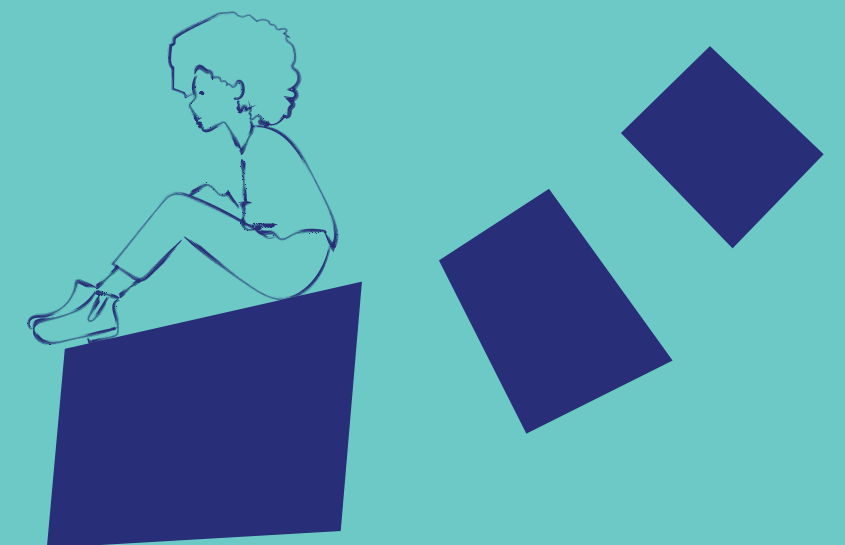


# Designing Aesthetic Transitions

New Education Concept  
Manifesto 2020

Institute for Design (ID)  
Faculty of Architecture & Design, NTNU

# Harmonize your relationship with what's to come and unleash your distinct design potential



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September 2020

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# Summary

The roles of designers have expanded and diversified rapidly in recent decades. One might expect this change to be driven by practice, but it is not. Instead, it is fueled by new design theories that free people to link design thinking and design acting to their own field of expertise.

We don't call our cohorts 'students'. Instead, we prefer design-techne. Reflecting the Ancient Greek philosophical term for making and doing, we want knowledge to grow beyond university and into professional life. **Theory never in isolation. Forever learning. Forever changing, leading the world into new futures.** Practice must keep up with us, not the other way around.

Each design-technee enters design education with distinct talents and interests. To unleash those individual design-technee aptitudes, we must allow them to select or even create their own educational path. We want them to become resilient designers with a personal voice, designing aesthetic transitions.

The means design-technees becoming agents of their own future, informed by our exploration of what the act-of-design is all about.



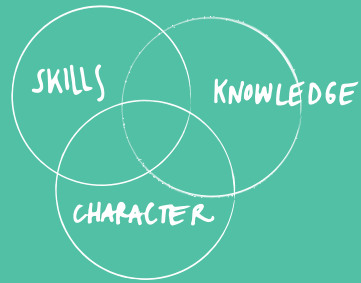
These three concepts lead to a new understanding of the impact that we – the Institute of Design – will have on our design-technees, There must be a clear comprehension of the qualities and features that our new Design Education Concept contains.

The manifesto conveys why the new Design Education Concept is different from today's, and why NTNU will become a benchmark for scientific design schools around the world.

The next step is designing new study programs with our colleagues.

# Design on a meta-learning level

Our ID Design Education Concept is a means to develop oneself as a design-technee on a meta-learning level: in character, in competencies and skills, and in knowledge.



## 'Character'

represents the ability to challenge dominant discourses and to formulate design critique through a conscious expression of attitudes, opinions, and values.

## 'Competencies & Skills'

relate to the proficiencies required to allow design-technees to execute design projects.

## 'Knowledge'

(including procedural knowledge on design processes) is approached through Forward-thinking (Defuturing design philosophy) and Dual Process Theories.

Knowledge will support our design-technees to visualize desired futures that are rooted in scientific theories.

# 1. Meaningful design-action for future society

Do we teach design-technees to become scientific designers or do we teach them the act of scientific design? Shifting focus away from design fields (do you want to become a product designer, service designer, interaction designer, social designer?) creates space, breaking down preoccupations about the impact and significance of design specialisms. By focusing on the act of design and on the role of design-action in future society, design practitioners can work with it, regardless of their specific discipline. In understanding the act of design through our new ID Design Education Concept, we concentrate on the expertise required to design. The approach unleashes myriad new roles design can have in future society and creates new species of designers.

## How to put design into the world or How to take responsibility for the design you put into the world?

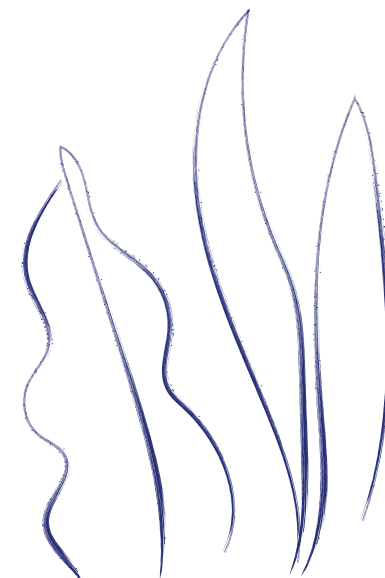
We look at design education as lifelong learning. Our design-technees own their disciplinary and mental development during their studies and careers. By introducing education from other academic departments, we will burst the academic bubble and see the outside world as an educational space. Design-technees can be both laymen interested in probing the act of design or (design) professionals seeking to further their development.

# 2. The Design Taxonomy as our Design Landscape

## Zooming in on design and meta-learning

To fully explain the act of design, we developed the Design Taxonomy<sup>1</sup>.

The Taxonomy is based on the understanding that the desired meaning of any new artefact – physical product, a service, a policy, or a system between these entities – typically unravels in the future, distorted by the time to bring it fruition and its life expectancy. Hence design is in principle a future-oriented, strategic activity. Solving today's problems does not necessarily lead to meaningful solutions for tomorrow. It is more effective to define a desired future, so-called 'defuturing', based on Future-thinking principles. It activates the brain cells that originate conceptual and meaningful thought.

