Echo, a concept for self-reflection

By Stein Wetzer

Echo is a reflection of sound that arrives at the listener with a delay after the direct sound.

Echo is a reflection of sound that arrives at the listener with a delay after the direct sound. Some animals use echo to determine their position and navigate forward.

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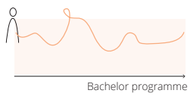
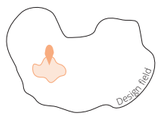
Self-reflection



Navigating



Positioning

Abstract

The faculty of Industrial Design Engineering (IDE) is renewing its bachelor programme due to the fact that as the world changes the profession of design changes as well. For the new bachelor curriculum, to be implemented in September 2020, more flexibility and a focus on self-reflection and professional positioning are aimed for. By reflecting on one's personality and qualities, more understanding of motives and ambitions is created, which results in better study decisions (Mittendorf, 2014). Therefore, reflection can form a steppingstone for navigating through a flexible bachelor and for professional positioning.
During the current IDE bachelor, students use the competence monitor to reflect. This is an online platform which facilitates reflecting on competences using similar questions for every competency. A study of a former graduate student shows that the majority of the students disliked the tool, and it became less and less adopted by coaches and course coordinators (Kingma, 2017).

The aim of this project is *"to design a concept for self-reflection, navigation through the new bachelor and professional positioning for IDE bachelor students."*
The renewal of the bachelor provides the perfect opportunity for this.

A literature study about reflection and motivation formed the basis for the conducted field research consisting of: interviews with students, teachers and experts, current practices from the IDE bachelor and master programme and case studies at the Design Academy Eindhoven, Industrial Design at the TU/Eindhoven and the Gerrit Rietveld Academy.

The literature and field studies show that reserving time in the curriculum, motivation to reflect, learning how to reflect and assessment, are key aspects to be considered for a new self-reflection concept.

To design a concept, multiple idea-generating sessions were conducted involving different end-users (students, IDE staff). The preliminary concept was tested by means of interviews and different prototype tests, resulting in the final concept: Echo.

Echo is a concept for self-reflection, navigation and positioning in the new bachelor curriculum of IDE. It aims to let students explore what kind of designer they want to be, their bachelor path and their design vision. Echo proceeds through the three years of the bachelor consisting of modules with assignments in between. The modules are separated by an semester, this stimulates an overarching reflection, which supports positioning.
Each module consists of a reflection, positioning and conversation element. The elements are filled with different activities like making a collage, expressing who you are as a designer and portfolio and vision workshops. Some modules have a navigation element as well.
At the end of every module, a conversation with the design coach (from the following design course) is integrated to motivate the student. Contributing to the motivation is explaining why Echo is implemented during the first module and workshops concerning how to reflect in the first semester.
Echo itself is not assessed and the way students engage with it is their own responsibility. Though, assessment is integrated by means of using your design vision as an assessment criterium in the bachelor final project. Contributing to the concept, an implementation plan is developed.

Echo was evaluated from multiple perspectives. The evaluation showed that all participant think Echo is valuable in design education and can be imagined into the education of IDE.

Glossary

BCT - *Business Culture and Technique*
DAE - *Design Academy Eindhoven*
GRA - *Gerrit Rietveld Academie*
ILO - *Intended Learning Outcome*
ID - *Industrial Design (at TU/e)*
IDE - *Industrial Design Engineering (at TU Delft)*
MyM - *Manage your Master*
PDP - *Personal Development Plan*
TU Delft - *Technical Univeristy of Delft*
TU/e - *Technical University of Eindhoven*
PLO - *Personal Learning Object*

Thanks

What a path!
I could not have done this on my own, therefore I would like to thank the following people that joined and supported me during this project.

First of all, a special thanks to my supervisory team Froukje, Sjoerd and Sylvia. Thank you for mentoring me. I am grateful that I had the chance to work with you. Thanks for the support, discussions, critical questions and trust.

Thanks for everyone that joined all the co-design activities.
All students, teachers, staff members of IDE and experts outside IDE.
It wouldn't have been possible to do this project without you.

Thanks to my parents for reading, discussions, rearranging, for their kitchen, a place to relax and their tireless genuine enthusiasm about the project.
Most of all their love.

Also thanks to my friends. For dinner, for breakfast, coffee, love, brainstorms, craziness, figs and passionfruits, dancing, for always being there, comma's, playing, hugs and lots of Lelie ice cream. For everything.

Content

1

Introduction

This part introduces the project, its origin followed by the designer and project approach. The faculty of IDE is renewing the bachelor programme. Therein lies the need to incorporate a self-reflection concept. This formed the starting-point of this project.

The study programme Industrial Design Engineering (IDE) exists for almost 50 years. In 2007 the latest bachelor renewal of this study programme was implemented.
As the world keeps changing rapidly, there is a constant change of the design profession (Faculty IDE, 2017). Because of that, the faculty of Industrial Design Engineering aims to change its bachelor programme. An IDE vision group was appointed to write a vision for this change.

Vision Bachelor renewal

"continually reinventing yourself should be in the nature of the designer and therefore be default in the nature of a design school."

- Faculty IDE - Vision group (2017)

Another reason for this renewal is that the current bachelor is a fixed programme with little room for flexibility. In the past few years, it became clear that more flexibility is needed to not only incorporate new courses but also create a more personal bachelor (Faculty IDE - Vision group, 2017).
For the renewal it is envisioned to adopt an active learning culture, which entails that; *"the staff will focus less on teaching and more on coaching, encouraging students through more feedback and reflection."*
Furthermore, the vision describes that when students finish the new bachelor programme, they should be able to position themselves in the professional field.

These three points: a flexible bachelor, professional positioning and reflection are the main focus of this project. These first two can be supported by the last; reflection.
Reflection facilitates personal learning towards the outcome of personal development (Moon, 1999). By reflecting on one's personality and qualities, more understanding of motives and ambitions is created. This results in making better study decisions (navigating through the curriculum). Understanding motives and ambitions can form a base for positioning as well as taking charge of your own learning path (Mittendorf, 2014).
For the reasons mentioned above, reflection can be seen as a stepping stone towards navigation and positioning.

"Experience alone does not lead to learning, but deliberate reflection on experiences is essential in order to learn from it."

- Loughran, 2002

Reflection facilitates learning by improving the conditions that seem to favour learning (Moon, 2006). This is extended by Jasper & Rolfe (2011), Paterson & Chapman (2013) and Schön (1983), who all state that reflection supports the process of continuous learning. Someone's ability to reflect on experiences creates not only learning itself but also an understanding of themselves, their attitudes and behaviours. This allows one to become more critical about their views of practice and the world.

Reflection in education

Different sources state that currently, students reflect because it is mandatory and dislike the act of it. (Mittendorff, Jochems, Meijers & den Brok, 2008; Meijers, Kuijpers & Winters, 2010). Regularly it is assumed that students know how to reflect independently while students often do not know what reflection is exactly and how to do it (Mittendorf et al., 2008). This influences the motivation to do so (Zijlstra & Meijers, 2006). While reflecting, most students do not make the connection with themselves. Often educational activities relating to reflection are not taken seriously and are experienced as a mandatory check mark. (Mittendorff, 2012)

During the current bachelor of IDE, students have to use the competence monitor to reflect. This is an online platform which facilitates reflection on the thirty-nine set competencies for the IDE bachelor. The reflection is facilitated by using self-scoring and asking similar questions for every competency. An example of a competence and question are: design drawing and "What did you learn during this course?"
The tool was not an outright success, see chapter 3.2. A research conducted by a recent IDE graduate student shows that the majority of the students disliked the tool and didn't feel motivated to fill it in. It became less and less adopted by coaches and course coördinators (Kingma, 2017).
Before the competence monitor, there wasn't a set overarching structure for reflection at IDE.

Project scope

This project focuses on how to implement a concept for reflection in the context of the new bachelor program. As Barnett (1997) suggests:
"In order to bring about the state of critical being, the frame of reference in higher education must change towards a focus on the student as a developing person."
Barnett identifies self-reflection as one of the three domains that need to be part of the curriculum of a university.
"Students need the right space, time and support in order to develop in these domains and put their learning into action".

With this in mind, the aim of the project can be seen in the right column. This design will be called "concept" later on in this thesis.

Definitions

During this project the terms, self-reflection, navigation and positioning, are interpreted as:

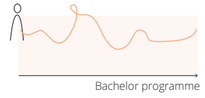
Self-reflection: "reflecting on the learnings and development of the student as a designer and as a person". This is used to look forward, also called anticipatory reflection (van Manen, 1991). The term reflection will be elaborated in chapter 3.1.

Navigating is seen as creating your own bachelor path by making study related choices during the course of the IDE bachelor.

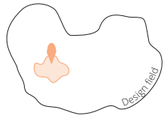
Professional positioning is approached as placing yourself in the professional field of design (for example a career direction).

"to design a concept for self-reflection, navigation through the new bachelor and professional positioning for IDE bachelor students."

