by the education council at the institutional level.
- **Phase 4: Further training and professionalisation** - In this phase, the Service-learning team organises several training sessions (within KU Leuven or a more intensive version, such as the booster campaign at the seven universities of applied sciences) on the relationship with societal partners and reflecting on Service-learning and student assessment. To this end, e-modules have been developed with a view to sustainable knowledge transfer. Furthermore, the team helps students find societal actors with whom they can gain experience.

Once the entire process has been completed and the course has been validated, the new course is launched in September of the new academic year.

Some examples of Service-learning projects:

- *Community Archaeology*
- *Sociology in action*
- *Imprisonment as lived experience*

What are the main conditions for success?

- Integration into the curriculum and alignment with the educational vision of the programme
- Conviction that higher education can impart values, boost students' personal development and foster greater solidarity together with the societal partners
- Conviction that society is a source of knowledge from which the university can learn
- Supporting infrastructure (central coordination)
- Support in terms of policy and resources
- Alignment with institutional mission, especially sharing knowledge to benefit people and society as a whole, with particular attention for people in vulnerable situations

What challenges did we face and how did we cope?

A key challenge is **turnover among staff** organising Service-learning. To accommodate such turnover, offering permanent options for professionalisation is advisable. Additional challenges are **turnover among decision-makers who support Service-learning** and **competing educational priorities**. For that reason, it is important to elucidate how Service-learning fosters the attainment of not only current and new educational aims and objectives, but also more broad-based institutional aims and objectives. This calls for a certain form of "internal marketing".

"The learning network approach enables the matching of experienced colleagues with colleagues eager to embark on Service-learning." *(quote from the system-wide analysis session)*

A final challenge involves the fact that integral education assumes a **personal commitment** of students and teachers. They often still need to be convinced that the investment in such a commitment is well worth the effort, considering the added value Service-learning offers.

"Inspiring practical examples of Service-learning are important tools." *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Implementation"* phase in Chapter 3.

Contact

- *https://www.kuleuven.be/english/education/sl/servicelearning*

Want to know more?

- *Service-learning* KU Leuven
- Mottart, M. (2015). "Service-learning: vorming van de student als volledig persoon door de integration van dienen, reflecteren en leren" [Service-learning: students' development into whole persons through the integration of service, reflection and learning]. *TORB*: *Tijdschrift voor Onderwijsrecht en Onderwijsbeleid*, 5, 386-395.
- Mottart, M. (2017). "*Institutionele inbedding van service-learning:* enkele handvaten voor een duurzame verankering" [Institutional embedding of service-learning: some guidelines for sustainable anchoring]. *TORB*. *Tijdschrift* voor *Onderwijsrecht en Onderwijsbeleid*, 3, 182-194.

5.6 Lab weeks in the STEPS model of the social sciences bachelor's programmes at KU Leuven

What did we intend to address? Why did we consider that important?

The restructuring of two bachelor's programmes was driven by several challenges, manifested by, among other things, the decline in student numbers and market share. The professional field indicated a need for the integration of future-oriented transferable skills. In addition, the faculty aimed to increase its focus on knowledge deepening, student activation and strengthening the disciplinary identity of the bachelor's programmes. This resulted in an innovative education model, in which each semester has its own identity and serves as a stepping stone to the next block: "STEPS". The lab courses in this model constitute the most explicit illustration of this "future-proof" educational concept.

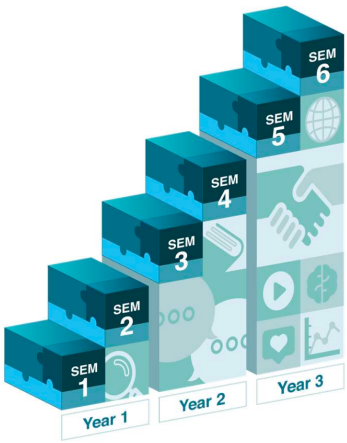
How did we proceed? What results have we achieved?

The spring of 2021 saw the initiation of the **restructuring of two bachelor's programmes** (Bachelor of Communication Sciences and both specialisations within the Bachelor of Political Sciences and Sociology) in the Faculty of Social Sciences (FSW). The redesign process was conducted in a highly systematic manner, based on extensive analyses and sources. The faculty appointed a design team for each programme, composed of representatives of academic staff, teaching assistants, students and educational developers. An overarching process team streamlined and initiated the efforts and pursued synergies. With effect from the academic year 2022-2023, the new bachelor's programmes were introduced phase by phase.

In the revised curriculum concept, each semester comprises three inter-supporting building blocks:

1. In the first nine weeks of the semester, students study the **knowledge courses** to acquire conceptual insight into the dynamics of societal developments, fault lines of divisions and phenomena.
2. A second type of subjects, the **research courses,** turns students into skilled researchers and critical academics. The research courses are taught throughout the semester.
3. In the final four weeks of each semester, **lab courses** are organised. Students seek connections among knowledge subjects, methods, theories and their own interests, and build bridges to society. The lab courses taught in the three disciplines vary in terms of content, themes and learning activity, but have similar aims and objectives. They are all aimed at deepening and activation.

"Stacking" these semesters in a cumulative manner will automatically generate a clear and coherent bachelor's curriculum, in which a multitude of attainment targets is achieved, and which can be visualised as follows:



Some focal points that reflect the innovative and future-oriented nature:

Within the outlines of the academic calendar – which are determined at university wide level– the lab courses introduce a radically **innovative rhythmicity** between knowledge and integrated skills. Students are expected to have processed part of the knowledge courses prior to the start of the lab courses (in week 10). Thus, they can use such knowledge and let it "mature" further during the lab courses, before entering the revision period and the exams. Furthermore, several lab courses challenge students to actually establish connections between different courses and knowledge contents, something that previously was not systematically included in the bachelor-level curriculum of many faculties and definitely not in the Faculty of Social Sciences.

Across the six semesters, the lab courses also offer a **learning pathway of transferable skills**, which are nonetheless firmly anchored academically. Previously, many of these skills were mainly addressed at a more fragmented level, in the form of minor assignments. Clustering this in multiple lab courses per programme provides students with a better picture of their own skills and of the various corresponding *disciplinary future selves*.

The lab courses were carefully developed into **high-quality programme components** and monitored in close consultation with the students. Both the informal and the formal evaluations demonstrate great satisfaction among the students. Such positive evaluation is also found on the part of the teachers involved. In those four weeks, the lab courses require major efforts from the teachers involved, but also enable them to discover, at an early stage of the bachelor's programme, student qualities that transcend the strictly course matter-related content. Furthermore, even though this was not intended, we now also see the concept of lab courses emerging in several faculty master's programmes, which serves to illustrate that teachers appreciate its added value.