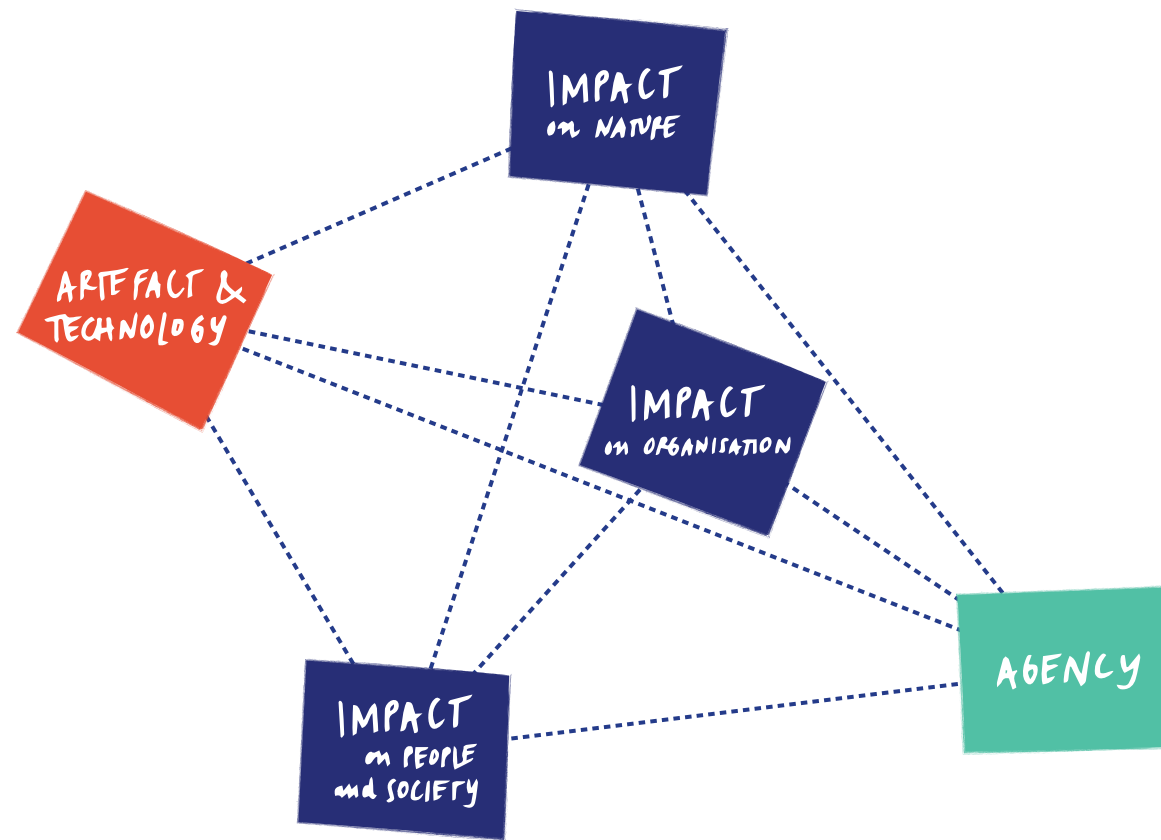


## Designers make meaningful change

Orientated toward the future, the taxonomy arranges design from three different perspectives: **designing for impact, designing artefacts, and agency in design action.**

These perspectives and the interactions between them give insight into the meta-learning components of scientific design: knowledge (and procedural knowledge), competencies and skills, and awaking character to execute the act of design itself.

<sup>1</sup>The Design Taxonomy has benefited from collaboration with Stefan van de Geer and Jos Oberdorf of IDE TU Delft and assessment by Jaap Daalhuizen at Technical University of Denmark (DTU) and Kees Dorst at University of Technology Sydney (UTS).



The figure 1 The 3 dimensional Design Taxonomy model: 5 core meta-learning components

Design research has taught us that the meaning of any design is reflected in its end user impact. Designing for future impact is the Taxonomy's center of gravity.

There are three lenses when looking at designing for future impact: people (and society), organizations, and nature. These can be addressed singularly or as a constellation, embracing the three lenses' inter-relationships and their impact on the biosphere as a whole. If a design-technee has the capability to design for impact, they have the ability to design for anything and everything.

The second perspective is that of the artefact and technology which plays a crucial role. Tangible product, service, policy, or system, it can relate to any domain: healthcare, mobility, fast moving consumer goods, public space, democracy, work flow management, work satisfaction and

biodiversity. It can be designed to fit a short or long-term future, or as a succession of artefact-generations between the present and the future, presented in a roadmap.

Finally, agency. Agency relates to the influence a designer, or a group of designers, stakeholders, or end users wishes to have on design-action execution. The maker's perspective – all kinds of decisions, conscious or unconscious. Which attitudes, opinions, and values underlie the choices made? How can creativity be unleashed? What role is there to play in society?

«A talent for speaking differently, rather than for arguing well, is the chief instrument of cultural change.»  
— Richard Rorty

# Designing Aesthetic Transitions: changing a likely future into alternative new futures through design

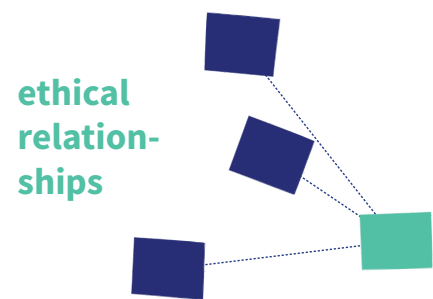
The Design Taxonomy teaches us that we can define the act-of-design as:

- developing your own 'voice' as a design-technee (your own value framework and narrative)
- to be able to communicate and navigate through the world you are part of as a designer,
- by designing 'future impact' (on people/society, on organizations and on nature) elicited by designed 'artefacts' (policies, services, products, etc.) or systems of artefacts
- to change a likely future into alternative new futures (imaginative futures).

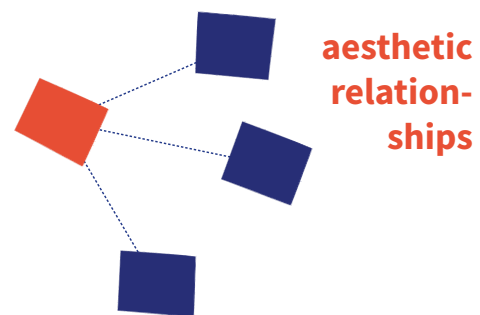


The three perspectives (impact, artefact and technology, and agency) and three impact lenses make up the Design Taxonomy framework. The framework is a tool to understand the essential meta-learning components within scientific design-action. In total, the Taxonomy shows 15 meta-learning components central to the discipline: five core meta-learning components (future impact on people, future impact on organizations, future impact on nature, artefact and technology, agency), and ten relational meta-learning components between them.

We want to emphasize two key relationships. First the relationship between impact and agency, which is ethics.



Second, the relationship between impact and the artefact and technology, which is aesthetics ("Beauty is maximal when a maximum of effect is attained with a minimum of means applied." Boselie & Leeuwenberg, 1985).