Anticipatory self-reflection



Navigating



Positioning

1.1 The designer

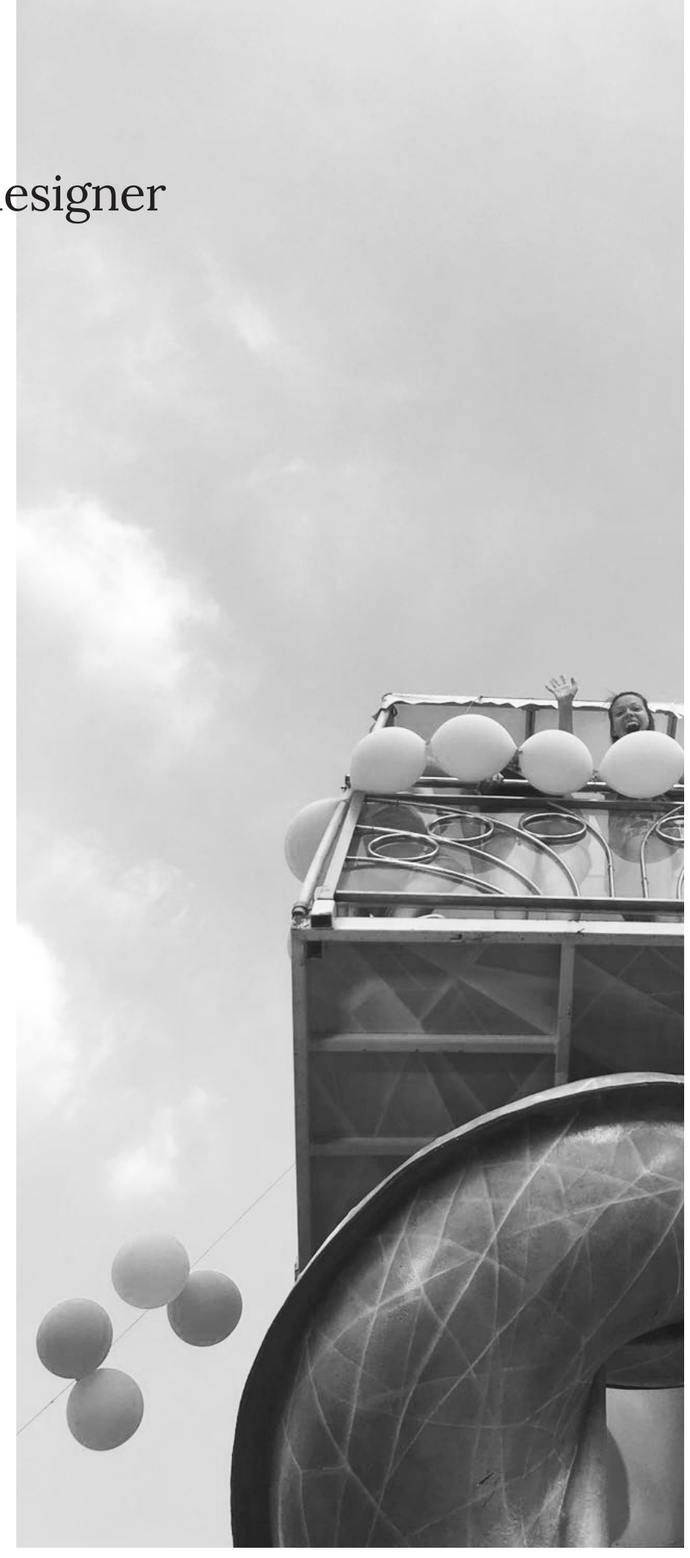


figure 1, the designer

Hello,
I am Stein Wetzer, the graduate student doing this project, see figure 1. In my opinion, a designer often integrates his or her own experiences and beliefs into a project and therefore it is important to know a little bit about me.
First of all, I like reflection, it is in my nature. I reflect consciously and unconsciously every day, maybe even every minute.
As a student assistant, I have been involved in the education at IDE in different ways. I coached first-year students during different design projects, I helped students in the workshop building prototypes and I supported course coördinators with the logistics and content of a first-year bachelor course. Outside the faculty of IDE, I have been teaching dance classes for 5 years to a variety of students.
I like education, I think it is interesting to design education and follow students' processes, helping them reach their full potential.
Also, study choices are familiar to me. From the start of my bachelors I worked for the orientation days and open days of the faculty, supporting pre-students in choosing a bachelor programme.
Though, even more in creating my own study-path towards how I wanted to position myself, navigating is familiar to me. When I started my master at the IDE faculty I found that none of the master programmes covered my interests and goals completely. This is why I designed my own master programme called a free master degree. In this process, I compiled courses and wrote a motivation for why I think I should follow this programme. As this is a quite unfamiliar path, I think I am the only one, it was very exciting. And even more when I look back, I am so fulfilled it was approved.
With this interest in reflection, education and navigation towards a position, I started this project very excited of what would come and confident in the potential value it could offer for students.

1.2 The project approach

The renewal of the IDE bachelor provides the perfect opportunity to develop and implement an entirely new concept for self-reflection, navigation and positioning.
The project to design this concept is divided into three phases: exploration, ideation and implementation.
Gaining information and insights (exploration) which can be used to design a holistic concept fitting its users and context (ideation) and a plan to integrate and use it in the IDE education (implementation). With this structure, it is aimed to design a concept which will actually be used.
The exploration phase consists of a literature study, the context of the bachelor renewal, field research and a design vision resulting in a design brief. This design brief is the starting point of the ideation phase, which consists of idea generating sessions, interviews as well as prototype tests.
During the implementation phase, a strategy to implement the designed concept is created, consisting of development, implementation and iteration, substantiated by interviews.
After designing, the project finalises with an evaluation of the concept followed by an overall conclusion and reflection.
As is characteristic for a design process, actually performing it, was not so linear as described above. This thesis aims to describe it logically instead of chronologically.

Next to the three phases, the approach of this project is from a human-centered point of view.
As I believe that;
"the user is the expert on his/her own experiences" (Sleeswijk Visser, Stappers, van der Lugt & Sanders, 2005), future users like students and teachers were involved via co-designing in different ways in every stage of this project. Co-designing was defined by Sanders and Stappers (2008) as:
"the collective creativity of designers and people not trained in design working together, which can be applied across the whole span of the design development process".

Figure 2 shows which parts can be found in which chapter.
Figure 3 on the following pages shows a table with all the performed co-design activities.

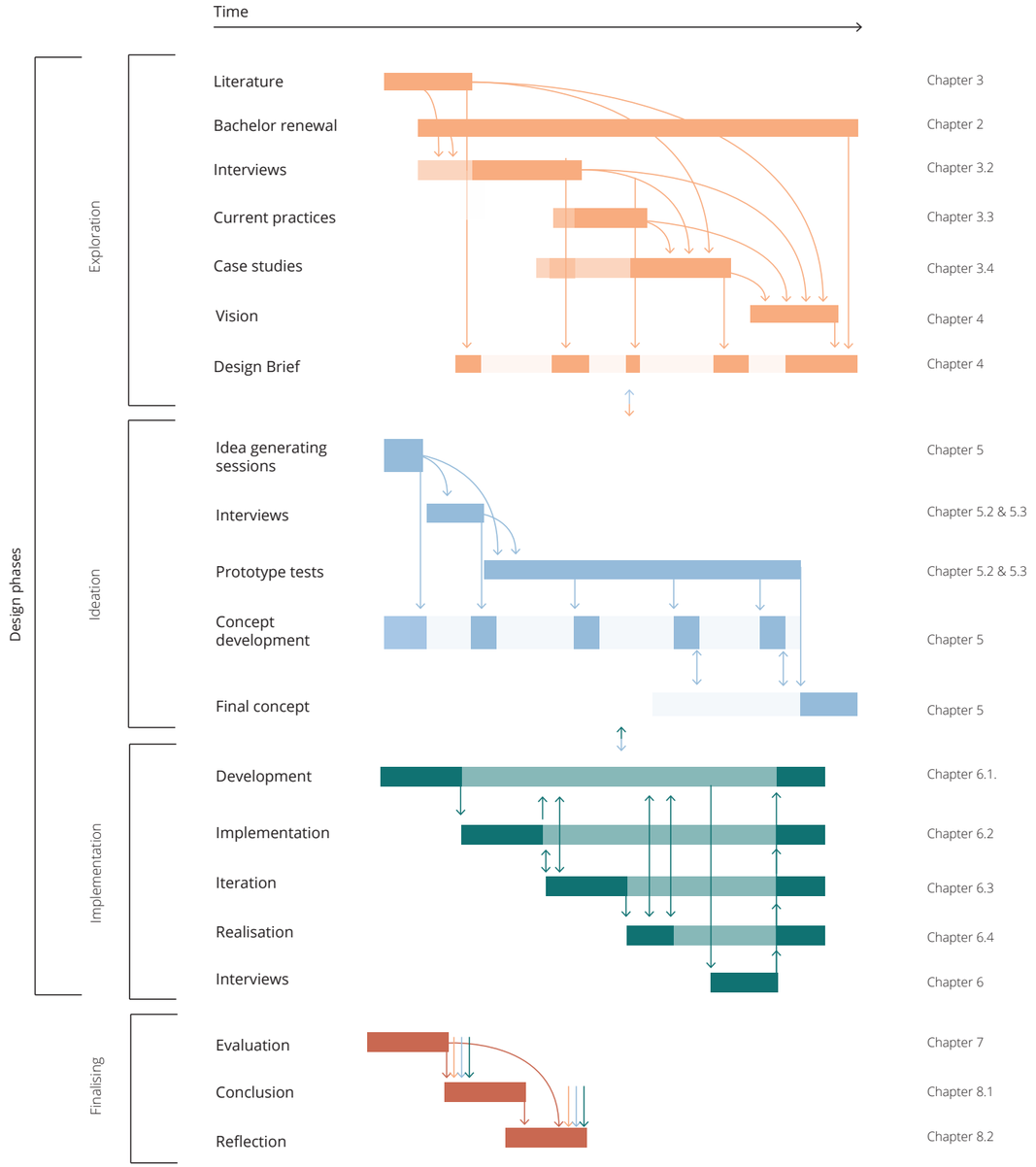


figure 2, project order

Exploration	Semi-structered Interviews	6 IDE students 5 IDE teachers 3 specialists	chapter 3.2
	Semi- structered Interviews	TU/e - teacher & student Gerrit Rietvelt Academy - head basic year & student Design Academy Eindhoven - teacher	chapter 3.4
	Interview	Teacher Haga hogeschool	
	Conversations	Students; bachelor final project tool users	chapter 3.3
	Conversation	Teacher MYM future yourself workshop	chapter 3.3
	Conversation	Course coördinator BCT	chapter 3.3
Ideation	Creative sessions	one with 6 students one with 4 teachers	chapter 5.1
	Semi- structered Interviews	3 IDE teachers	chapter 5
	Prototype test 1; *collages*	4 students	chapter 5.3
	Prototype test 2; *collage + expressing yourself as designer*	3 students	chapter 5.3
	Prototype test 3; *interview master student*	2 students	chapter 5.3
	Prototype test 4; *reflection format*	two times around 20 IDE staff members	chapter 5.3
	Prototype test 5; *read a book*	1 student	chapter 5.3
	Prototype test 6; *create & present your vision*	1 student	chapter 5.3
	Reflection workshop 1	25 students	chapter 5.3
Implementation	Interview	Bachelor coördinator	chapter 6
	Interview	Head of student and educational affairs	chapter 6
Finalising	Reflection workshop 2	10 students	chapter 5
	Interview *Evaluation of Echo*	Teacher Design Academy Eindhoven	chapter 7
	Focus group *Evaluation of Echo*	3 IDE master students, 3 IDE bachelor students	chapter 7
	Focus group *Evaluation of Echo*	6 IDE teachers (variety of departments)	chapter 7

figure 3, field research & co-design activities

2

The bachelor renewal

The new bachelor curriculum forms the context of the concept.
Designing this context is an ongoing project. This chapter describes the process of the bachelor renewal and some results of that process.
It concludes with how the project relates to it.