What are the main conditions for success?

- Design team approach involving strong ownership and agency, complementary to educational committees
- Systematic approach to both process and result
- Intensive critical analysis of source material
- Seizing momentum prompted by urgency and intention within the faculty
- Courage to depart from a blank slate
- Clear instructional model that fosters communication and profiling
- Combination of top-down and bottom-up approaches

What challenges did we face and how did we cope?

- The fine-tuning of the requirements and points for improvement gave rise to several challenges, such as reconciling the demand for more skills with the demand for an even firmer academic foundation; combating fragmentation into a range of "minor" tasks and assignments in the curricula; and incorporating breathing space or at least clear rhythmicity for teaching teams. Integrating this range of requirements into the design of the new teaching model was no simple matter.

"Your approach demonstrates courage; it is really something completely different."

(quote from the system-wide analysis session)

- Now that implementation is fully underway and everything is being embedded in the regular operations, how can we keep all those involved alert? How can we best ensure that everyone continues to operate in the same spirit? We are already attempting to ensure this by closely monitoring the timetables on the faculty-level. Furthermore, this model accommodates different types of teachers: those who prefer to teach in front of an auditorium, and others eager to go along with the new lab subjects. The system-wide analysis group already suggested retaining the strong visualisation, checking ECTS files, setting down a set of fixed design principles, organising teaching staff consultations and involving the professional field and students.

"Starting from a blank slate really turns out to be a success factor here."

(quote from the system-wide analysis session)

To find out how the above practical example is situated within the ADDIE model, read the *"Design"* phase in Chapter 3.

Contact

- *https://soc.kuleuven.be/fsw/toekomstigestudenten/steps/steps* (in Dutch)

5.7 Future-oriented vision development at LUCA School of Arts

What did we intend to address? Why did we consider that important?

In 2023, how do we relate to 2045 as a higher art school, and what do we need to do to prepare for this? This is the key question of the *FAST45* Erasmus+ project. The future cannot be predicted, but the education sector can help to shape its own future via Futures Studies. With this type of vision development, planning, monitoring, analysing and assessing policy initiatives requires more than shifting and adapting. It is particularly important for everyone to be able to participate in shaping the future. Artistic practices constitute an excellent instrument to this end. This practical example focuses on the manner in which LUCA has integrated the results and views from the FAST45 research project into the critical reflection carried out in the purview of the institutional review.

How did we work on this? What results have we achieved?

FAST45 is a European Erasmus+ KA2 Knowledge Alliance project (2021-2023) that explores a future in which participation, research and education in the field of arts plays an important and integrated role. The project team is developing a **knowledge basis** (*online learning platform*) featuring information (interviews with experts, knowledge clips, seminar recordings, discussions, literature referrals, infographics, guidelines and methods for futures studies, etc.) aimed at providing art schools with an instrument to engage in futures thinking.

The project is developing a methodology and setting up **Future Art School Labs** in which internal and external stakeholders discuss, survey and document building blocks for futures thinking. These building blocks constitute the basis for the development of four **Art School Futures Scenarios (**Open Spaces, Slow Eco Life, Phygital Frontiers, Profitable Endeavours). For each scenario, the project team is also formulating a set of *recommendations* **for policymakers at the local, national and European levels**.

This practical example focuses on the manner in which LUCA School of Arts has integrated the results and views from the research project into the design of the critical reflection carried out in the purview of the institutional review (2023-2024).

The critical reflection outlines how the **futures cone**, combined with specific methodologies developed within FAST45, can serve as a guideline in the design of a subsequent policy plan (for the period 2028-2034) in order to engage in futures thinking. Currently, however, the integration of this concept and imagery within LUCA is still in its comparative infancy. Obviously, the current LUCA policy frameworks have been in place for a longer period of time; they have been developed without the concept

of futures thinking. Nonetheless, they fit in with the concept, which provided a useful stepping stone for drafting the critical reflection.

The momentum that LUCA is currently building is the effective implementation of the conceptual framework for futures thinking as a policy instrument, at both the macro level (institution) and the meso level (programme). A significant milestone on this road to implementation is the conclusion that some people may be held back by mindsets such as "*you are here*" or "*as is*"; this may interfere with the reflection on "*futures*" such as "*possible, preferable, probable, plausible, preposterous*". For that reason, getting to know specific methodologies and instruments for activating a **futures thinking** mindset is crucial.

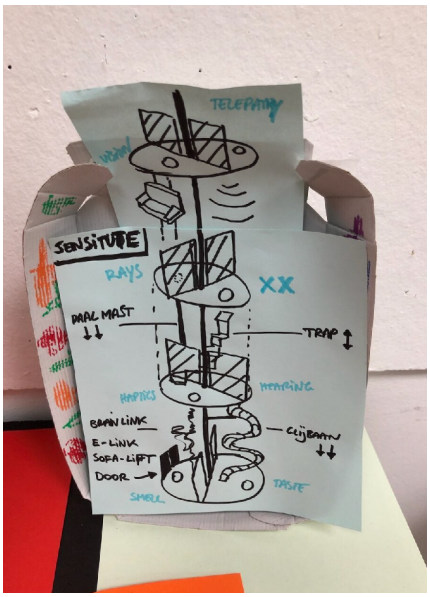
Building momentum and fostering innovation involves trial and error. Having futures thinking land with policymakers is not always a matter of a clear, highly specific agenda; it also requires a more general mindset. The wide attention within LUCA for the results of the FAST45 project – under which eleven institutions providing higher arts education (HAE), two European HAE network organisations and three business partners engage in close collaboration on facilitating futures thinking in HAE – can, therefore, be called a success.

What are the main conditions for success?

- An open, creative and inquisitive attitude
- The conviction that multiple forms of future are possible
- A hopeful mindset: the belief that you can have and shape impact
- Funding is important: the fact that the project qualified for Erasmus+ funding has facilitated the work
- International orientation, international collaboration
- The extent of integration with education: it is not an unrelated matter, especially in arts education

What challenges did we face and how did we cope?

The main result is awareness of the importance of futures thinking. The LUCA management committee has decided to integrate futures thinking into policy operations at the institutional review level and at the programme vision design level. The next step is to have this filter through to the programme meso and micro levels, in order to ultimately end up with teachers and students. A think tank enabling mutual knowledge sharing may be helpful in this respect. Futures thinking takes time and involves a participatory process, attempting to determine valid matters to work on. This is in part speculative and in part hypothetical, but a wide range of techniques are available to link this speculative and hypothetical to the further design and operationalisation.



"Futures thinking is a powerful first step in reflecting on the future of education and curricula, and thus on their potential short-term and long-term development." *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Design"* phase in Chapter 3.