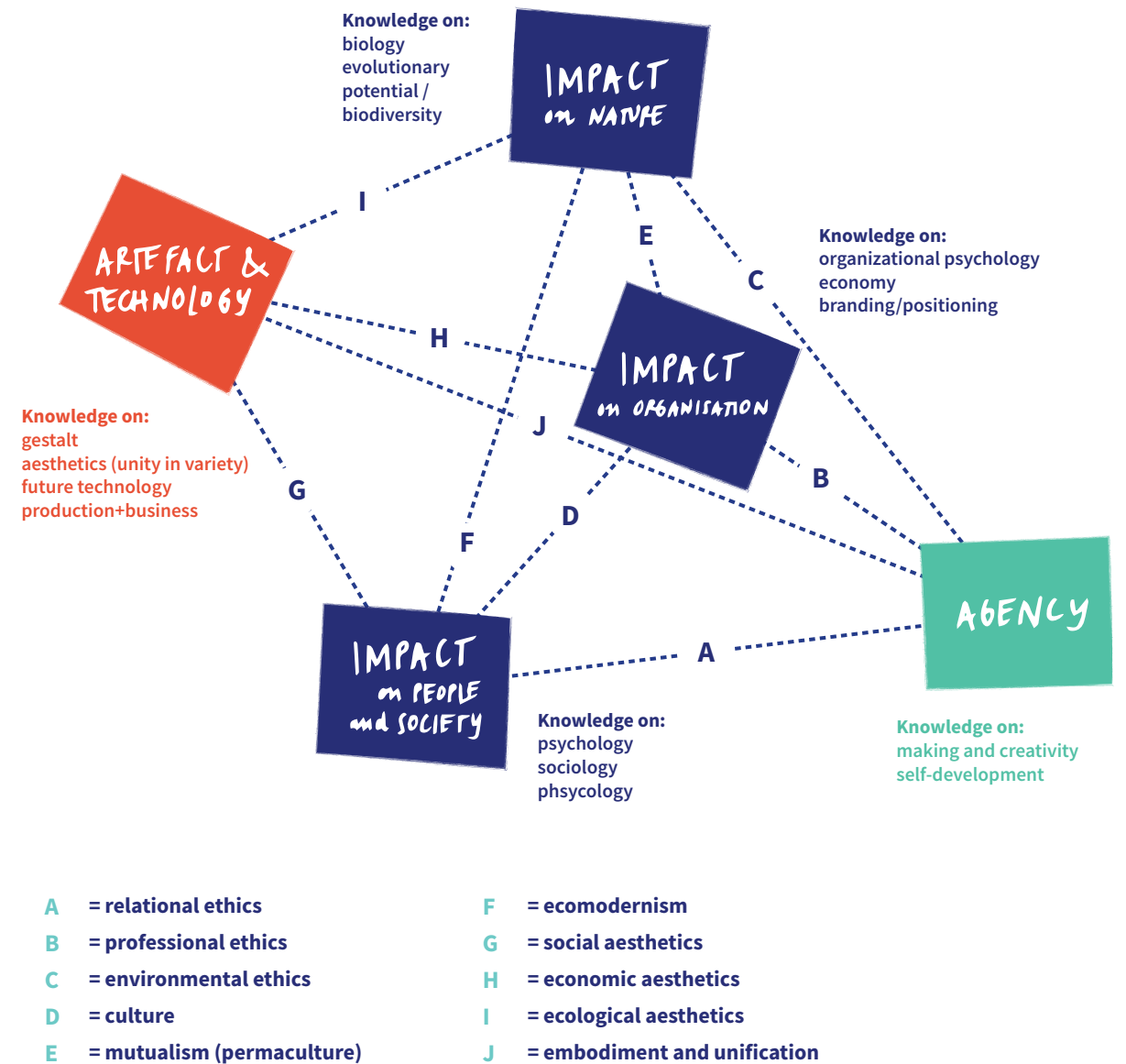


## Artefacts are conduits for transformative consciousness in our future biosphere

The Design Taxonomy, while aiming at the future, is time-independent, and links to the definition of technological science: research and education in relation to the 'act of making', to the making of artefacts itself (means, processes, and methods), and to their underlying phenomena. Technological science aims to benefit the world. Design in its relationship with engineering focuses on giving meaning to new technology. Designers therefore enlarge the possibilities for the application of new technologies, bringing conscious change for the future.

## The Act of Scientific Design belongs to the domain of Technological Science

The Design Taxonomy shows design knowledge and procedural knowledge types that are fundamental to the-act-of-design, including defuturing, perception, psychology, sociology, organizational science, biology, creativity and making, ethics, and aesthetics. All in addition to our artefact and technology perspective teaching product, interaction design, lifecycle analyses, production, business development, strategy and marketing).



The figure 2 The 3 dimensional Design Taxonomy model: 5 core and 10 relational meta-learning components.

We see the Design Taxonomy with all the meta-learning components as our design landscape. By embodying the multiplicity of meta-learning components, design-technees become aware of the breadth and diversity of the design discipline, guiding them to shape futures that makes sense.

By understanding the entire taxonomy, design-technees are free to choose any individual component or component combinations. We want design-technees to take the responsibility

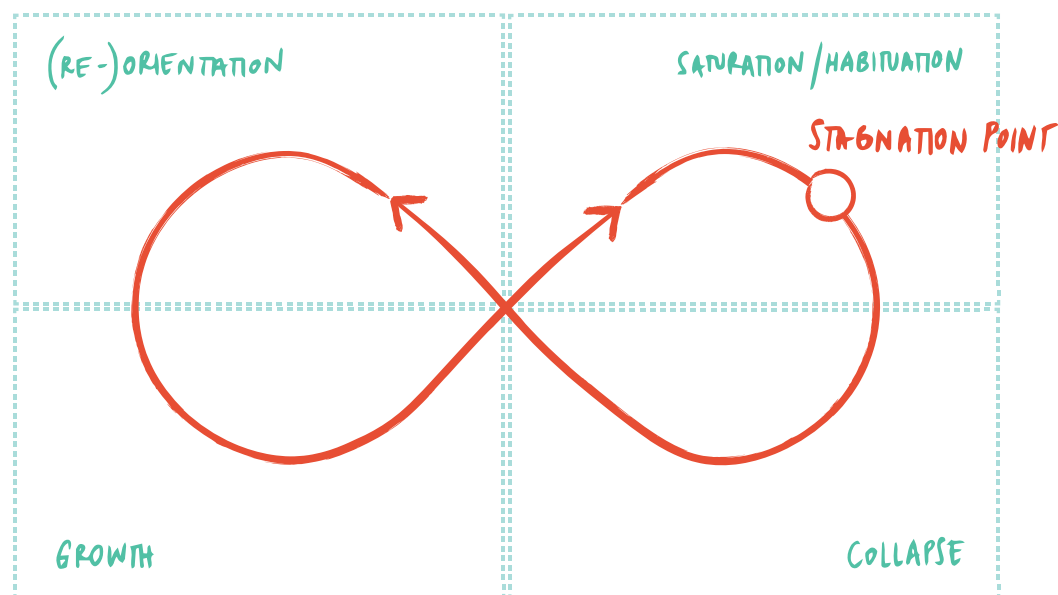
for shaping their own lifelong learning process, which includes freeing them up to change roles during their career. So, someone can become expert at designing future impacts, designing artefacts, or facilitating design collaboration, while fully understanding the relationship to other meta-learning components too. This fosters self-awareness and autonomy.

### 3.

# Our pedagogical principle and its impact on our design-technees

## Lifelong learning is executing an infinite number of adaptive cycles

To allow our design-technees to become resilient makers of desired futures, our education program encourages them to explore their relationship with the full complexity of the design-landscape. Design-action is a continuous follow-up of design-action loops, so-called adaptive-cycles. Every loop starts from 'orientation' and will then evolve into 'growth', 'saturation/habitation', 'collapse', '(re-)orientation' etc. In executing a large number of adaptive cycles, one develops resilience. The adaptive cycle is our pedagogical principle.



The figure 3 refers to the Adaptive Cycle Learning model.

If the inter-relationship between design landscape and design-technee can't move through saturation, we help them to deal with stagnations. We coach them to be unafraid of (temporarily) chaotic design landscapes, and how to manage their own chaotic state of mind.

After numerous cycles, the design technee will master how **to harmonize, by following along or improvising, with a wide and diverse design-landscape in which an infinite number of possibilities-to-design-for are hidden. This will give our design-technees agency over their own development, making them resilient designers, and will enable them to ensure aesthetic transitions.** This is the main objective of our education and differs from our current approach, which is mainly based on knowledge transfer, even in executing design assignments.

### Moving through stagnation is key to the 'act of design'.

As an offshoot educational objective, we empower our design-technees to awaken double-edged character traits that fuel creative action.

These traits represent the design-technee's ability to creatively challenge conventional wisdom and formulate design critique through a conscious expression of attitudes, opinions, and values. These double-edged characteristics make it possible to reframe the design-landscape or one's own mental state and to create an alternative narrative at any time. You can go one way or the other. The design-technee can hence free themselves from stagnation.

«Creative thought or behavior must be both novel-original and useful-adaptive.' ... To be classified as creative, thought or behavior must also be socially useful or adaptive.»  
— Gregory Feist

The Five-Factor model<sup>2</sup> tells us character can be classified in five dimensions: extraversion (E), conscientiousness (C), agreeableness (A), openness (O) and neuroticism (N). Each dimension represented by positive (+) and negative (-) components. Research on the relationship between personality and creativity<sup>3</sup> shows there are 10 character-traits that underly creative behavior.