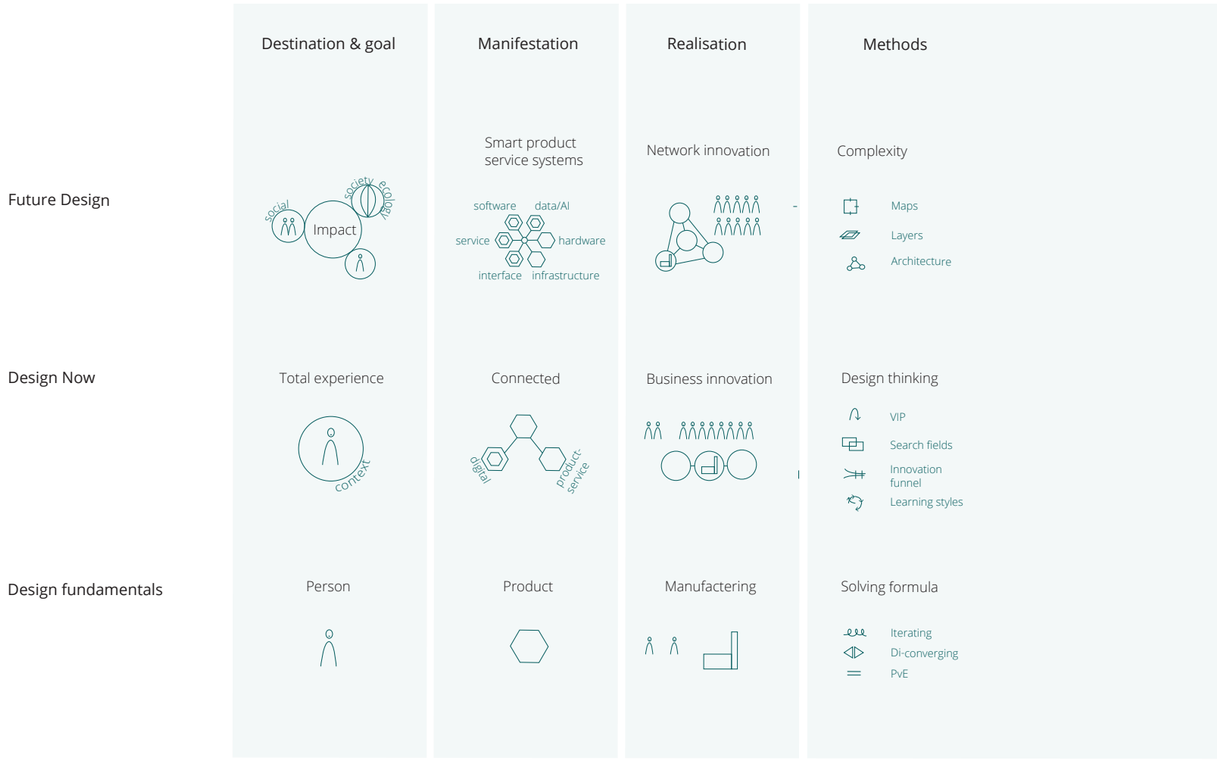


figure 4, IDE domain

2.1 Creating a new bachelor

To create a new bachelor a vision, introduced in chapter 1, was created. This vision was based on 8 guiding principles, shown on the right (Faculty of IDE - vision group, 2017).
As a contribution to this, a representation of the IDE domain was created, see figure 4. This domain consists of four horizontal parts: destination & goal, manifestation, realization, and methods, as well as three vertical layers: design essentials, design now and future design.

The design fundamentals
The design fundamentals show the roots of the profession of industrial design, originated in the industrial revolution. Back then, the designer needed certain competencies such as ergonomics, understanding how to apply manufacturing techniques, aesthetics, marketing and most of all how to integrate these aspects through a methodological approach.

Design now
During the past twenty years, the design profession has been heavily influenced by the consequences of the digital revolution. Products became connected products and part of a bigger system with multiple stakeholders (Sleeswijk Visser, 2013). In the context of this new world, for the user, the emphasis shifted from plain usage to experience. All of this led to new methods and different skills and competencies in design education.

Future design
In the envisioned future, the impact of what is designed, for people and the planet, takes a central place. Innovation, in order to create the desired impact, will be a continuous process in which designers, producers and the user will play new and non-traditional roles. This future context needs a different approach to design education, aiming to teach new competencies, skills and methods in order to create designs that matter.
The IDE domain together with the vision and guiding principles form the starting points for creating a new bachelor programme.

1. Always designing
2. Choose your own path
3. Adopt an active learning attitude
4. 360° continuous feedback
5. Working alone and with others
6. Embrace complexity
7. Make things real and work in the world
8. Design the design process

2.1.1 Final attainment levels

The final attainment levels express the competencies every student needs to possess when finishing the new IDE bachelor. For the new bachelor, the preliminary final attainment levels are divided into designing, design methods, knowledge, academic skills, integration, team dynamics and individual.
The focus of this project concerns two of the individual attainment levels: positioning and lifelong learning.

Positioning

You are able to position yourself amongst innovators and within the (dynamic) field of design

Lifelong learning

You have developed a lifelong learning attitude in an experimental and entrepreneurial sense

Gaining these competencies will probably influence other attainment levels in all of the other categories. For example, being able to position yourself can help with working in a team.

2.1.2 Learning Culture

For the new bachelor, a learning culture is envisioned, described in 5 clusters, figure 5.

Transparency & Respect	You are transparent about what, how and why you do what you do, there is space and responsibility to reflect on this critically and respectfully
Autonomy & Community	An open and structured community gives you the space to commit to your own curiosity and interests
Trust & Explorative attitude	There is trust in each other's self-teaching capabilities, therefore there is space and appreciation for a proactive, explorative attitude
Diversity & Inspiration	Both internal and external motivations are stimulated, appreciated and respected
Satisfaction & Responsibility	Students, teachers and staff are responsible for their own and each other's learning satisfaction

figure 5, learning culture

2.2 Project scope

As the process of the bachelor renewal is ongoing, this project gives advice on how to implement a concept for self-reflection, navigation and positioning in the new bachelor.
The following aspects, figure 6, of the new bachelor are considered:

- The bachelor programme as it is now might change entirely, therefore it will not be seen as a starting point for this project. Except for the minor (a minor is the first semester in the third year which students are free to fill in themselves), this is a TU Delft broad approach and it will be assumed the minor stays the same.

- The future outline of the curriculum, (based on the IDE domain) is not formed yet and will not be taken into account. An exception to this is the fact that there will be more flexibility in the programme envisioned in the bachelor renewal vision. This flexibility leading to more study related choices will be taken into account.

- The preliminary set attainment levels for the new bachelor can be taken into account. The concept should contribute to these.

- The resources of the new bachelor like budget are not specified yet. Because of that, they won't be taken into account. Though the overall feasibility will be kept in mind during the project.

- The envisioned learning culture will not be seen as a starting point for this project. As that would change the entire scope of the project. Thought it will be kept in mind.

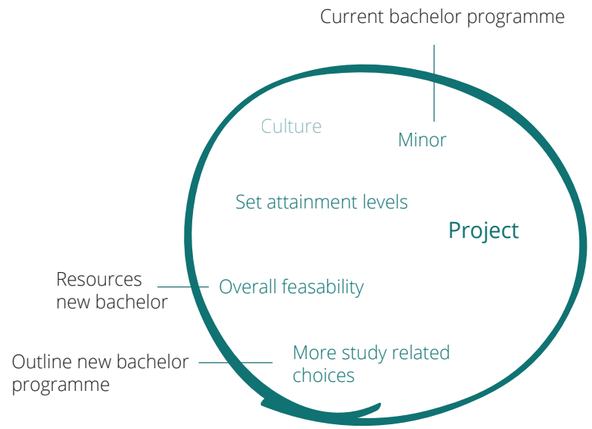


figure 6, scope

3

Field research

To design a reflection concept fitting to the users and contextual needs, field research is conducted. This chapter presents the results of the field research, consisting of interviews, sustained with literature, current practices and case studies.

3.1 Introduction to reflection

Before discussing the findings of the conducted field research, this part shortly introduces the fundamentals of reflection. This serves as a background for the field research.

3.1.1 What is reflection?

Reflection is defined in many different ways, depending on its purpose in practice or academic literature. (Moon, 1999) As a starting point for this project the definition of Boud (1985) is used:

"Reflection is a process of going back to the experience (made in the past), attending to these experiences (including emotions and insights during them), re-assessing these experiences (based on current knowledge and an ex-post perspective on the experience) and drawing conclusions for future behaviour from this process."

Van Halem, de Leeuw and Stuut (2008) contribute to this that reflection is not evaluating what you have done but merely looking for why you have done it. Knowing why you have done something enables you to act more consciously in the future.

Types of reflection

Many different types of reflection can be found in literature, though the foundation has been laid by Schön (1983), who identifies two types of reflection: reflection-in-action and reflection-on-action, figure 7. Reflection-in-action can be described as thinking while doing in order to change the current situation (Schön, 1983). Reflection-on-action can be described as post-event thinking where one re-visits and thinks about past experiences after doing, in order to influence future situations (Schön, 1983). Contributing to these types a third kind of reflection is identified: reflection-before action (Reed and Procter, 1993; Greenwood, 1998) or 'anticipatory reflection' (Van Manen, 1995; Loughran, 2002; Freese 2006), as mentioned in the introduction. This is a reflective approach which is not retrospective but refers to considerations taken before an event. (van Manen, 1991)

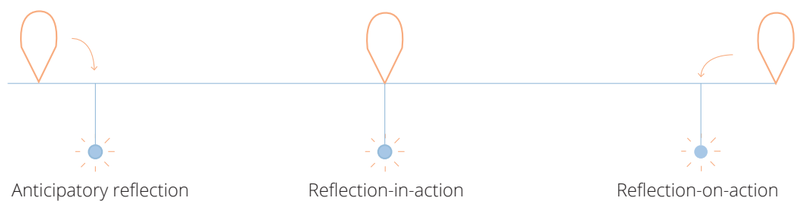


figure 7, types of reflection

Levels of reflection

Different levels of reflection can be described. Van Manen (1991) identified four different levels of reflection considering the depth of the reflection, see figure 8. Korthagen (2004) identifies other levels of reflection regarding the content of the reflection, described in the onion model, see figure 9.