Contact

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Want to know more?

- *https://www.fast45.eu/art-school-futures/datamaps-bibliography*
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5.8 Implementing curricular frameworks requires process support and coordination with services at Odisee UAS

What did we intend to address? Why did we consider that important?

In 2018, Odisee elaborated its *vision 2027*, revolving around four action principles: sustainability, inclusion, agility and co-creation. In 2019, the vision was translated into an *Institution-wide Framework for Curriculum Development* (in Dutch) featuring four design principles for future-proof curricula: (1) lean and flexible education and service provision; (2) a leading role for learners; (3) evaluating in order to learn; and (4) learning in authentic and co-creative contexts. Odisee is thus striving for education that creates added value for students, teachers and the professional field and that is geared to the changing requirements of student groups, the professional field and society as a whole.

How did we work on this? What results have we achieved?

The roll-out of the framework project involved a complex and integrated process:

- **Professionalisation and process support** - in 2020, programme heads and educational experts in each discipline embarked on a training process. Since then, a shift in culture has been observed, and teams are working on their curricula in accordance with sociocratic principles (S3) (Cumps, 2019).
- **Supporting material** - programme teams can avail themselves of conceptual frameworks, inspiration documents and other tools developed by expert teachers in short sprints, in collaboration with teachers, programme heads, educational experts, colleagues from support services and student representatives.
- **Coordination between key actors -** prior to the implementation phase, we checked the inter-congruency of the educational curriculum revisions and the administrative-organisational processes.

By coordinating these three elements we have created a centrally controlled process that can be implemented decentrally and, therefore, in a differentiated manner. To put this into practice, we opted at the start, in January 2020, to appoint two **key figures** within the Education and Quality service, who closely collaborate and speak the same language:

- One person responsible for professionalisation and process support across the programmes and disciplines;
- One person facilitating coordination with the underlying processes and entities: the bridging figure between the education and non-education sections of the organisation. The latter aspect constitutes the focus of this practical example.

The rationale behind the position of a **bridging figure** was the acknowledgement of the fact that for the programmes to realise the ambitions set out in the Framework for Curriculum Development, Odisee's non-education processes needed to be adapted. At that time, an individual was sought who had sufficient understanding of both the educational and administrative-technical aspects and who was broadly connected throughout the organisation.

Bridging figures connect programmes and supporting services staff, whilst forming a team themselves. (C) Lorenzo Quinn, Venice Biennale, 2019, licence CC BY-NC-ND 2.0

From the start, a key issue was defining the distinction between prerequisites in the implementation of the framework and basic conditions. **Prerequisites** were defined as boundaries within which the project needed to be carried out and about which little could be done for the time being, such as funding or legal frameworks. **Basic conditions** are elements that fall within the Odisee sphere of influence and that are essential for the full realisation of the curriculum development framework, such as adapted administrative systems. This transparent distinction created focus.
On the basis of a continuous further survey of the requirements (and mindsets) of programmes and an impact analysis of the basic conditions identified, co-creative coordination is achieved with the education support entities (such as student records, planning, ICT, HR).
The appointment of a bridging figure has already produced several concrete results at Odisee:

- A more flexible exam system that accommodates the singularity of future-proof curricula but is also compatible with the regulations governing student records;
- structural consultations via diverse consultative bodies outside the lines of hierarchy;
- a concept for curriculum development in which educational and administrative logic are aligned.

In general terms, the main result of the Institution-wide Framework for Curriculum Development project is that with effect from September 2027, all Odisee programmes will have a future-proof curriculum. Some already have so now.

What are the main conditions for success?

- Formulating Vision 2027 in 2018 allowed the ideas to sink in. The dot on the horizon worked as a magnet.
- The position of a bridging figure: a safe and well-informed contact person who is kept entirely outside the line of hierarchy. The power of the argument (S3) can be exerted to its full extent here.
- Involvement of a wide group of colleagues in the entire process rather than consecutive involvement of different individuals each time, who are expected to work on something with whose background they are unfamiliar.

What challenges did we face and how did we cope?

Organisations can never exclusively devote their attention and energy to development processes. Alongside the creation of future-proof curricula for new generations of students, current students are entitled to a good education, which demands reflection and energy from everyone. Keeping one's focus and not losing oneself in detail is essential. Managers play a key part in this respect.

Project managers have a temporary mandate, as has the bridging figure connecting education with the underlying processes and entities. Whereas the latter's role is not intended to be permanent, the connections that they establish must prove sustainable. As it is too early to determine whether the organisational culture has permanently changed, key actors will continue to proactively meet in order to collectively anticipate future developments.

"It is good to also tackle the institutional concrete in the organisation. Rather than afterwards being annoyed by services that refuse to go along with a new educational concept, you throw them all into the pot right away." *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Implementation"* phase in Chapter 3.

Contact

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- *https://www.odisee.be/odisee-als-partner* (in Dutch)
- *www.odisee.be*

Want to know more?

- *Vision 2027*
- *Institution-wide Framework for Curriculum Development (IKCO)* (in Dutch)

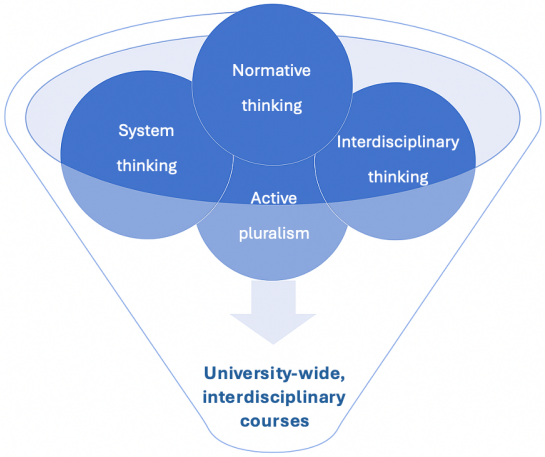
5.9 University-wide interdisciplinary courses at University of Antwerp

What did we intend to address? Why did we consider that important?

During the merger of the University of Antwerp in 2003, we aimed to highlight the diversity of (ideological) perspectives by promoting "active pluralism". This is important, because it prepares students for a society in which different ideological and moral views play a part. Amassing various perspectives and disciplines in order to engage in a dialogue allows students to develop future-proof competences, enabling them to function in a complex, multi-cultural world and to contribute to an inclusive society.

How did we work on this? What results have we achieved?