In relation to this research on creativity and character we want our design-technee to awaken to being both:

- I. **AMBITIOUS (E+)** and **INTROVERTED (E-)**
- II. **DISCIPLINED (C+)** and **DIRECT EXPRESSION OF NEEDS (C-)**
- III. **EMPATHIC (A+)** and **NORM-DOUBTING (A-)**
- IV. **IMAGINATIVE (O+)** and **CONVENTIONAL (O-)**
- V. **EMOTIONAL (N+)** and **STABLE (N-)**

Lifelong learning awakens these ambiguous (not necessarily opposite) traits, fostering disciplinary and mental development. **We call this new overarching approach Adaptive Cycle Learning.**

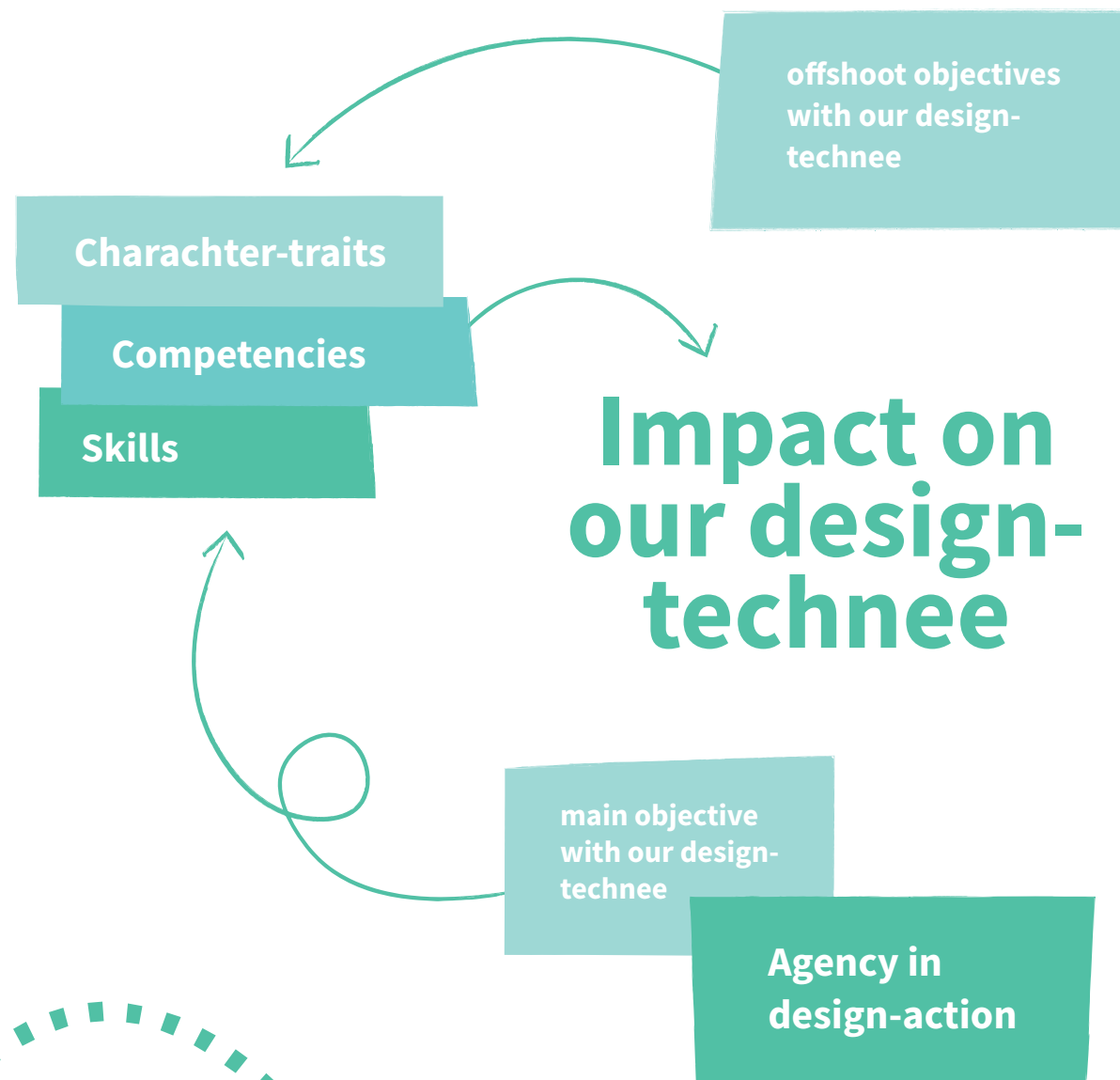
<sup>2</sup>Costa & McCrae, 1995; Digman, 1990, Goldberg & Rosolack, 1994; John, 1990; McCrae & John, 1992.

<sup>3</sup>A Meta-Analyses of Personality in Scientific and Artistic Creativity, Feist, 1998.



Each of these ambiguous character traits to awaken can be linked to competencies to manifest and skills to master (see table 1, on page 14-15). Taken together with the main objective, they form the impact we have on our design-technee (see figure 4).

**The design-technee becomes responsible for fostering her own creative character**



The figure 4 refers to the relationship between objectives with and impact on the design-technee.

# Synthesis

**Synthesis impact I:**

The design technee will have lifelong agency to play a specific role (self-acceptance) as a designer in (future) society, and be aware and capable of the type of leadership they desire in working together with others.

**Synthesis impact II:**

The design technee will become a conscientious scholar/expert in design-knowledge and procedural knowledge components, oriented to both universal laws and local culture.

**Synthesis impact III:**

The design technee will be able to identify with a possible future and take a stand in relation to the underlying values and/or norms she chooses and takes responsibility for.

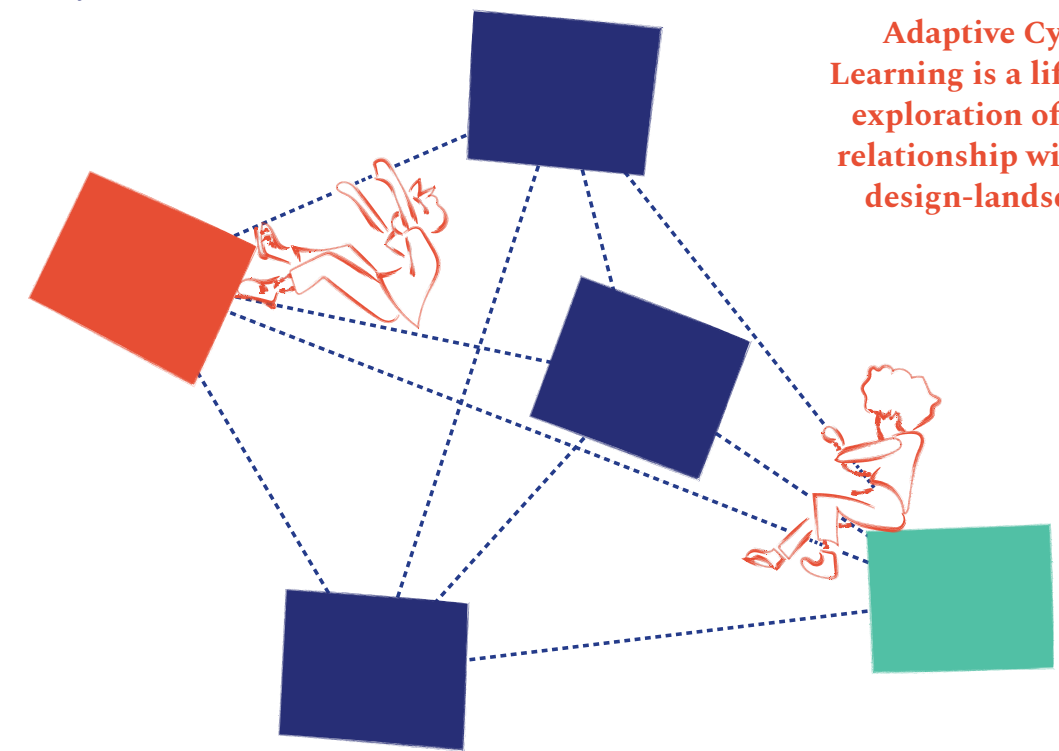
**Synthesis impact IV:**

The design technee will 'openly' propose meaningful transitions/change by putting new and appropriate (= original) impact, artefacts, and technology into the world; Strategically handling the relationship between typicality and novelty.

**Synthesis impact V:**

The design technee will develop their 'own voice' through expressive qualities (feelings, moods, and ideas) in relationship with others.

By achieving these impacts, every ID design-technee will develop the agency to move through stagnations, and thus over their own development, making them resilient designers.



**Adaptive Cycle Learning is a life-long exploration of your relationship with the design-landscape**



## On the relationship between character, competencies and skills:

# Impact on our design-technee

**Main objective with our design-technee:**

**Character traits** to awaken creativity

**Competencies** to deal with complexity

**Skills** to move through stagnation

**Offshoot objectives**

**Impact I on our ID design-technee:**

**Character traits to awaken:** AMBITIOUS (E+) and INTROVERTED (E-)

**Competencies to manifest:** Entrepreneurial (sociable), reflective.

**Skills to master:** Working together, creative-action and storytelling (to unleash oneself from preoccupations).

**Synthesis impact I:**  
The design technee will have lifelong capacity to play a specific role (self-acceptance) as a designer in future society, being aware and capable of the type of leadership required when working with others.