1	application of reflection in thinking and acting on an everyday basis
2	specific reflection on incidents and or events
3	the development of understanding through interpretation
4	reflect on how we reflect

figure 8, levels of reflection by van Manen (1991)

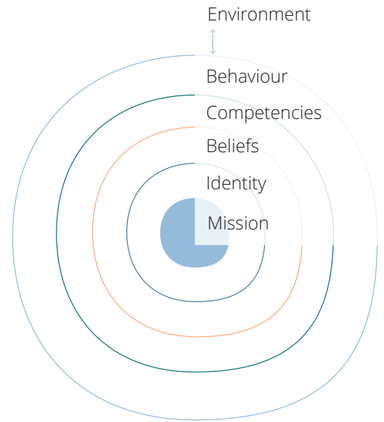


figure 9, onion model (Korthagen, 2004)

3.1.2 Reflection models

Reflection is often a process (Boud, 1985). In literature, many models describing this process can be found. In the table, figure 10, three different models, with different phases, are presented.

PHASE	0	1	2	3	4
Borton (1970)		*What?* describe in detail what happened, sensing out the difference between response, actual effect and intended effect	*So what?* transforming the gained information into immediately relevant patterns of meaning	*Now what?* the gained information is transformed into recommendations for future behaviour	
Kolb *Experiential Learning Cycle* (1984)		*Concrete experience* collect data and observations about the experience and describing these	*Reflective observation* analyse the data and observations	*Abstract conceptualization* new suggestions or modifications for an action	*Active experimentation* applying new suggestions or modifications
Li et al. *Stage based model* (2010)	*Preperation* preperation to collect personal information, determining what information will be recorded and how to record it	*Collection* observing different personal information, such as thoughts, behavior, interactions with people and environment	*Integration* prepare, combine and transform the collected information	*Reflection* reflect on personal information	*Action* choose what to do with the newfound understanding and do it

figure 10,
reflection models

Name / source	Zoe
para-phrase	**A conversation with someone adds value to a reflection**
quote	CM If you would have a conversation with someone afterwards it would be much more valuable
Space for notes during analysis	

figure 11, statement card

3.2 Interviews about reflection, navigation and positioning

Students, teachers and experts were interviewed about current experiences and wishes regarding reflecting, navigating and positioning in relation to the IDE bachelor. This parts presents the results.

3.2.1 Method

Three sets of semi-structured interviews around reflecting, navigating and positioning were conducted.
The first set of interviews was conducted with IDE students; three bachelor students from different years and three IDE master students from different master directions. For the second set, five bachelor teachers were interviewed, with different experiences and professions, both in and outside the faculty. The last set was conducted with three experts; a study-counselor, the head of education and student affairs and an educational adviser at the TU Delft.
All interviews were processed using statement cards and colour coding. An example of a filled-in statement card can be seen in figure 11.

"Reflection for me is, to evaluate, you just see the facts about what went right and what went wrong and reflecting is the why, and how that can help me"

- Myron, Bachelor student

3.2.2 Results

This part presents three questions from the interviews followed by the results of the statement cards.

What is reflection for you?

Every interviewee answered the question: "What is reflection for you?" Though everyone had a different answer, all answers contained the same elements: looking back, analysing that situation and using it to look forward. Everyone saw reflection as a process of looking back: what happened, what went wrong, what went well, etc. The second step, analysing, was described in different ways, but entails interpreting the data; why went something wrong? What did I think of the situation and why? The third step is taking the gained information from the

second step into the future: How can I improve? Or how can I apply this information?
It is interesting to note that when interviewees answered the question, no one talked about a conversation or a social aspect. Though when talking about conversations, a lot of interviewees indicated they think conversing is a way of reflecting, deepening the reflection or even that reflecting is a social process.

How do you make study related choices?
From interviews with students, different ways of making study related choices were extracted. Teachers were asked if they ever supported a student in this process and how. Overall, the ways of making study-related decisions can be clustered in three ways:

- The first one is making a decision from your gut feeling. This process doesn't contain conscious considerations about the choice or talking with people about it.

- The second one is making a conscious choice but without talking about it to anyone else. In this case, students do think about it themselves, look for information, use observations, weigh pro and cons for example, but don't discuss their considerations with others.

- The third concerns making a conscious choice by using conversations with others. In this process, the student thinks about the choice themselves but also shares their considerations with others, for example, friends, other students, parents or study counselor.
In both the second and third way, reflection plays a conscious role. Often students take into account what they want to improve or what they liked/ disliked in the past. It is likely this also happens unconsciously in the first way. In the second and third way tools are used to think about choices, some tools mentioned are: making a planning, fill in a Harris profile and cross off what they don't like.

How do you see yourself as a designer?
The question: "How do you see yourself as a designer?" was asked to all students and teachers. The intention of this question was to extract elements from the answers which encourage thinking about positioning yourself as a designer. For example, a teacher and course coördinator stated:
"I always want to make people happy, I design in a way to first explore what people actually want and then start designing."
This shows that a goal (making people happy) and a process (explore what people actually want) can be important in order to think about positioning. In this way, different elements supporting positioning were extracted, displayed in the right column.

Positioning
- Parts of the design process
- The kind of design process
- The goal of your designs
- The kind of question you solve
- The IDE pillars (business, people, science)
- What you design

3.2.3 Clusters
From the statements cards, 19 clusters were formed. The most important clusters are described.

Why should we want a concept for reflection, navigation and positioning?
From the interviews, reasons why this concept should be designed were extracted. The new bachelor programme will be more flexible, which means, amongst other things, more choices for students. Multiple interviewees pointed out that not knowing what kind of designer you want to be, makes it harder to choose. Especially first-year students need support in making these choices. Iris, a master student comments on this: *"Thinking about positioning can help to make choices instead of comparing yourself to everyone and try to improve everything."*
Teachers educating in the masters and the study-counsellor point out that master students often don't know what they want, thinking about this in the bachelor may help. Reflection can also support this process of forward thinking and positioning. Adding to this is the quote on this page by a bachelor teacher.

Experiences with a prior reflection tool
The prior reflection tool (competence monitor) wasn't experienced well by both student and teacher. The use of it is found unpractical, all students mentioned that there were too many questions and the phrasing of the questions was unclear. While questions students would like, for example; "Why did/didn't you like the course?" or "How do you see yourself as a designer?", were not asked.
Students point out they used it because they had to. Why they had to use it was not clear. When filling it in, a lot of students kept in mind what a coach would want to hear and didn't really use it to reflect. Though all interviewed students never experienced a coach discussing it during evaluation.
Teachers note that it takes a lot of time to read everything about every student and the competencies where students needed to reflect on didn't align with the learning objectives. A bachelor teacher noted: *"What I found confronting is when I made a note in the competence monitor, it stayed with the student the entire bachelor. Also, other teachers could read it, so I stopped doing that"*
Good things mentioned about the competence monitor are the way it offers structure and guidance to reflect and considers a broad field.

Negative:
- too many, unclear and not the relevant questions
- not clear why doing it
- fill in what coach wants to hear
- no feedback
- time consuming
- notes are readable for the entire duration of use

Positive:
- structured
- considers broad field

"Reflection for me is future-minded, you look back to go forward."

Motivation to reflect

From the interviews, mostly with students, it appeared that the motivation to reflect is very important. Pink (2010) describes that for a more conceptual and creative task, like this concept will entail, a students' intrinsic motivation needs to be appealed to. As extrinsic motivation; external rewards, might have a negative influence, see column on the right page. For example, decreasing intrinsic motivation, lower performances and declining creativity (Pink, 2010). Furthermore, Deci, Lens and Vansteenkiste (2006) state that intrinsic goal framing produces deeper engagement in learning activities, better conceptual learning, and higher persistence at learning activities. Though the self-determination theory by Ryan and Deci (2000) describes that extrinsic motivation can still lead to authenticity and commitment. They state that for motivation there are three basic psychological needs: competence, autonomy and relatedness. A context supportive of these needs fosters commitment and authenticity (Ryan and Deci, 2000).

Contributing to this the interviews with students resulted in other relevant factors regarding motivation. It is very important students know why they reflect. It needs to be clear why they do what they have to do. For the students, it is also important what happens with the reflection and what they can do with it themselves. Making a reflection concrete and giving feedback can support in this.

Competence

Need to be effective in dealing with environment

Autonomy

Need to control the course of their lives

Relatedness

Need to have a close affectionate relationship with others

Intrinsic and extrinsic motivation

Two different forms of motivation can be distinguished; extrinsic and intrinsic:

- *Extrinsic motivation contains behaviour that is driven by external rewards (or punishments) to make people perform faster and/or better.*
- *Intrinsic motivation is behaviour driven by the individual, without an external reward.*

Extrinsic motivation can work well for rule-based, routine tasks, though not for more complex conceptual and creative tasks (Pink, 2010). In that case, external rewards might have a negative influence, for example decreasing intrinsic motivation, lower performances and declining creativity.

There are multiple explanations for this. Firstly, in environments where extrinsic rewards are standard, many people work only to the point that triggers the reward – and no further. (Pink, 2010) Furthermore, it can occur that individuals under such circumstances may perceive their behaviour as being controlled by the reward. Lepper and Greene (1978) found that when the activity at the start is intrinsically motivating, meaning that the interest in the task is sufficient justification in itself, that when an extrinsic reward is introduced, the person will experience overjustification. This effect was also explained by Bénabou and Tirole (Bénabou & Tirole, 2003) in relation to a working relationship; when an employer rewards an employee for a specific task he is implicitly saying that the task in itself is not reason enough to do it.