In 2003, **Centre Pieter Gillis (CPG)** was established to promote active pluralism. This centre organises **"university-wide, interdisciplinary courses"** that challenge students to reflect, in a critical and interdisciplinary manner, on societal issues such as social inequality, migration, urban diversity, sustainability and climate change. Community Service Learning, which is not only interdisciplinary but also transdisciplinary, is also offered as an interdisciplinary course. Within every bachelor's programme (2nd and 3rd years), each student is required to take at least one university-wide, interdisciplinary course. Currently, students can choose from **fourteen interdisciplinary courses** focused on **various complex issues** (also termed *wicked problems*), in which **different disciplines and ideological perspectives are integrated**.



The process started off with an **approach that is both top-down and bottom-up**. The Education Council and the Governing Board of the University of Antwerp initiated the development of the university-wide, interdisciplinary courses (top-down), accommodating suggestions and input from colleagues, research groups and groups of experts from various faculties (bottom-up). This resulted in the creation of several university-wide, interdisciplinary courses, such as the A courses (mandatory courses), B courses (for students whose timetable, after A courses, still had room for an additional three-credit course) and C courses (C courses could only be taken in combination with A or B courses). At a later date, these courses were combined and expanded.

The university-wide, interdisciplinary courses are based on the educational vision of the University of Antwerp, which comprises four basic characteristics: **activating, student-centred and competence-based education** (commitment to an activating learning environment, in which students independently integrate knowledge, skills and attitudes), an **education-research nexus** (academic and high-quality education, based on scientific research), **internationalisation** (commitment to international and inter-cultural competences and to student mobility) and **active pluralism** (fostering dialogue, interdisciplinary exchange and civic engagement). Taking the university-wide, interdisciplinary courses enables students to enter into a dialogue with different

perspectives and disciplines, which fosters their capacity for critical thinking and respect for diversity.

The results are largely positive. Students report a better understanding of and appreciation for (ideological) diversity and societal challenges. They are developing skills for tackling complex issues from an interdisciplinary perspective and show heightened awareness of their role in a diverse society. The interdisciplinary courses have contributed to creating a more inclusive and future-proof learning environment at the University of Antwerp.

What are the main conditions for success?

- Focus on activating and student-centred education
- Interdisciplinary collaboration between teachers from different faculties
- Interdisciplinary collaboration between students from different programmes
- Input from guest lecturers and external experts
- Regular evaluation and adjustment of the curriculum
- Support from the Education Council and the Governing Board
- Good collaboration with various actors (e.g. teachers, e-campus, Ministry of Education, faculties)

"There is an interesting tension between Centre Pieter Gillis that organises the university-wide, interdisciplinary subjects and the faculties with their own cultures and organisations." *(quote from the system-wide analysis session)*

What challenges did we face and how did we cope?

Activating students posed a major challenge on account of the large groups, different campuses and varying timetables. We are attempting to pursue interactive textbooks and activating education.

Elaborating interdisciplinarity was not always simple: in some cases, it rather resembled multi-disciplinarity, in which a particular theme is approached from different disciplines without resulting in a new, integrated whole. This was addressed by working with interdisciplinary group assignments, reflection moments, activating tutorials and Q&A sessions.

In addition, monitoring uniformness of the interdisciplinary courses was essential to ensure consistency and quality. This was achieved through regular consultation and coordination between the teachers involved in the interdisciplinary course committee, by utilising the same competence framework and by elaborating evaluation criteria.

To find out how the above practical example is situated within the ADDIE model, read the *"Development"* and *"Implementation"* phases in Chapter 3.

Contact

- *https://www.uantwerpen.be/en/centres/centre-pieter-gillis/education/*

Want to know more?

- *https://www.uantwerpen.be/en/centres/centre-pieter-gillis/education/*
- *https://www.uantwerpen.be/nl/projecten/community-service-learning/* (in Dutch)
- *https://www.uantwerpen.be/en/about-uantwerp/organisation/what-do-we-stand-for/mission-and-vision/core-tasks/education/vision-on-education/*
- *https://www.uantwerpen.be/en/about-uantwerp/organisation/what-do-we-stand-for/mission-and-vision/core-tasks/education/strategic-policy-themes/*

5.10 From a central vision for future-proof curricula to a faculty approach within Ghent University

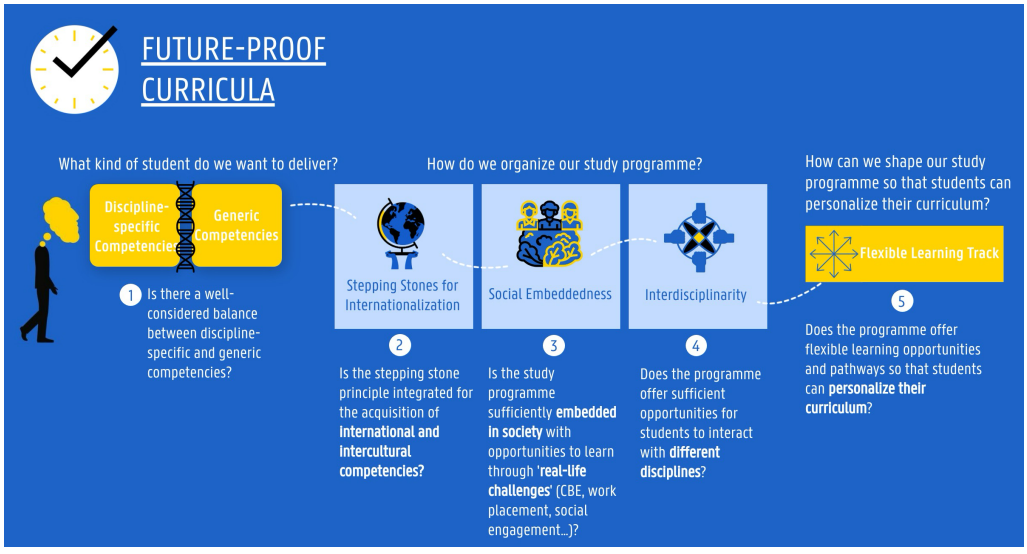
What did we intend to address? Why did we consider that important?

Rapid economic, social, ecological and societal changes prompted Ghent University to formulate the ambition of realising programme curricula that better prepare students for the challenges of the future. With financial support from the Higher Education Advancement Fund, over a period of one and a half years, Ghent University therefore elaborated a vision and methodologies to support programmes in the future-oriented restructuring of their curriculum. The development involved a unique and iterative collaboration between central education developers and faculty staff of eleven faculties. The Faculty of Medicine and Health Sciences opted for a participatory process (co-creation) to translate the central vision and methodology to its own context, in order to achieve a faculty-specific approach.

How did we work on this? What results have we achieved?