**Synthesis impact II:**  
The design technee will become a conscientious expert in design-knowledge and procedural knowledge components, geared to both universal laws and local culture.

**Offshoot objectives**

**Impact II on our ID design-technee:**

**Character traits to awaken:** DISCIPLINED (C+) and DIRECT EXPRESSION OF NEEDS (C-)

**Competencies to manifest:** Discovering patterns in complexity (bird's eye view); cognitive capabilities (analytic and intuitive).

**Skills to master:** Executing research on universal principles and on local contextual conditions, plus the ability to translate this into models, flowcharts, frames, etc., and emotional intelligence.

**Offshoot objectives**

**Impact III on our ID design-technee:**

**Character traits to awaken:** EMPATHIC (A+) and NORM-DOUBTING (A-)

**Competencies to manifest:** Sensitivity and judgement.

**Skills to master:** Executing roleplay and analyzing design, novels and films; challenging both old and existing values, while developing new values to break tunnel vision.

**Synthesis impact III:**  
The design technee will be able to identify with a possible future and take a stand in relation to the underlying values and/or norms they choose and take responsibility for.

**Offshoot objectives**

**Impact IV on our ID design-technee:**

**Character traits to awaken:** IMAGINATIVE (O+) and CONVENTIONAL (O-)

**Competencies to manifest:** Open to new experiences, risk and change; adaptive.

**Skills to master:** Making new business cases and imaginatively communicating the transition from present to future; listening.

**Synthesis impact IV:**  
The design technee will openly propose meaningful transitions/change via original and appropriate impact artefacts and technology; strategically handling the relationship between typical and novel.

**Offshoot objectives**

**Impact IV on our ID design-technee:**

**Character traits to awaken:** EMOTIONAL (N+) and STABLE (N-)

**Competencies to manifest:** Authenticity, stress resistance (aesthetic self-confidence)

**Skills to master:** Use of expressive tools such as drawing, writing, filmmaking, music, dance, sport, and debating etc.

**Synthesis impact V:**  
The design technee will develop their own voice through expressive qualities (feelings, moods, and ideas) in relation to others.

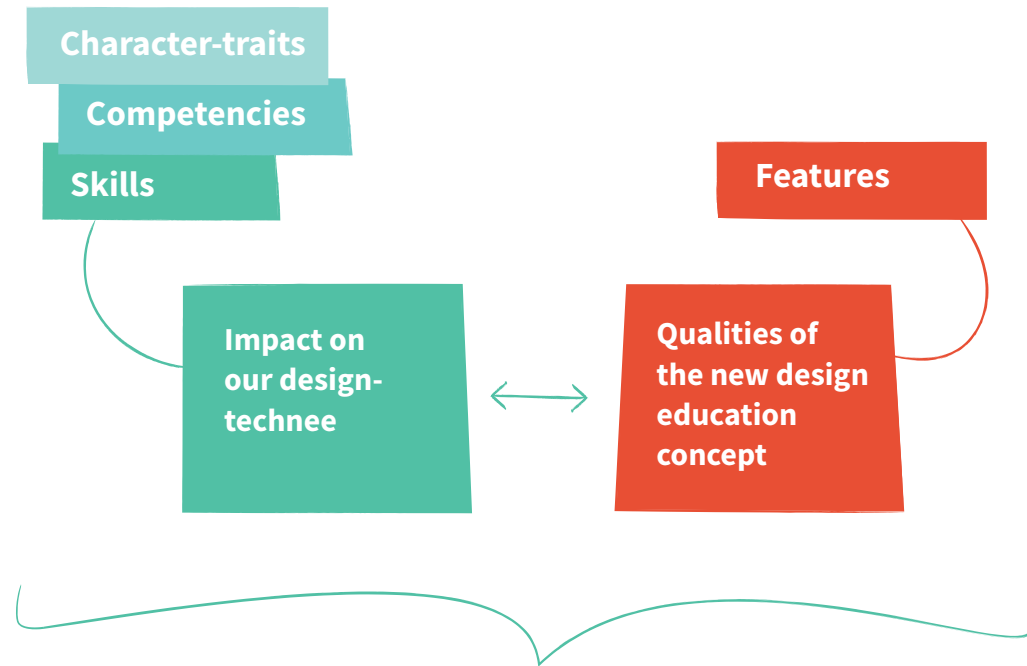
# 4. The New Design Education Concept

## How to harmonize with a wide and diverse design landscape?

We want the future ID design-technee to develop as someone who can awaken double-edged attitudes, opinions, and values, to be empowered to navigate through stagnations in shaping desired futures, in designing aesthetic transitions.

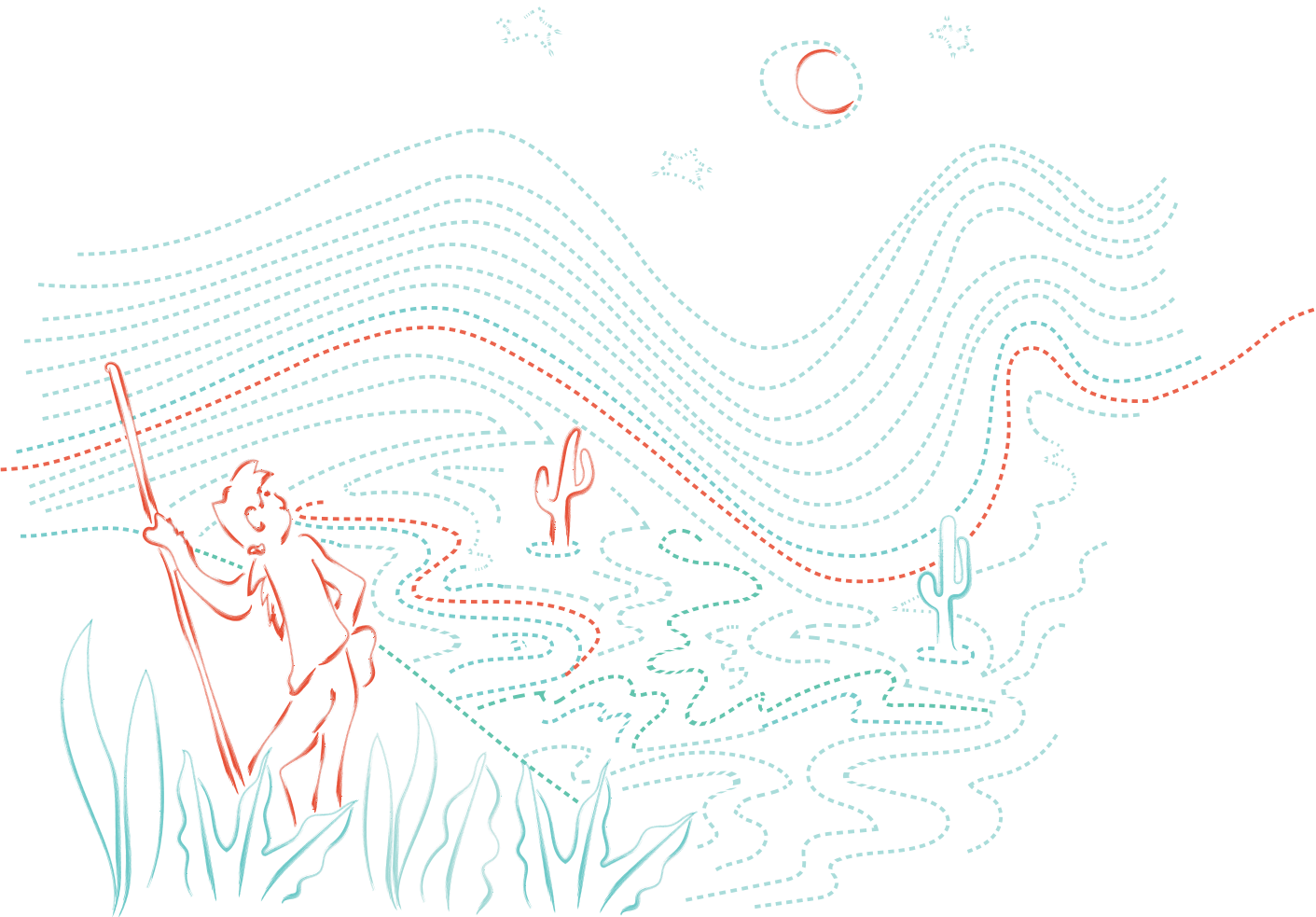
### The analogy for the new Design Education Concept: Singing Songlines

An analogy helps communicate what Adaptive Cycle Learning means for a new Design Education Concept and the qualities and features needed to reach our design-technee objectives (see figure 5).