Conditions for the concept

From the interviews conditions for reflection were extracted.
As reflection is a mental process it is impossible to force another to reflect, nonetheless creating certain conditions can contribute to encouraging reflection (Moon, 1999). From the interviews, three main conditions were extracted. Firstly, it needs to be embedded in the programme, which most importantly means there needs to be time for it in the schedule. This is contrary to the current situation and sustained by literature.
Li et al. (2010) identified that lack of time is the largest hurdle for reflection. Moreover, when reflection is facilitated throughout the entire curriculum it will be more effective (King and Kitchener, 1994)
Secondly, the educational-adviser mentioned that before a student can get to the concent of a new course the procedure and basic-needs of this course need to be clear.

Lastly, the concept needs to be controllable and realistic for the organisation. This mostly regards the working hours for the teaching staff, for example reading reflections and coaching every student personally.

These conditions can be complemented by Moon (1999).

- People; Facilitators of reflection
Facilitators have to understand reflection and how the quality of it relates to learning. Different forms of facilitators can be found in the literature. One of which is the supportive facilitator, that listens carefully. Another one is the critical facilitator, who challenges the learner to deepen the reflection.

- The environment
An environment that challenges or rewards students for reflecting, can encourage students to reflect. Furthermore, as reflection can expose personal material, an emotionally supportive environment is needed. This entails that students feel safe to take risks in their cognitive exploration. It is an environment in which there is an understanding of, and support for the emotional aspects of reflection.

- Specification of the outcomes
Reflecting can be encouraged by a specification of the outcomes. The required outcomes of a reflection are significant for the improvement of the use of reflection in educational settings.

The form of the concept

During the interviews, the form of the concept was regularly discussed. Some of the themes within the form were discussed extensively and therefore they are clustered separately.

- Reflecting
Regarding the form of reflection, students and teachers think quite similarly. A rigid form is not wanted, merely a combination of freedom and guidelines. Let students experience different ways of reflecting so they can find their own. Maria, a bachelor student comments on the form:
"making it your own makes it more valuable."
This is substantiated by, Moon (1999) who mentions that personalising, for example, a journal provides a sense of ownership and distances it of the more formal learning materials.
Next to this, a combination between abstract and less abstract reflections is often mentioned.

- Navigating
The interviewees pointed out that, considering the support of students in making study related decisions, providing only information is not sufficient. For example, the study guide is not fulfilling. Students with experience can help in this.

- Positioning
Different forms of thinking about positioning were mentioned during the interviews. A link relating the kind of tasks, design fields and courses is wished by students and is not present now.
More experienced people can also support, both IDE alumni as master students were mentioned. They can talk about their choices and inspire students with their paths.
Students point out that in the bachelor it might be easier to relate positioning to the master programmes, as well as that it might be easier to think about positioning relative to another person.

The frequency and moment of use

For the frequency, it is important to firstly state the quality of the reflection. The interviews clearly showed that the quality of reflection changes when doing it more or less often. The less often, the more abstract a reflection will become, the more it can be related towards positioning, figure 12. With abstract, it is meant that someone looks from a helicopter view to a more fundamental process. For this kind of reflection, a lot of interviewees thought every half a year(semester) would be good. During a course, less abstract reflection should be incorporated more often. This is supported by the educational adviser who states it would be good to have small reflection moments supplemented with larger ones. Regarding navigating, it is important to trigger students in time to think about study related decisions. For every important study related decision there should be a moment incorporated into the concept.

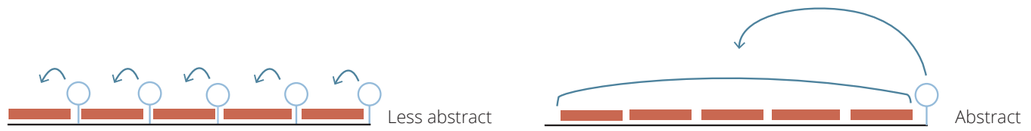


figure 12, frequency of reflection

A reflection tool

Regarding reflection tools, it is most important that the tool should support the reflection itself and doesn't cost too much time for both student and teacher.
When creating a reflection tool, Prilla and Degeling (2012) state that, *"Reflection tools must not be created without regarding the social system they are embedded in."*
To support the use and implementation of a reflection tool they mention that combining reflection with another mandatory task or adding reflection to an already existing tool might help (2012).
A lot of different tools for reflection can be found, for example:

- writing exercises: like using metaphors or writing an unsent letter
- visual tools: like concept maps and scenario's
- other tools, like poetry and role-playing

A lot of interviewees would like a tool that supports a visual way of reflecting, for example, a mindmap, roadmap or infographic. A bachelor teacher, states on this: *"Visual reflecting would be very nice but how to make it concrete?"*
This should be taken into account.

A conversation for reflection, navigation and positioning

All interviewees state that a conversation can support reflecting, navigating and positioning. Especially about reflecting it is mentioned that a conversation can be a way of reflecting and make the reflection deeper; reflection is a social process.
Reflecting with peers is mentioned, though the interviewed students would like a structure for this.
Regarding navigation, the study counselor indicated that there are always some students, who want to discuss a decision with a study counselor, however, this is a minority.

A mentor to guide

A fixed mentor during the bachelor for all IDE bachelor students is a hard topic. Most interviewees like the idea of having conversations but not with a fixed mentor for three years. For example, it is mentioned that when you don't match with a mentor it can cause a negative effect. Different people in a mentor role are mentioned: senior students, IDE teachers and IDE alumni.
When a senior student would have the role of mentor, it was mentioned they should follow a course for that, as is currently the case with "ontwerpdidaktiek", so only trained students can become a mentor.
When IDE teachers would mentor students, the study counselor states they should be carefully selected and educated for that. It really is a different profession. Also, the head of education and student affairs states it can be hard: the difference between IDE coaches is large. Alumni from IDE might have the possibility to mentor students, of course, this also raises the problem of matching and skill.

Learning how to reflect

All interviewees think guidance and learning how to reflect is needed. This is substantiated by Moon (1999) and Hatton and Smith (1995). Who states that: *"it is unlikely that students will fully be able to use their ability to reflect straight away. Time and opportunities to learn to reflect are needed"*.
Understanding the benefits of reflection can be very helpful for this, especially in an early stage.
To learn reflection, Moon indicates that, more support in the beginning, can give way to less structure later on. This is also preferred by students; similar to the build-up of the education of the IDE bachelor, guidance should start intensively and decrease in time. A bachelor teacher and course coördinator adds to this :
"we should guide students in finding their own feedback."

While learning reflection, insecurities can occur, which can be circumvented by starting with short exercises on which feedback is given by a mentor (Knights, 1985). Students point out they would like, for example a module, to learn how to reflect by doing different exercises and using different reflection tools.
A bachelor teacher mentions explicitly that it would be good to not only teach students to reflect but how to reflect effectively.

Assessment of reflection

In a lot of educational forms assessment is part of the system. Though when reflection is part of an educational form it jars against assessment; assessment sits uneasily with reflection (ESCalate, 2009). All interviewees agree with this: a reflection should be separated from grading and a reflection itself should not be graded.
Using a portfolio (see right column) or self-assessment as an educational activity, could be a possibility, in that case, the act representing learning will become more reflective as well.
A course coördinator and teacher states: *"we need assessment of the students' competencies throughout the bachelors to support their development."*
This might be conflicting with not assessing reflection.

"In a situation where one person requires another to reflect as in educational settings, the process of reflection may be encouraged by the specification of the outcomes that the other expects."

- Jennifer Moon (1999)

Constructive allignment theory
A way in which reflection is used to asses can be found in the constructive alignment theory (Biggs, 1996). This theory is an outcome-based approach to teaching, in which the learning outcomes that students are intended to achieve are defined before teaching takes place. In this theory, a portfolio is used to assess the extent to which students feel they have met the objectives. This forces students to reflect on what they want from the educational programme, and how they think they are going to get it.
In this way, reflection itself is not assessed, but functions as a tool to make a portfolio, which is assessed.

Form qualities of the concept
From the interviews, some qualities of the concept regarding positioning and navigation were extracted, presented in the right column.

The content of the concept
The cluster content discusses everything that can give content to the form of the concept.

Reflecting
Regarding reflection, different interviewees mention that the content should support the step to: "How can I improve?" Knowing what to improve is not enough, practical improvement points and support in how to do this is wished for. Furthermore, the content should support the briefness of a reflection. Empty pages ask for filling and most students just write down a lot, while a reflection doesn't need to be long; it should be compact and to the point.

Navigating
Regarding navigation, the way of describing courses is often discussed. Students express the need for a more tactile and concrete way for this. For example, linking to courses already followed or describing courses in a way of how you will develop and what you can do with that. The study-counselor mentions that questions about "I", for example: "What do I like?", "To whom do I have to account for?", can support students with navigation.

Positioning
- fun and creative
- graspable and with a low threshold
- show the variety
- students should be proud of their positioning/exploration

Navigation
- challenging students not to choose the easy way
- light

Positioning
Regarding the content of positioning, two main points were extracted from the interviews. The first is describing a role model, this doesn't need to be a designer, it can be anyone, and most importantly asking the question: "Why is this a role model for you?" "Which qualities attract to you?" Secondly, a focus on the strong sides of a student and what they like, instead of what do they need to improve is wished for.

Experiences which influence positioning
From the interviews with students, different experiences were identified which influence positioning, see right column. These experiences can change the way a student thinks about positioning but also justifies an assumption about the position.

- A minor
- Doing a committee
- Other activities outside the bachelor
- Courses in or outside the faculty

The current IDE Student culture
From the interviews with students, as well as with the study-counselor it appeared that the culture amongst students can be very stressful. Students tend to compare themselves with others a lot, which causes pressure. The feeling of "choosing is losing" can occur, which increases the pressure on decisions. Also, failing courses can cause insecurities about becoming a designer. While you don't need every skill fully developed to become a good designer. This is strengthened by the image of the perfect IDE designer which students feel is expressed by the faculty. This designer, hands-on, practical, doing, was not the designer most of the interviewed students identified with or felt like. This made some of the students insecure and doubt themselves. Students stated it would be good if a more versatile image of an IDE designer would be fostered. For the concept, interviewed students point out the wish that the concept radiates that every one may be who they are. Next to this, it would be good if the concept would not be experienced as heavy.

"It is important that you don't need to know it yet, that you can explore."