As its point of departure, Ghent University set down five reflective questions (**future-proof criteria**), based on European agendas and policy documents, aimed at assessing the future orientation of a programme curriculum:

1. Do the programme-specific learning outcomes feature a well-considered balance between discipline-specific competences and **generic competences**?
2. Does the programme curriculum offer students sufficient options for **interaction with different disciplines**? Do the instructional and evaluation formats accommodate this?
3. Does the programme curriculum offer options **for the acquisition of international and intercultural competences** in accordance with the *stepping stone* principle? Do the instructional and evaluation formats accommodate this?
4. Is the programme curriculum **sufficiently anchored in society** with options for students to learn through "real-life challenges"? Do the instructional and evaluation formats accommodate this?
5. Does the programme offer **flexible learning opportunities and learning routes** enabling students to customise their curriculum, in line with the programme-specific learning outcomes?



For these five reflective questions (future-proof criteria), Ghent University elaborated both a vision and methodologies. In addition to an *inspiring framework of generic competences*, three inspiration frameworks were created for selecting instructional and evaluation formats in the purview of fostering *interdisciplinarity*, *internationalisation* and *societal embedding* in the curriculum (flexible learning routes are left aside here). Thus, we aim to support and encourage or strengthen programmes in their mandate to realise curriculum development at the level of learning outcomes, content and student assessment. Six steps are directive in this respect: 1) Decide on your team, 2) Update your vision, 3) Scan your curriculum content, 4) Design and develop, 5) Implement and 6) Evaluate.

The Faculty of Medicine and Health Sciences is also fully committed to future-proof education and opted for translating the Ghent University vision into a faculty vision and strategy for future-proof education. The faculty developed its own *framework with eleven learning outcome domains* (in Dutch) that reflect the faculty-specific emphases. To ensure broad-based support, this framework was developed in close collaboration with all the programmes within the faculty and with Ghent University's central services. In addition, a scenario was created to outline the range of support options offered within the faculty.

What are the main conditions for success?

- Close collaboration between central and decentral levels; resources from the Higher Education Advancement Fund to realise the developments.
- The central methodology integrates the *constructive alignment* principle in its approach (learning outcomes, instructional formats and evaluation formats).
- Programmes working with the central methodology are given autonomy to make their own choices within a clear structure.

What challenges did we face and how did we cope?

Ghent University offers a long-standing range of training options for teaching staff. The future-proof curricula project has generated exceptional collaboration between **central services** and faculties, revolving around **programmes and programme teams**. The size of the university posed quite a few challenges in this respect. Each faculty has a unique character; the extent to which they are open to this collaboration differs from one faculty to the next. Yet we managed to develop, in an iterative manner, methodologies that were appreciated by the eleven faculties and that enabled them to translate the central framework to the faculty context.

Currently, a major challenge is to keep the narrative alive in the eleven faculties and get it extended to the programme level. The translation of the Ghent University frameworks within the Faculty of Medicine and Health Sciences is a significant practice that sets the tone for other faculties. The Faculty of Psychology and Educational Sciences is planning to follow the lead of the Faculty of Medicine and Health Sciences and elaborate its own inspiration framework.

"The interaction between central and faculty level makes a powerful and inspiring narrative, in which you build on one another's work; it is no one-way traffic." *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Design"* and *"Development"* phases in Chapter 3.

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Want to know more?

- *https://onderwijstips.ugent.be/en/tips/generieke-competenties/*
- *https://onderwijstips.ugent.be/en/tips/interdisciplinariteit/*
- *https://onderwijstips.ugent.be/en/tips/maatschappelijke-verankering/*
- *https://onderwijstips.ugent.be/en/tips/stepping-stones-voor-internationalisering/*

5.11 Curriculum innovation & Support for teaching staff at Vrije Universiteit Brussel (VUB)

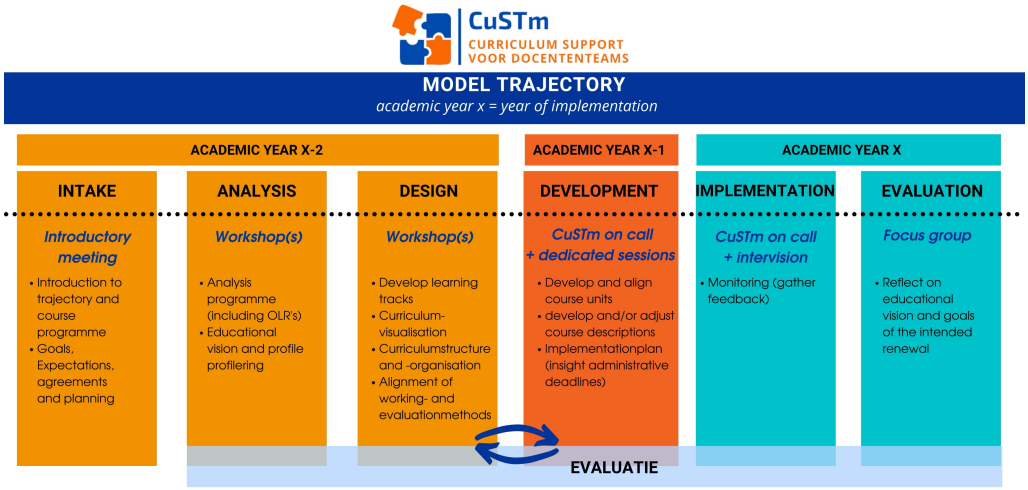
What did we intend to address? Why did we consider that important?

Vrije Universiteit Brussel aims to ensure and support educational quality, with a pivotal role for programme teams. The "Curriculum Innovation & Support for Teaching Staff" (CuSTm) methodology ties in with programmes' need for professionalisation and support tracks. For example, CuSTm supports programmes in the development of future-oriented and flexible curricula, within the outlines of the revised educational vision (2023). Two support initiatives with different lines of approach were rolled out, with the aim of supporting programmes and staff (teacher teams) in the development and implementation of future-proof curricula: (1) the CuSTm procedural support to teaching staff, and (2) the curriculum innovation mandates.

How did we work on this? What results have we achieved?

Initially, a **future-proof revised** *educational vision* for VUB was consolidated into an integrated vision document. In this vision document, VUB positions itself as an *Urban Engaged University*. The vision encompasses five commitments (i.e. five pillars) to the students, in addition to seven VUB-specific ingredients which programmes can use to "season" their curricula "to taste". These ingredients are: (1) Research-informed didactics, (2) Interdisciplinarity, (3) Student ownership, (4) Thoughtful blend, (5) Multilingualism, (6) Open, co-creative education and (7) Lifelong learning.