## Songline interaction analogy

The figure 5 refers to the relationship between impact on the design-technee and the qualities and features of the new Design Education Concept.



Songlines are songs used by indigenous Australians to navigate vast distances. They function as a map, guiding travelers by describing the land.

Songlines give mental resilience and autonomy by reducing complexity.

**Singing the songlines:** As indigenous Australians use songlines to navigate through and communicate with the unknown world around them, our design-technees can use the ID Design Education to navigate through and communicate with the infinite design-landscapes they will be active in.

**Harmonize your relationship with the design-landscape to unleash your unique design potential**

The overall quality of our Design Education Concept is **MUSICAL** in order to address the main objective of our education.

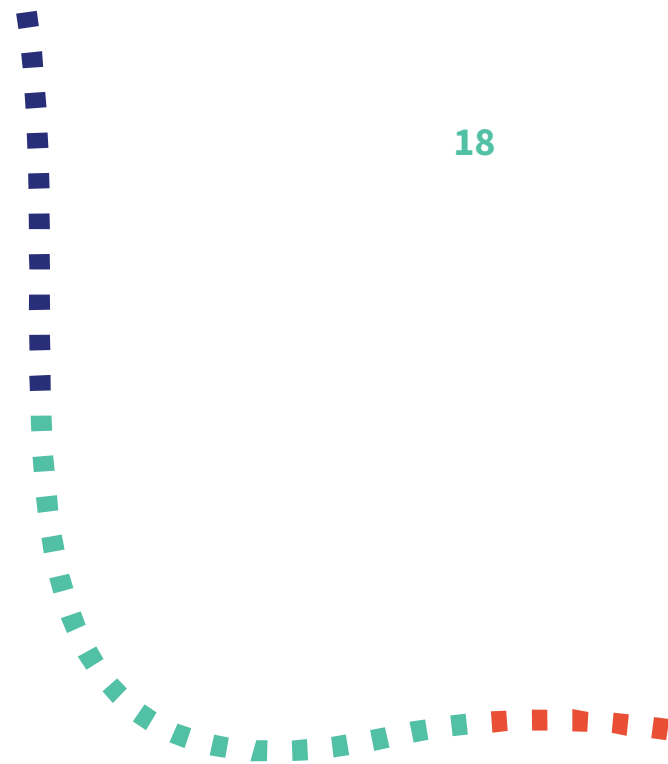
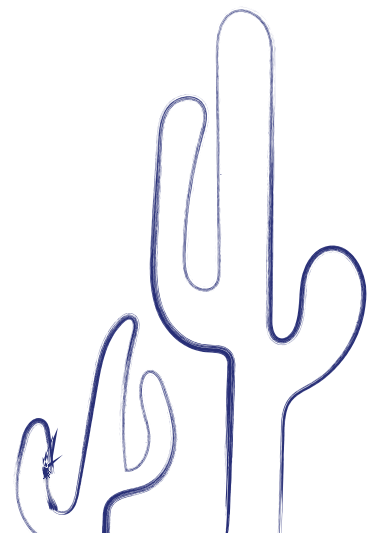
The five offshoot qualities of our Design Education Concept are distilled from this analogy and are linked to personality traits we want to awaken:

- Quality I: **UNLEASHING / LIBERATING**
- Quality II: **MIND BENDING**
- Quality III: **INCLUSIVE / NON-DISCRIMINATORY**
- Quality IV: **FAR SEEING**
- Quality V: **LEADING BY EXAMPLE**

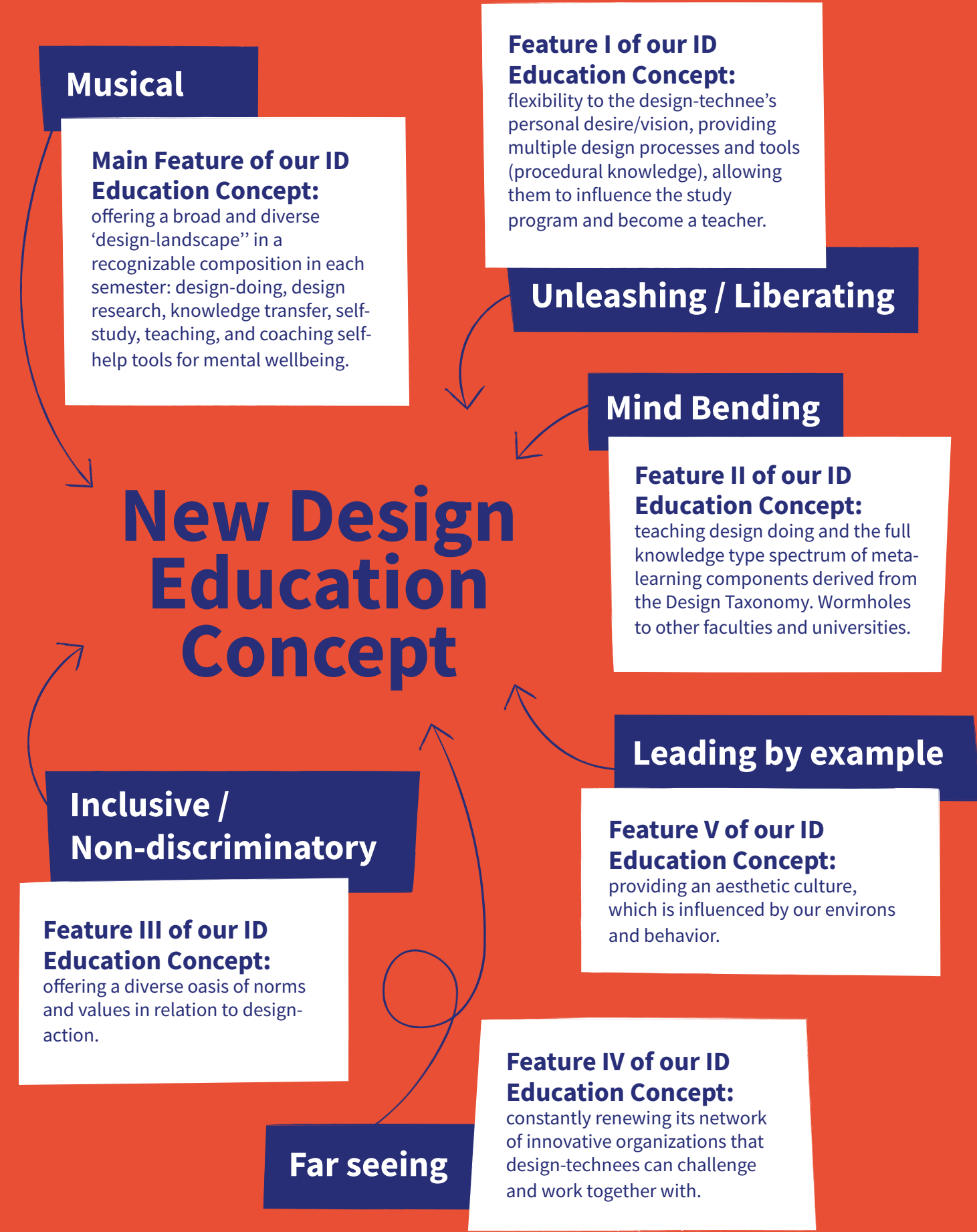
All of these above qualities can be translated into the features of our new ID Design Education Concept:

**The new ID Design Education Concept's musical quality translates into its main feature:** a way to harmonize by following along or improvising with a broad and diverse design-landscape. We offer academic and mental coaching too, helping design-technees break through stagnations.