- Mila, bachelor student

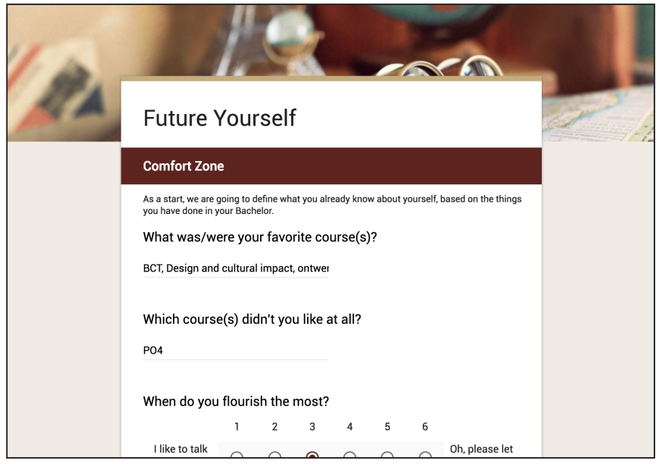


figure 13, future yourself tool

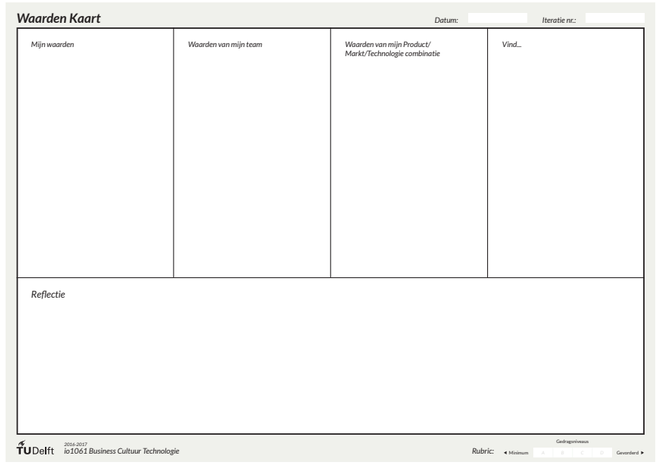


figure 14, waardenkaart

3.3 Current practices at IDE

Current practices found in the IDE bachelor and master programme can be an inspiration and benchmark for the concept. It shows how the way first-year students currently reflect as well as some interesting aspects for the concept like detaching it from grading teachers and receiving feedback.

3.3.1 Bachelor final project - future yourself tool

The bachelor final project is a ten-week full-time course in which students work on a case for a company. The future yourself tool, figure 13, was designed by the course coördinators. The tool is meant to help students choose one of the ten cases for the course. It is a google form and was spread by an email which also contained information about the cases. It took between 10 and 20 minutes to fill it in. The tool consists of three parts:

- your comfort zone
- follow your dreams
- next steps

In these parts different kinds of questions are used:

- Open questions
- Multiple choice questions
- Choose between 2 options
- A link to a team player quiz

Experiences

By means of interviews and a google form, experiences from students that used the tool were collected. These experiences varied. Some students found it very helpful while others didn't even know there was a tool. For some students, the tool helped in choosing a case, or it confirmed their choice. Some students indicated that it triggered them to think about the choice consciously. Especially the questions about "Where do you flourish?" and "What do you embrace?" triggered this, as well as that they were helping to get to know yourself better. The way the questions were formulated, concrete, was experienced as helpful. The questionnaire showed students liked different kinds of questions. Though the direct link to the cases was missing for the students. A suggestion was to incorporate a link to the masters as well. A final note was the lack of a conclusion or a conversation about the tool, all students would have liked this.

3.3.2 Bachelor course Business Culture and Technique

The bachelor course business, culture and technique (BCT) is a mandatory course for all first-year IDE students. One of the deliverables of this course is a reflection. This reflection was shaped differently over the past years. In 2017 the "waardenkaart", figure 14, was used. In 2018 it was incorporated into the final individual report in the form of a chapter called: collaboration and positioning. For both the waardenkaart and chapter there was a guide with questions which needed to be answered. Twenty randomly selected waardenkaarten and chapters have been read.
In both forms, the reflections went into little depth. The style used by most students was narrative, using words like "and then", "so" etc. In both forms, the Belbin test, which is "mandatory" and group work were discussed in every reflection. In none of the read reflections, the student zooms out and reflects overarchingly, for example connecting to other experiences.
The link to the future is made by approximately one-third of the students, using terms as: "I would like to do … different next time". Though none of the students mention how they can achieve this.
While reading, it was noticed that reading the waardenkaarten consumed less energy than reading the chapters, it is assumed this is due to the difference between only text and a visual format.

"Reflecting on work seems useless sometimes, but from doing this we learned that reflections indeed can add value to the quality of a project. "

- Timo,
bachelor student

3.3.3 Manage your Master, Future yourself Workshop

Manage your master (MyM) is a mandatory course for all master students at IDE. It introduces the students to the structure and possibilities of the MSc programmes at IDE and supports them in developing their own personal vision on their master education. It takes place in the first three days of every semester and consists of multiple activities amongst other different workshops. One of these is the Future yourself workshop. The goal of this workshop is to get to know yourself better and using that knowledge to make conscious choices. The workshop consists of two assignments, the first is to make a self-portrait in the form of a collage without using a picture of yourself, by using only magazines, figure 15. The second is to make a collage about where you see yourself in five years, using copies of the previous collage and magazines. Both these collages don't have to be aesthetically pleasing, it is about the story behind them.

Experiences

The workshop teacher explains that students take the assignment very seriously and share a lot of personal stories. From conversations with students the teacher notices: *"normally students don't take the time to think about who they are, for whom they make the choices they make."*

- Workshop teacher

While during the workshop they get three hours of time to think about who they are and where they stand in society.
The teacher states that a version of this would fit in the bachelor as well, especially in the final year when choosing a master.

3.3.4 Workshop Vak overstijgen monitoren

On the 16th of December 2016, the course coördinators of the bachelor final project organised a workshop about "vak overstijgend monitoren" (course overarching monitoring, VOM) with different bachelor and master students and a recent graduate. The results of the workshop show that students appreciate looking from a distance to grow and a way which can help to capture and facilitate this. Such a concept should meet the following aspects:

- Students want a format which is personally adaptable
- For first-year students the value of VOM isn't clear and reflecting needs to be learned
- Learning should be done by step by step (de)facilitating
- Detach the concept from grading teachers
- Inspiration can come from the vision of others around you, outside of the faculty as well
- Don't focus VOM on courses but do make it attachable
- Integrate feedback
- It should be embedded in the programme

figure 15, self-portrait

3.4 Case studies

Next to IDE, there are several other design schools. This part describes case studies to three of them, situated in the Netherlands. The case studies explore the way these schools integrate reflecting, navigating and positioning into their bachelor programme, for example, a mentor for every student, making a personal development plan and writing a motivation letter.

3.4.1 Method

For these case studies, three different design schools in the Netherlands were chosen. The choice was based on the kind of education and their location in the Netherlands. That made it possible to visit the schools, speak to different staff members and students and experience the ambiance in the buildings. Figure 16 presents facts of the different schools and of IDE at TU Delft.

3.4.2 Design Academy Eindhoven

The design academy Eindhoven (DAE) is a design school situated in Eindhoven. They offer both bachelor and master programmes. For this case study Liesbeth Fit was interviewed, a teacher at DAE, where she teaches the course "Narrative" and formerly taught "Reflection". She also participates in the Innovation in education team of DAE.

The bachelor of DAE is a four-year programme. Figure 17 on the following spread shows the structure of this. During the first year, all students follow the same mandatory classes. After the final trimester, the first year students choose a direction. During the first two years, students are in a class guided by two mentors. These two mentors each guide one half of the class, switching halves after the first year.
The mentors coach the students during group sessions and by conducting individual conversations where they discuss questions like "Which direction are you going to choose?" or "Is this the right study for you?", etc.

During the exposition of the students work, every teacher can read the reflection. The teachers generally read the parts considering their course as well as the final concluding part. The mentor reads the entire reflection. The reflection document isn't graded but it is used for grading the courses and for the final transition rating. Teacher Liesbeth Fit mentions that: *"the experiences with the reflection document are very positive, it is embedded in the programme in a clear way."*

Reflection

Reflection is integrated into the programme of DAE with the use of a reflection document. At the end of every trimester or semester, students exhibit their projects together with a reflection document. During a project, students keep track of reflections in a kind of journal which is formed into a typed document at the end. The reflection document is clustered by week or course and concludes by answering overarching questions like what did I learn, what do I want to develop and what advice do I give myself. The goal of the document is to support students with decision making (choosing a direction, minor etc), to counteract dropout and to monitor the student.

"Before students made an entire project of the reflection document but we abolished that because then they focus on the design instead of the content. Now we have normal typed A4's with some figures, a standard font and a picture of themselves."

- Liesbeth Fit

Navigating

After the first year, students have to choose a direction. Teacher Liesbeth Fit states: *"Choosing a direction is a hard decision for a lot of students."*
To support this decision, students have to do some assignments. At first, they have to interview a senior student of the DAE who is following a direction which interests them. A symposium is organised where all directions are presented. The decision process is concluded with an individual conversation with the mentor. Students have to list their top three directions and write a motivation for each of them. The teachers and mentors discuss the motivations and see if a student fits in a certain direction, after which they place all students.
In the second year, students have to choose electives. This is set up a bit more loosely, they receive information per mail and have to write a motivation. This usually doesn't cause any problems.
In the third year, students follow a minor, which they have to choose at the end of the second year. The minor has just been implemented into the bachelor programme. Concerning the minors, there is an entire day of presentations, where students can walk around and learn about every minor. The students have to write a motivation for their minor choice. If a student has a hard time choosing, their mentor can support them.