To introduce this revised educational vision in educational practice, the **CuSTm support methodology for programme teams** was designed, based on the ADDIE model. For each of the phases in this model, one or more workshops were elaborated, founded on scientific literature relating to curriculum design and renewal. This combination of phases constitutes a trajectory that programmes complete at their own pace, geared to the goals and requirements set down in their strategic plans. Over the academic year 2022-2023, the support methodology was assessed and evaluated by five VUB programmes. Among other things, they addressed vision development, learning pathways, educational output and the visualisation of and coordination within curricula. The methodology has since been incorporated into the range of support options available for curriculum design and restructuring.



Example: CuSTm support for *Philosophy & Moral Sciences* (in Dutch) programme: Following a large-scale curriculum reform, the programme – as outlined in its strategic plan – intended to fine-tune its profile and monitor the revised curriculum content. The CuSTm support team set up sessions, including sessions on defining an educational vision, coordinating the educational vision and the programme profile within the curriculum, and optimising instructional and evaluation formats in relation to the individual programme components. This enabled the programme to enhance the substance of its focus and relevance.

Example: *Testimony by Prof. Dr Tim De Troyer, about his experience with the CuSTm support methodology (only available in Dutch).*

Another way to develop future-proof curricula in line with the revised VUB educational vision involves the **curriculum innovation mandates**. These mandates create capacity (time and space) among programmes and teachers to implement relevant innovations in the curriculum, develop educational competences and engage in the exchange of expertise with colleagues. During the academic year 2022-2023, ten projects were carried out by 24 mandataries. The time made available among the mandataries impacted the future proofing of at least fourteen bachelor's and ten master's programmes at VUB. The mandataries participated in three peer review sessions, focused on the exchange of mutual expertise. A new round of curriculum innovation mandates will commence in the autumn of 2024.

Example: Curriculum innovation mandate for Psychology programme - The Psychology programme released one teacher for 0.5 FTE for the duration of one year, to optimise the programme curriculum. To this end, an *adapted programme vision* (in Dutch) was initially elaborated, along with revised learning outcomes. Furthermore, the teacher elaborated three learning pathways with a focus on academic skills, clinical skills and self-reflection. With these innovations, the programme intends to impart more soft skills and professional competences to students.

Example: Curriculum innovation mandate for Faculty of Engineering Sciences - within the faculty, several teachers were released to work on the curricula in a cross-programmes manner. The team committed to increasing the appeal of three bachelor programmes and embedding a remediation track in the curriculum of the first year of the bachelor programmes. They developed and implemented a faculty-wide vision on blended education, enhanced societal relevance and adapted the curriculum content to have students from the three bachelor's programmes collaborate on sustainability. *In this video, teachers working under the curriculum innovation mandate report on their experience.* (in Dutch)

What are the main conditions for success?

- The combination of a central vision and bottom-up ownership of programmes, reflected in the support methodologies.
- Encouraging shared leadership and shared responsibility within a team of teachers.
- The importance of group cohesion. Ice breakers foster group dynamics, as do shared work and reflection moments.
- The working sessions during the CuSTm support processes are always output-oriented and seek to achieve actual results.
- The applications for the curriculum innovation mandates were submitted and supported by the programmes and faculties.
- The curriculum innovation mandates allowed teachers the sorely needed time and space to work on curriculum design and renewal.

What challenges did we face and how did we cope?

The effective implementation of plans that have been drawn up remains a point for attention. In this respect, encouraging shared responsibility and shared leadership within the programme is important. VUB continues to be committed to "*Engaged Leading*" and the development of (educational) leadership among academic staff. In addition, we continuously pursue output-oriented and action-oriented working methods. Familiarising programmes with and actively supporting them in administrative procedures is also conducive.

The second challenge involves the timely and active involvement of relevant stakeholders in the curriculum design and restructuring process. Such stakeholders are alumni, the professional field and, in particular students. We regularly encourage programmes to involve stakeholders, but the decision is always theirs. Experience shows great value in what students contribute when they are enabled to participate in the innovation process as equal partners.

"The methodology uses a wide range of concrete tools, in which a great deal of expertise has been amassed. These tools are essential for teachers to reap the rewards of the sessions in the short term. They are very inspiring and concrete (inspiration sheets, concordance tables, etc.)" *(quote from the system-wide analysis session)*

To find out how the above practical example is situated within the ADDIE model, read the *"Design"*, *"Development"* and *"Implementation"* phases in Chapter 3.

Contact

- *https://www.vub.be/en/studying-vub/our-education*

Want to know more?

- *https://www.vub.be/en/studying-vub/our-education/vision-and-policy*

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6 Practical examples of international peers

6.1 Coaching to acquire generic and employability competences at Maastricht University

What did we intend to address? Why did we consider that important?
Generic competences and employability competences, such as teamwork and leadership skills, but also flexibility and learning ability, are in increasing demand among employers and help students in the transition from school to work. In addition, as a result of the ever-changing work environment, the knowledge students acquire in the education system is rapidly becoming out-dated. Workplace changes and innovation proceed at a pace with which education institutions cannot possibly keep up. Generic and employability competences enable students to adapt to this changing work environment and turn them into future-proof lifelong learners.

How did we work on this? What results have we achieved?
Higher education offers students many opportunities for developing such competences, for example, through work placements in which students gain a wide range of work experience. In order to let students optimally benefit from opportunities, students must reflect on the experience gained. In many cases, support is provided in the form of a portfolio in which students can record their experiences. However, to properly reflect on these experiences, they also need a coach.
If students perceive a portfolio as intuitive and relevant by students, teachers and teachers and mentors the workplace, it will help the coach to encourage students' critical reflection. This is, for example, the case for the *MyCompass* portfolio used by Odisee UAS.

In that same spirit, Maastricht University is developing a coaching track for master's students. This track is aimed at supporting students in the development of employability competences and facilitating their transition from school to work. The coaching track spans an entire academic year. Students select four competences that they would like to develop. For each competence, they formulate one or two learning goals per educational period. Throughout the year, students keep a portfolio in which they outline their pursuit of these learning goals.

Students are assigned a coach within the university. Each coach coaches six students in total. Three times a year, each student will have an individual meeting with their coach to discuss their attainment targets and development. In addition, twice a year, all six students will collectively meet with the coach in a team meeting. The team meetings are focused on peer-to-peer coaching rather than individual coaching. The main purpose of the coaching track is not for the students to meet the attainment targets, but rather for them to learn to reflect. Once students appreciate the need for and the point of reflection after the coaching is phased out, and once they are capable of autonomous reflection or of finding their own professional sounding board, we consider them capable of independent continuous development. They have become lifelong learners.