Additionally, the new ID Design Education Concept offers five offshoot features, which are linked to the five offshoot qualities.



**On the relationship between qualities and features:**



First, our Design Education Concept has a clear overarching theoretical structure (Design Taxonomy) and a recognizable composition in each semester: design-doing, design research, knowledge transfer, self-study, teaching, and last but not least, assessing one's own mental wellbeing. Coaching and self-help tools for mental wellbeing are integral too.

To help design-technees become acquainted to design-action complexity, we ask them to follow what is offered. Later, we encourage them to improvise and even redefine it (through democratic principles). Over the years, the program allows for self-interpretation, organization, and adjustment.

Each semester revolves around a design methodology, which relates to our objective and correlates with specific design knowledge types (Design Taxonomy).

Next to this for each offshoot feature,

#### **Offshoot Feature I:**

The ID Design Education Concept is composed out of edubadges: we will provide courses in accredited units (micro-credentials) that have individual value and can be accumulated to form a full bachelor or master diploma. This makes it easier for design-technees to choose their own path and to participate in lifelong learning. It also attracts other types of design-technees. In addition, the ID Design Education Concept is built on teaching a multiplicity of design methodologies (procedural knowledge). During

their studies, design-technees experiment with several methodologies and choose which they prefer to identify with, i.e. meaningful to the role they wish to play in society. The ID Design Education Concept offers all knowledge types that underlie the stated meta-learning components.

#### **Offshoot Feature II**

Knowledge derived from global (design) research, but also from our own research groups and PhDs. The ID Design Education Concept encourages the exploration of other relevant fields. It gives design-technees freedom to prioritize and tailor paths to their own academic identity. Collaboration with other faculties and universities connects us to state-of-the-art meta-learning components and allows design-technees to bring back knowledge to our own study program.

#### **Offshoot Feature III**

The ID Design Education Concept is unbiased and neutral. It teaches design-technees design-action, without stating what is a good or bad impact to design for. How to deal with the world around them and make technology meaningful is a choice the design-technees make for themselves (within the constraints of legislation).

#### **Offshoot Feature IV:**

The ID Design Education Concept motivates the design-technees to inspire innovative organizations. Working with these organizations, they understand the dynamics of supply chain systems: between suppliers, producers, stakeholders, and end-users, and have a chance to explore how radical or conservative they want to be.

#### **Offshoot Feature V:**

Lastly, The ID Design Education Concept itself and our teaching arena follow aesthetic principles. We practice what we preach.

## Overall Promise of the New ID Education Concept

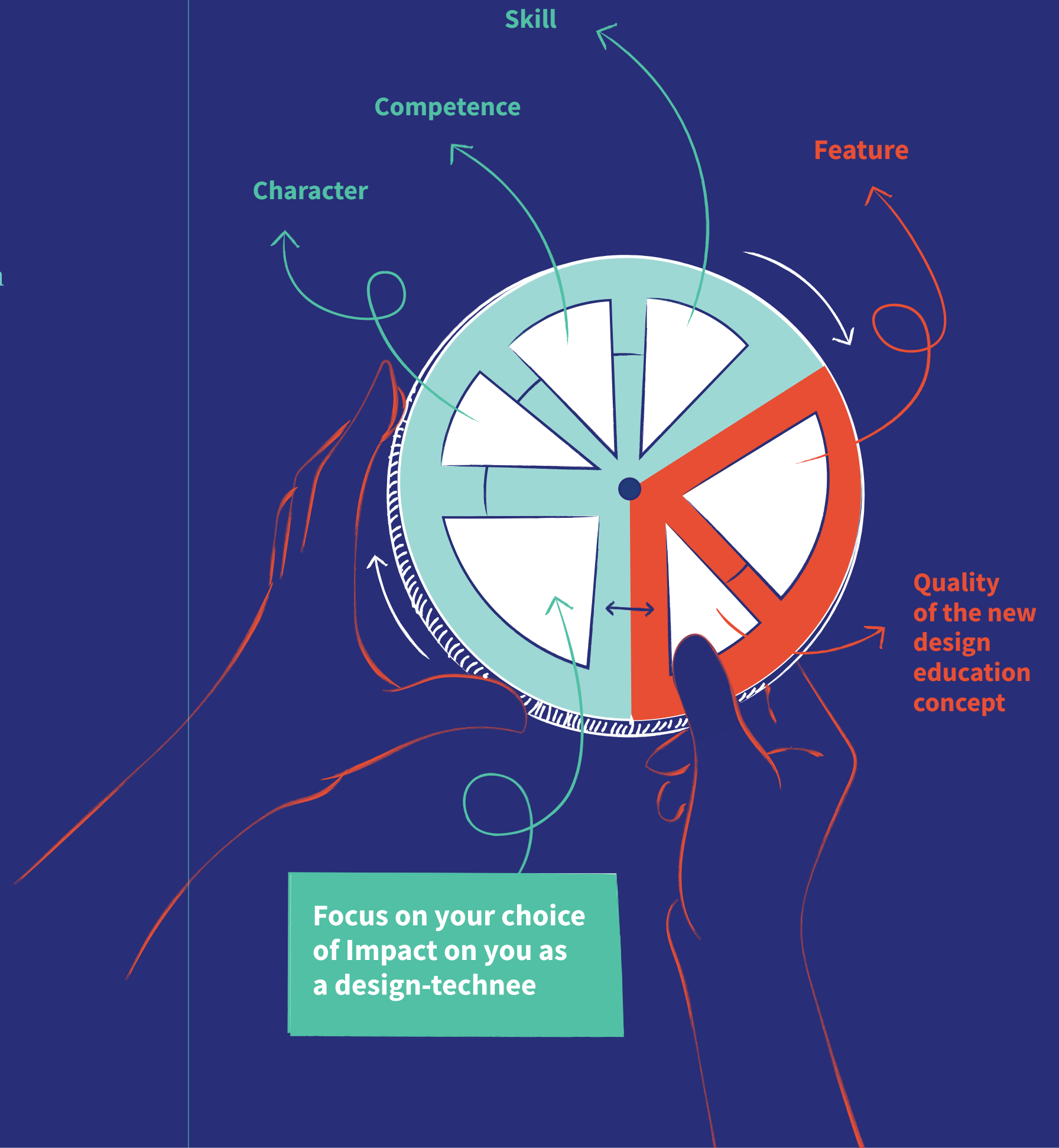
- It is relevant to a much greater number of students because it focuses on teaching scientific design-action (versus the number of students we currently attract by focusing purely on product design and interaction design);
- Its framework gives structure and freedom to study program developers and teachers. They bring their own interpretation and perspective of how to teach character, competencies and skills. How to contribute to the qualities and features of the ID Design Education Concept, and how to translate knowledge types into specific knowledge;
- It allows design-technees to play infinite design roles in the future. And as a design-technee, ultimately, they can still focus on becoming an industrial designer, furniture designer, graphic designer, or whatever society imagines a designer is;
- It stimulates close collaboration with other faculties and universities;
- It creates (through the Design Taxonomy) a strong link between research and education (PhDs give design assignments);
- It asks for design-technees to become teachers too, and study program developers themselves (democratic principles).

## 5. The ID Design Education Concept Instrument

### Playing with the ID Design Education Concept

This Design Education Concept brings together Forward-thinking, the Design Taxonomy, and the pedagogical principle of Adaptive Cycle Learning. The ID Design Education Concept Instrument is a physical tool that filters complex information presented from a chosen point of view (Impact I, II, III, IV or V)). It illustrates the relationship between our objectives for the design-technee and the qualities and features of the Design Education Concept. The instrument also helps design-technees see the different paths to explore.