	DAE	GRA	ID	IDE
Level of education	higher professional education	higher professional education	scientific education	scientific education
Number of first year students	around 110	around 160	around 250	around 330
Percentage of International students	around 70%	around 63%	around 7%*	around 10%
Pre-schooling (apart from secondary education)	some times	mostly a prepatory year	mostly not	mostly not
Years of existance	64	94	17	49

* The percentage of international students of all TU/e bachelor programme's

figure 16, fact sheet

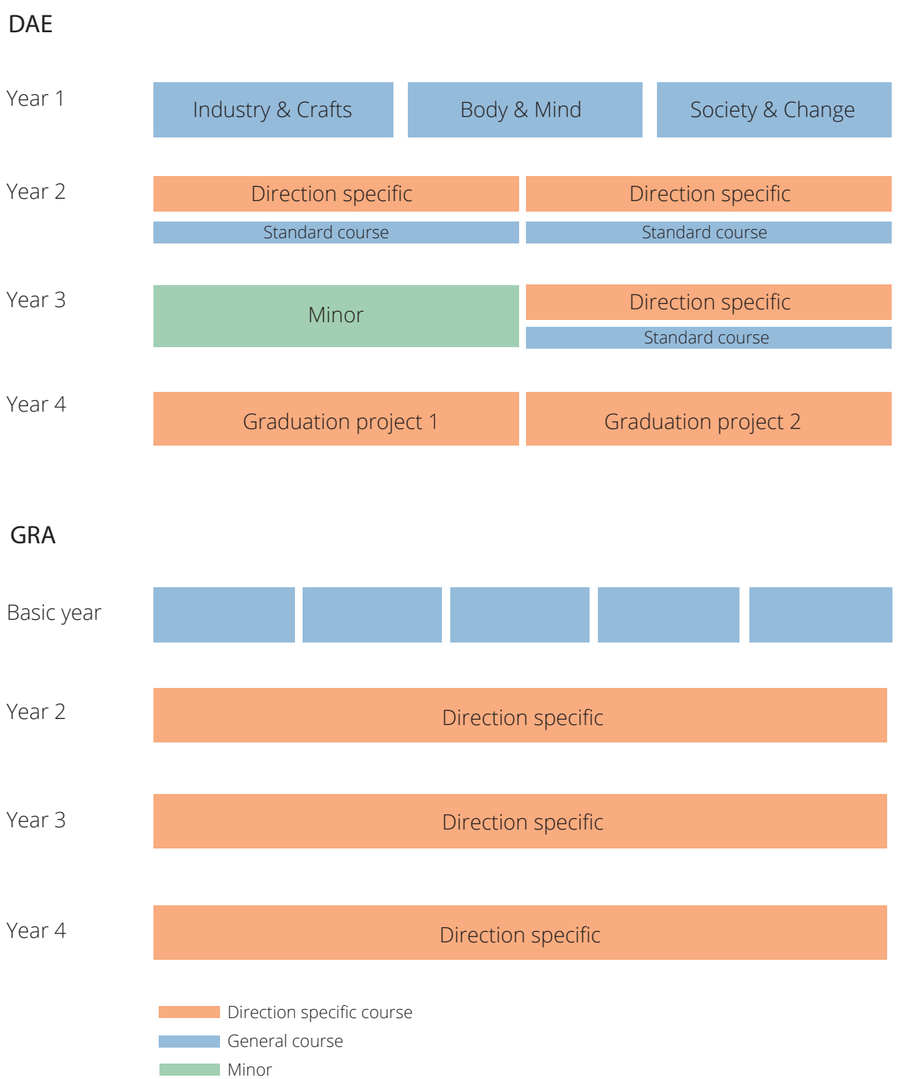


figure 17, bachelor programme DAE & GRA

Positioning
During the first two years of the programme, positioning is incorporated into the bachelor through the choices students have to make. The motivation letters, the conversations with the mentor, both group and individual, trigger students to think about positioning. In the third and fourth year, however, positioning is less embedded. There used to be courses about positioning and "the market" but due to the re-organisation of implementing the minor last year, these aren't part of the curriculum anymore. Positioning can be hard for DAE students, especially when they don't feel at ease in their department, for example, due to a different style of working or approach to a project. If this is the case it can be helpful for students to talk to someone outside of the department.

4.3.3 The Gerrit Rietveld Academy

The Gerrit Rietveld Academie (GRA) is a university of applied sciences for Fine Arts and Design based in Amsterdam. The GRA offers bachelor, master and preparatory programmes. Around 60-70% of the students are international and most of them have done a preparatory programme of at least one year. For this case study Hansje van Ooijen, head of the basic year department and a Design Lab student were interviewed.
The bachelor programme of GRA, figure 17, starts with a basic year, which is the same for all students and consists of 5 mandatory courses. After this year students choose a specialisation. During the basic year, students are divided into classes which are guided by a mentor. Every class is taught by 5 teachers, including their mentor. The class has a weekly mentor session where questions like, "How do you study?" and "How do you make decisions?" are discussed. The mentor monitors the individual qualities and progress of each student. In the specialisation Design Lab, mentoring continues the same way.

Reflecting
For reflecting there isn't a fixed method. The different courses all have their own approach for doing this as well as the mentors during the mentor class and individual conversations.

Navigation
Choosing a specialisation is an important choice for students, not only the subject of the specialisation is important but also the way of working within this specialisation. To help students choose, three days of presentations are organized. Students can subscribe to the presentations they would like to attend. Sometimes the department of the specialisation organises an extra activity for students to partake in. All basic year students speak to different teachers within the basic year about their choice as well as with their mentor. Sometimes mentors invite their old class to tell about their specialisation. Students submit their first and second choice of specialisation in June. During the first weeks of the second year, students are still able to switch in consultation with the senior teachers of both concerning specialisations.

Positioning
For positioning, it is important that students feel that they can explore without consequences during the basic year (personal communication, van Ooijen). In the specialisation Design lab, a mandatory internship is integrated into the curriculum to help students position themselves. Also, there are a lot of field trips and projects in cooperation with organizations and/or companies. The mentor helps students with positioning during mentor sessions and individual conversations.

> "We encourage the students to visit the open days, to walk around the building and talk to senior students and teachers."
>
> - Hansje van Ooijen

3.4.4 Technical University of Eindhoven, Industrial Design

The Technical University of Eindhoven (TU/e) offers fifteen different bachelor and master programmes. One of these bachelor programmes is Industrial Design (ID). For the case study, Miguel Bruns and Jasmijn were interviewed. Miguel Bruns is a teacher at ID and was the head of education (opleidings-directeur) for five years. During these five years, he helped renew the bachelor programme. Jasmijn finished the bachelor of ID.

The bachelor programme of ID consists of three years, figure 18. During the first year, a group of students has a senior student coach. The senior students support the first year students with getting acquainted with the study, the building and studying in general.

At the start of the second year, the project-coach of the students becomes their teacher-coach for the second and third year. The teacher-coach supports the students in reflecting, making decisions, etc. Every ten weeks an individual or group meeting is arranged between the student(s) and coach. Every teacher-coach mentors around 24 students.

The ID bachelor has 5 areas of expertise every student should master sufficiently. These are creativity and aesthetics, technology and realisation, user and technology, business and entrepreneurship and math, data and computing.

Reflection

Reflection at ID is integrated using a personal development plan. This is a plan students write every quartile, which contains their learnings and what the students should do to obtain the learning goals. The student- and teacher-coach supports the students in writing the personal development plan (PDP), which is assessed three times. The first time after the first year by examiners of the first design project. In the third year, it is assessed after the Vision and Identity course. After this assessment advice is given to the student, which they can use during their final bachelor project and last elective. After the final bachelor project, the last assessment takes place. This assessment is done by both the teacher-coach and the project-coach. The only demand regarding the form of the PDP is that it needs to be interactive, like a website or an application. The PDP is used/updated by the student during the entire bachelor programme. Last year the intensive guidance of the students became harder due to the increase in the number of students.

During the first year, students learn how to reflect in several workshops. These workshops are not mandatory, which fits the vision of ID. Part of this vision is that in the bachelor programme of ID students are responsible for their own learnings. In the interview, Jasmijn mentions that in the first year it is hard to write the PDP because students don't know the design field yet. Later on, she values the process, especially the feedback which helps in making choices. A downside she mentions is the pressure, the expectations are quite high and it is very time intensive.

Navigating

For navigating the senior-student and teacher-coach support the student in making decisions. The information about the courses can be found in the study guide and for some courses there is an information market. Though due to a large number of options, not only within but also outside the faculty of ID, the coaches aren't aware of every elective. This is underlined by the fact that not every course is presented during an information market. Regarding navigation, the responsibility lies with the students.

Positioning

Positioning is attained using the PDP and the course Vision and Identity. After every course or decision, students reflect in the PDP, which aims to help them position themselves. The coach can support in the process of positioning.

"My teacher-coach was actually a more physics-focused teacher while I am not. It was fine though it did not really match."

- Jasmijn, student

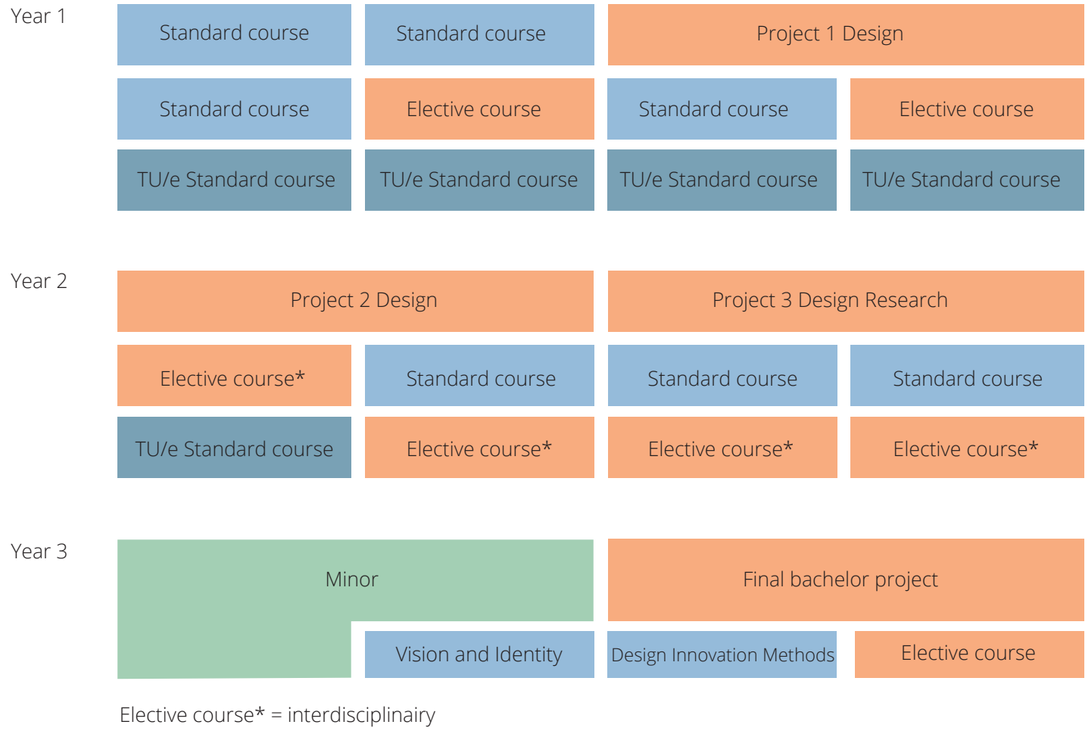


figure 18, programme ID

3.4.5 Comparison

When comparing these schools it is important to note that there is a difference in the level of education and size, see figure 16 on page 48.
In figure 19 the schools are compared next to the IDE at TU Delft. The categories they are compared to, are important findings of the field research.