However, a coach is more than someone who teaches you to reflect. Students can always fall back on the coach if they feel the need for a professional sounding board. Once they enter the workforce, we consider these former students capable of autonomous reflection and independent continuous self-development. At the workplace, however, a good coach will also be useful for new employees.
Research has shown that a coach encourages students, both directly and indirectly via reflection, to develop such employability competences (Nuis et al. 2024; van der Baan, Nuis et al. 2024). Research has also shown that coaching in higher education teaches students reflection skills, and that reflection becomes a habit for them. According to interviews with graduates who had been coached at university, they are able to reflect in the workplace and to ask themselves the reflective questions that their coach asked them at university. Coaching thus provides students with the tools for continuous self-development (Van der Baan et al. 2024).

What are the main conditions for success?

- The coach matters! Students indicate that a coach encourages them to reflect. The coach creates a safe environment in which students can speak their minds.
- Students decide what to work on, not the coach. The coach provides autonomy support.
- Together with the student, the coach identifies challenges, but more importantly, the talents of the student.

What challenges did we face and how did we cope?

Meaningful reflection and coaching can only be achieved once implicit incorrect biases have been removed:

- When it comes to reflection, are students and teachers talking about the same thing? Based on previous learning experiences, students tend to associate reflection primarily with looking back on what went wrong. Thus, reflection reports come across as a long list of shortcomings. Students do not like this and learn little from it; they sometimes refer to such reflection as "stirring the shit". Alumni make ideal ambassadors to explain what reflection actually is and can be.
- In the beginning, students and their environment often perceive reflection as "busy work" or as a "must" to be ticked off, which results in socially desirable writing.

A coach can help students in several ways:

- Also focus on students' talents and encourage them to not only look back, but also look ahead.
- Get students to decide what to reflect on and, especially, why they want to reflect on that. What is the purpose of reflecting on this?

"Perhaps we overestimate the importance of future-proof curricula. Perhaps we should just attempt to future-proof our students by teaching them the habit of proper reflection and contacting a coach at the appropriate times." *(quote from the system-wide analysis session)*

Contact

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Want to know more?

- *Coaching op de grens van opleiding en werk* [Coaching at the interface of education and work] (*https://www.lannoo.be/nl/coaching-op-de-grens-van-opleiding-en-werk*). This is a popular book on how coaches can encourage reflection and the development of competences with students and beginning employees.
- Two interviews about coaching practices at Maastricht University:
    - *https://www.maastrichtuniversity.nl/news/study-work-how-do-we-ease-transition*

More background on the studies:

- Nuis, W., van der Baan, N. A., & Beausaert, S. (2024). Mentoring students in higher education for reflection and development of employability competences: a pre-test post-test design. Education + Training, 66(4), 408–430. *https://doi.org/10.1108/ET-07-2023-0290*
- Van der Baan, N., Beausaert, S., Gijselaers, W., & Gast, I. (2024). How does career coaching in higher education help graduate employees adjust to the workplace? Higher Education, Skills and Work-Based Learning. *https://doi.org/10.1108/HESWBL-10-2023-0292*
- Van der Baan, N., Nuis, W., Beausaert, S., Gijselaers, W., & Gast, I. (2024). Developing employability competences through career coaching in higher education: supporting students' learning process. Studies in Higher Education, 1–20. *https://doi.org/10.1080/03075079.2024.2307976*

6.2 Teacher-directed educational innovation at Utrecht University

What did we intend to address? Why did we consider that important?

The *Centre for Academic Teaching and Learning* (CAT) clusters all the activities within Utrecht University aimed at educational innovation, staff development and educational scholarship. CAT aims to bolster future-proof education by building on long-term investments in the enhancement, recognition and appreciation of academic education. Among other things, CAT is committed to the autonomy and knowledge enhancement of teachers and to investing in a close-knit education community of colleagues performing teaching, research and coordination tasks.

How did we work on this? What results have we achieved?

For each phase in a teacher's career, CAT offers short workshops and longer courses aimed at staff development and educational innovation, ranging from workshops on "how to give your first lecture" to one-year courses about "educational leadership". One of the main strategies pursued by CAT is commitment to the autonomy and knowledge enhancement of teachers and to investing in a close-knit education community of colleagues performing teaching, research and coordination tasks.

In concrete terms, this means that the development offer is based on the following principles:

- The offer is aimed at educational innovation and professionalisation of teachers, by enhancing their knowledge and skills pertaining to teaching, educational topics and student assessment.
- Course participants work on an innovation or implementation project of their own, within their own programmes, for which they themselves are responsible. Scholarships provide teachers with time and space to engage in educational initiatives of their own.
- The development offer allows ample room for networking and informal exchanges between teachers. Beyond the workshops and courses, the teaching community meets in Special Interest Groups and, for example, the annual Education Festival.

What are the main conditions for success?

The above elements (autonomy, competence and involvement) enhance teachers' intrinsic motivation to commit to the enhancement of education (Deci & Ryan). In addition, we offer extrinsic facilitation: we acknowledge and value an academic teaching career through certification (basic and senior teaching qualifications) and options for academic promotion based on educational performance: top-down support and facilitation of bottom-up education initiatives.

What challenges did we face and how did we cope?

The acknowledgement and valuing of academic teaching tasks requires organisation-wide behaviour change. This necessitates a long-term vision and long-term investments.

Contact

- For more information about CAT teacher support: *https://www.uu.nl/en/education/centre-for-academic-teaching-and-learning*

- The CAT teacher development offer is found here: *https://www.uu.nl/en/education/centre-for-academic-teaching-and-learning/teacher-development.*

Want to know more?

- Deci, E., Ryan, R., "Self-determination theory", in *Handbook of theories of social psychology*, ed. van Lange, P., Kruglanski, A., Higgins E. (Sage Publications Ltd, 2012), 416–436.

6.3 SoTL – Teachers study students' learning at Utrecht University

What did we intend to address? Why did we consider that important?

Utrecht University's *Centre for Academic Teaching and Learning* (CAT) supports teachers in the *Scholarship of Teaching and Learning* (SoTL). SoTL means that teachers study their own teaching: do their teaching tactics work, what are students learning? Their SoTL participation fosters a reflective and learning attitude vis-à-vis their teaching. Thus, they will continue to develop themselves and their teaching, which will foster the continuous quality improvement of future-proof education.

How did we work on this? What results have we achieved?

SoTL is a form of practice-oriented research, in which more insight is gained into students' learning by following a pre-selected method, harnessing scientific literature and sharing the results. Such an SoTL study can focus on the evaluation of a particular change (will the introduction of a formative test prepare students better for a summative test?) or on gaining insight (why do students find a specific topic so difficult?). SoTL participation will help teachers to develop a reflective and learning attitude vis-à-vis their teaching. Thus, they will continue to develop themselves and their teaching, which will foster the continuous quality improvement of future-proof education.