*The figure 6 refers to the New Design Education Concept Instrument and its way of use.*



## 6. What's next?

We enjoyed working on a new Design Education Concept for the Institute of Design – it makes sense and is relevant to our world.

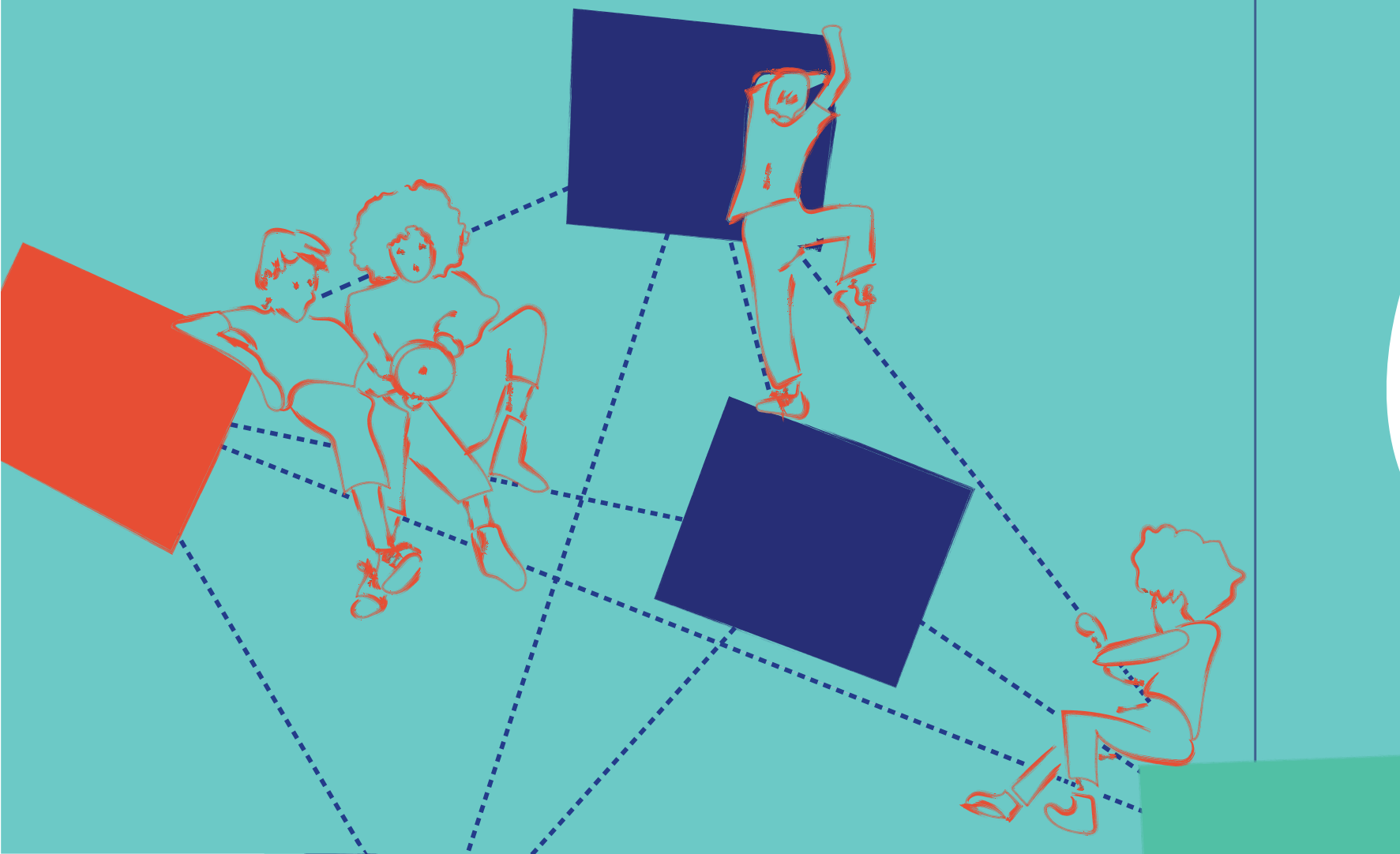
The three concepts (Forward-thinking, our Design Taxonomy, and Adaptive Cycle Learning) helped us determine what we want to accomplish with our design-technees, and understand the qualities and features that our new Design Education Concept must have.

The next step is to make a number of **detailed Study Programs** with those of you in Trondheim and Gjøvik who wish to be involved.

We look forward to making this manifesto a reality, offering design-technees new and appropriate design-education possibilities, enabling them to unleash their individual design potential. We can attract diverse design-technees from all over the world to join us here in Norway too.

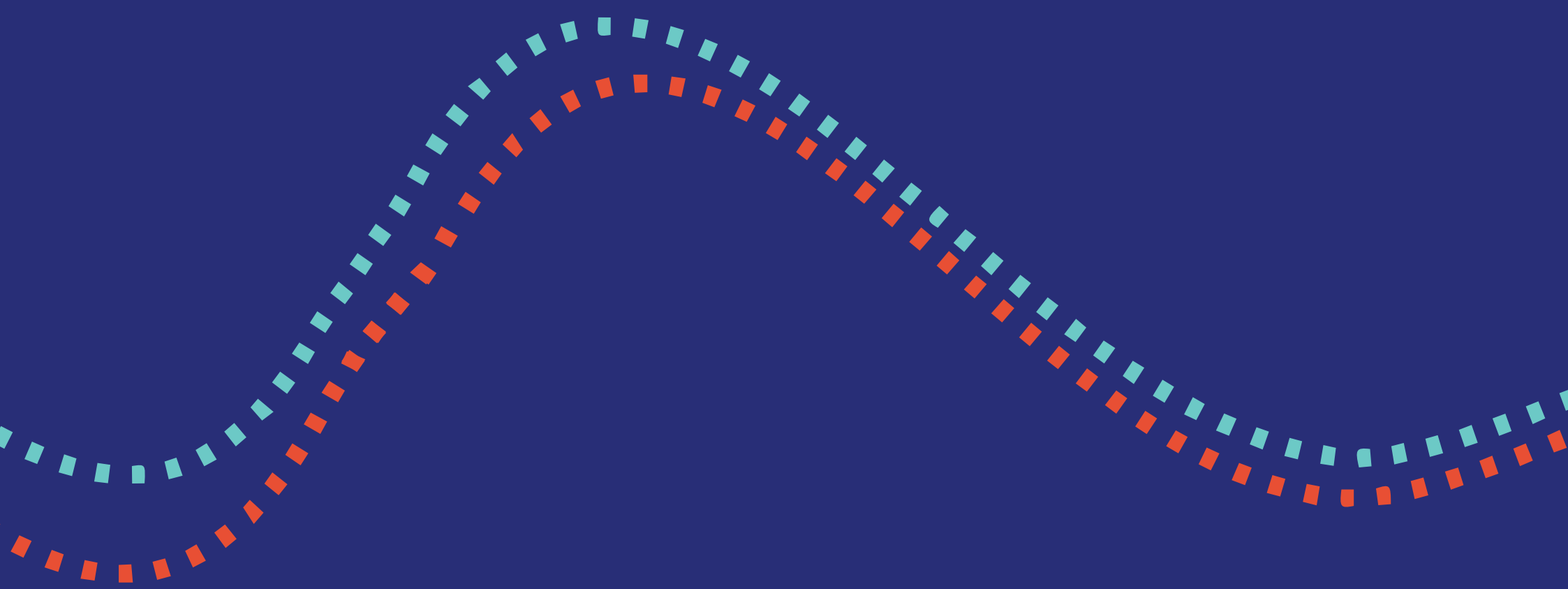
To construct a robust design-education for the future, we had to fully embrace design's full complexity. Not always easy.

But please give it some time. Explore the concepts. Read it a few times. And imagine.  
Johannes, Matthijs, and Trond Are



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