Meijerman, I., Wijsman, L., & Kirschner, F. (2024). Adding a scholarly analysis of teaching and learning to SoTL: the development of the hands-on Utrecht Roadmap for SoTL. International Journal for Academic Development, *1–15.* https://doi.org/10.1080/1360144X.2024.2361428

What were the challenges and how did we cope?
Teachers need to learn to do SoTL research, especially if they are not familiar with social sciences methods and paradigms. Furthermore, they encounter other barriers, for example, lack of time and money, or failure of their environment to appreciate their SoTL activities.

That is why Utrecht University supports teachers in various ways when participating in SoTL:

- Time and money are made available through small scholarships for SoTL projects. These projects can utilise the eight-step *Utrecht Roadmap for SoTL*.
- Events are organised at which completed SoTL projects are presented, inspiring other teachers to also embark on SoTL.
- Finally, workshops and courses are offered (at various entry levels) in which teachers learn to design and carry out an SoTL project.

Contact

- More about SoTL support: *https://www.uu.nl/onderwijs/centre-for-academic-teaching-and-learning/educational-scholarship*
- Examples of SoTL projects in Utrecht: *https://teaching-and-learning-collection.sites.uu.nl/project/?fwp_type_of_project=sotl-project*
- Utrecht Roadmap for SoTL: *https://www.uu.nl/en/education/centre-for-academic-teaching-and-learning/educational-scholarship/scholarship-of-teaching-and-learning/utrecht-roadmap-for-scholarship-of-teaching-and-learning*
- Rik Vangangelt, *r.h.a.vangangelt@uu.nl.*
- Meijerman, I., Wijsman, L., & Kirschner, F. (2024). Adding a scholarly analysis of teaching and learning to SoTL: the development of the hands-on Utrecht Roadmap for SoTL. *International Journal for Academic Development*, 1–15. *https://doi.org/10.1080/1360144X.2024.2361428*

6.4 Toolbox based on the *Inner Development Goals* at the University of Amsterdam

The *Transition Makers Toolbox*, based on the *Inner Development Goals* (IDG) framework, is a valuable tool for teachers and curriculum developers developing future-proof education. Now that science and society are becoming increasingly intertwined, universities need to equip students with not only knowledge and skills within their own discipline, but also with insight into the societal and moral implications of their action. This requires a balanced approach, integrating cognitive and affective learning.
The Toolbox, collectively developed by teachers from all over the Netherlands, offers ready-to-use learning activities and student assessment formats, divided into five dimensions, that encompass 23 skills. Selecting the intended attainment targets will provide teachers with access to the instructional materials. This tool supports the personal development of students and ensures that they are prepared to tackle complex societal challenges.

In higher education, the interaction between knowledge, skills and attitudes is crucial. Traditionally, the academic focus was on knowledge transfer, but the needs of modern society require the development of attitudes, especially within the context of interdisciplinary and transdisciplinary education. Such an approach is essential to address complex issues such as climate change, access to healthcare and digitalisation. The IDG framework, a non-profit initiative from Sweden, emphasises the personal skills and qualities that are necessary to tackle the societal issues identified within the UN Sustainable Development Goals (SDGs). In collaboration with other universities in the Netherlands, the University of Amsterdam Institute for Interdisciplinary Studies has created the Transition Makers Toolbox to tie in with this framework. The Toolbox offers extensive learning activities and evaluation methods for higher education institutions, in support of the development of crucial skills such as collaboration, reflection and resilience.

By integrating the IDG framework into their curricula, teachers can help students cultivate the vision, leadership and skills that are needed to realise societal changes. This holistic approach not only prepares students for understanding the world, but also for actively shaping the world towards a sustainable future.

Want to know more?

- *Home - Transition Makers Toolbox*

7 Looking back and looking ahead

The previous chapters reflected the insights gained by the working group in terms of content. At the end of this publication, NVAO and the working group would like to briefly look back on the process. Concurrently, they are looking ahead: after all, future-proof education features a horizon, but no finish.

The large number of participants in this system-wide analysis has demonstrated that "curriculum development & future-proof curricula" is a hot topic among higher education institutions. Both universities of applied sciences and universities were represented, with a broad spectrum of contributions, each from their own specific contexts.

The working group focused on detecting common threads in the learning needs and the practical examples. Thus, they together determined the desired emphasis within this broad theme. As covering every aspect of future-proof education whilst concurrently creating sufficient depth is quite impossible. Aspects that have not been considered may perhaps be explored further in the future.

Interactivity was key in the exchange between the participating institutions. In consultation with the participants, NVAO had opted for a methodology that generated an open, critical and dynamic exchange of insights, practices and expertise.

This system-wide analysis has produced a particularly great wealth of insights. The working group and NVAO hope that this publication will be successful in sharing the results of the exchange with others, so that the practical examples and insights may also inspire non-participating institutions. The sources and contact details stated are explicitly intended to allow the theme to live on. Consider this an open invitation to avail yourself of this information.

The participating institutions have themselves expressed interest in a follow-up: it is their ambition to consolidate the mutual collaboration in a Special Interest Group (SIG) within the Learning Network of Educational Experts (LNO²) or another format that supports permanent exchange.

Within such a sustainable collaboration, aspects can be addressed that fall outside the scope of the focus selected of the current system-wide analysis. Such aspects can relate to, for example, rapid technological developments in education, such as the use and impact of AI. Change management was also mentioned several times during the exchange, as this is a key driving force behind a flexible organisation and changing programmes.

Finally, increasing collaboration between European higher education institutions is a powerful instrument for future-proof curriculum development. In the peer-to-peer event, the working group therefore considered it expedient to involve expertise from the *European University Initiative* for the development of future-proof curricula. Thus, the working group became acquainted with the "*connected communities"* within EUTOPIA, a *European University Alliance*. In the near future, these European developments will

certainly gain in significance; thus, they constitute an interesting theme for further exchange.

Not everything generated by the completed system-wide analysis can be covered in a single publication. Throughout the process, participants reported the impacts on their own universities, such as internal issues that gained momentum as a result of the exchange, and how bilateral contacts were explored further.

It can be quite interesting to check how the system-wide analysis has actually impacted the institutions and how the participants have transferred the outcomes to their own practices, and by extension, to the institution. Therefore, in collaboration with the working group, NVAO is planning another survey on the impact of the system-wide analysis, following the final event in October 2024. Together with the working group, we are looking forward to further reflections on this topic.

A huge thank you to everyone who has contributed to this system-wide analysis. It is quite promising that the collaboration on future-proof curriculum development will not end here. The insights gained through the mutual sharing of practices in a safe environment constitute a solid foundation for further exchange, in order to continue to build together and collectively continue to support future-proof curriculum development in Flanders.

8 Imprint

System-wide analysis 2023-2024

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Stepping stones for future-proof higher education

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