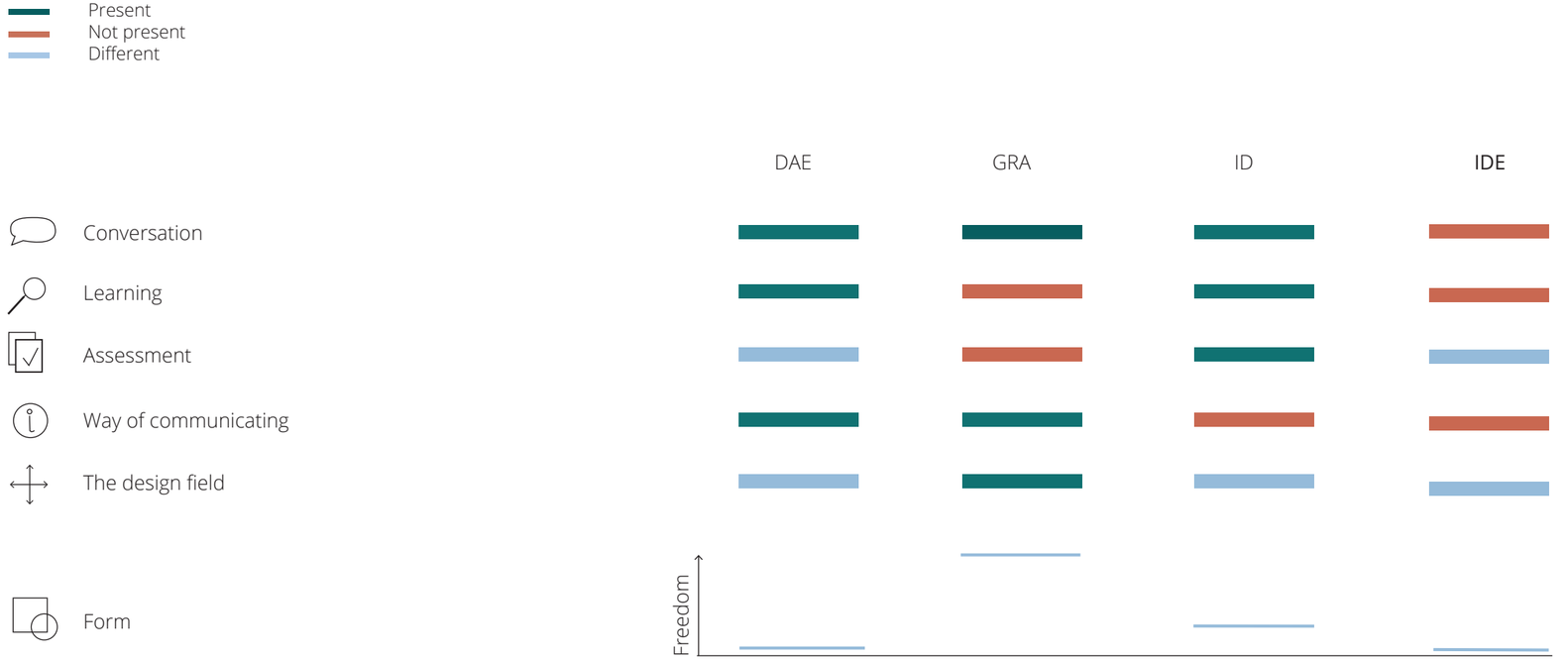


figure 19, comparison

4

Design Brief

Previously presented is the context of the new bachelor curriculum and the results of the field research. This chapter starts with my vision for this project and combines the previous chapters with this, presenting what will be taken to the ideation phase.

figure 20, guiding and facilitating

4.1 Vision

"Students may explore what kind of designer they want to be", is part of the vision I created for this project, presented in this chapter. The vision represents my own view on how to approach the design goal, described in chapter 1. It is based on the field research and my own experiences. The vision consists of two parts: one describes the goal of the concept and the other one describes the way to go there; how to reach the goal.

Goal

"I want students to consciously explore what kind of designer they want to be and feel inspired to do this.
During this exploring they should feel free to not know it yet. "

Goal
To support this goal, I would like to make reflecting and thinking about subjects like positioning, natural and open. In this way, it becomes more approachable and a normal part of the education.

Way to go

Students are responsible for their own process.
In the beginning, students will be guided: assisted in traveling trough unfamiliar areas, shown different paths and routes.
This guidance will gradually transform to facilitation.

Way to go
The *way to go* describes a turning point: from guidance to facilitation, figure 20. Herein, facilitation stands for providing, for example, space or technical help. This shift from guidance to facilitation will probably occur around the second year, due to the fact that studying becomes more familiar then and there is room to look ahead. Guiding and facilitating doesn't mean taking over responsibility. During the entire process students are responsible for their own development, for their own process.

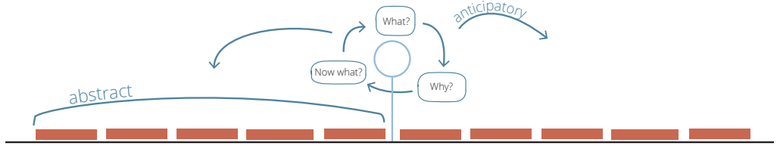


figure 21, anticipatory reflection

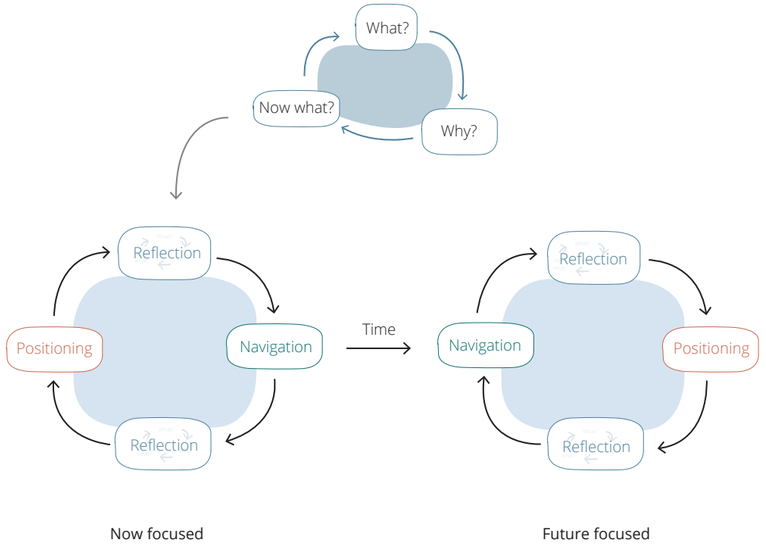


figure 22, cycles

4.2 Design brief

All interviewees, as well as the staff designing the new IDE bachelor, pointed out that they think it is needed to include a concept for self-reflection, navigation and positioning in the new bachelor. The design brief presents all the aspacts from the previous chapters combined and forms the starting point for this concept.

The current way of reflecting

The reflections for the course BCT show a glimpse of the current way of reflecting by first-year IDE students. This is quite superficial; narratively, not overarching and with little connection to the future.
When the competence monitor, a prior reflection tool, is used, students state that there are too many questions and mostly the formulation is unclear. Students reflect because they have to. This is supported by literature (Mittendorff, Jochems, Meijers & den Brok, 2008; Meijers, Kuijpers & Winters, 2010).

The new bachelor context

The context, the new bachelor, is an ongoing process. The scope of this project (chapter 2) includes; the preliminary set attainment levels and the more flexible curriculum. This project doesn't take into account: the resources of the new bachelor (overall feasibility will be kept in mind) and the current bachelor programme, except for the minor.

The process of reflection

Combining literature and interviews, the process of reflection is described in a three-phase model: *What - Why - Now what* (chapter 3.2). Furthermore, the application of reflection will be anticipatory and abstract, reflecting over a longer period of time to anticipate on the future, figure 21.

Cycles; thinking about self-reflection, navigation and positioning

The analysis of the interviews shows that the order in which self-reflection, navigation and positioning appear to change over time, cycles figure 22.
It starts with reflection followed by making a choice (navigation) and by that choice students position themselves. After executing the choice, students reflect again, make a new choice and position again, etc.
Towards the end of the bachelor the order changes, students reflect, think about how they want to position themselves and that leads to a choice, followed by reflection, positioning, navigation, etc.
Whereas during the start of the bachelor the main focus is on the study choice (navigating), which is very much in the present, when moving on, the main focus becomes positioning.
A specific time frame for this change doesn't appear from the interviews. It might have to do with the personal development of the student.
For this concept, I think that students should become more aware of the positioning part of navigation. The concept should therefore aim to guide students towards the second cycle.

Motivation

From the field study, it appeared that it isn't always clear for students why reflecting is needed. This negatively influences the motivation to do it.
As this process can be seen as a more conceptual and creative task it is important to play to students' intrinsic motivation or apply the self-determination theory (Ryan & Deci, 2000), this contains addressing students' competence, relatedness and autonomy.

Conditions

There are two main conditions for the concept to work. Firstly, the concept needs to be embedded in the entire curriculum, which means there needs to be time for it in the schedule. This is different from the current situation and substantiated by Moon (1999), who elaborates on this: *"facilitation of reflection will be more effective if it is supported throughout the curriculum"* (chapter 3.2).
Lastly, the concept needs to be realistic and controllable for the organisation, this mostly regards working hours for the teaching staff.

Frequency

The frequency of reflection influences the topic and quality of the reflection. The more someone reflects the less abstract it is. For this project, I choose to focus on the abstract reflections, because these have the possibility to relate to positioning. The more concrete reflections will take place during the courses.

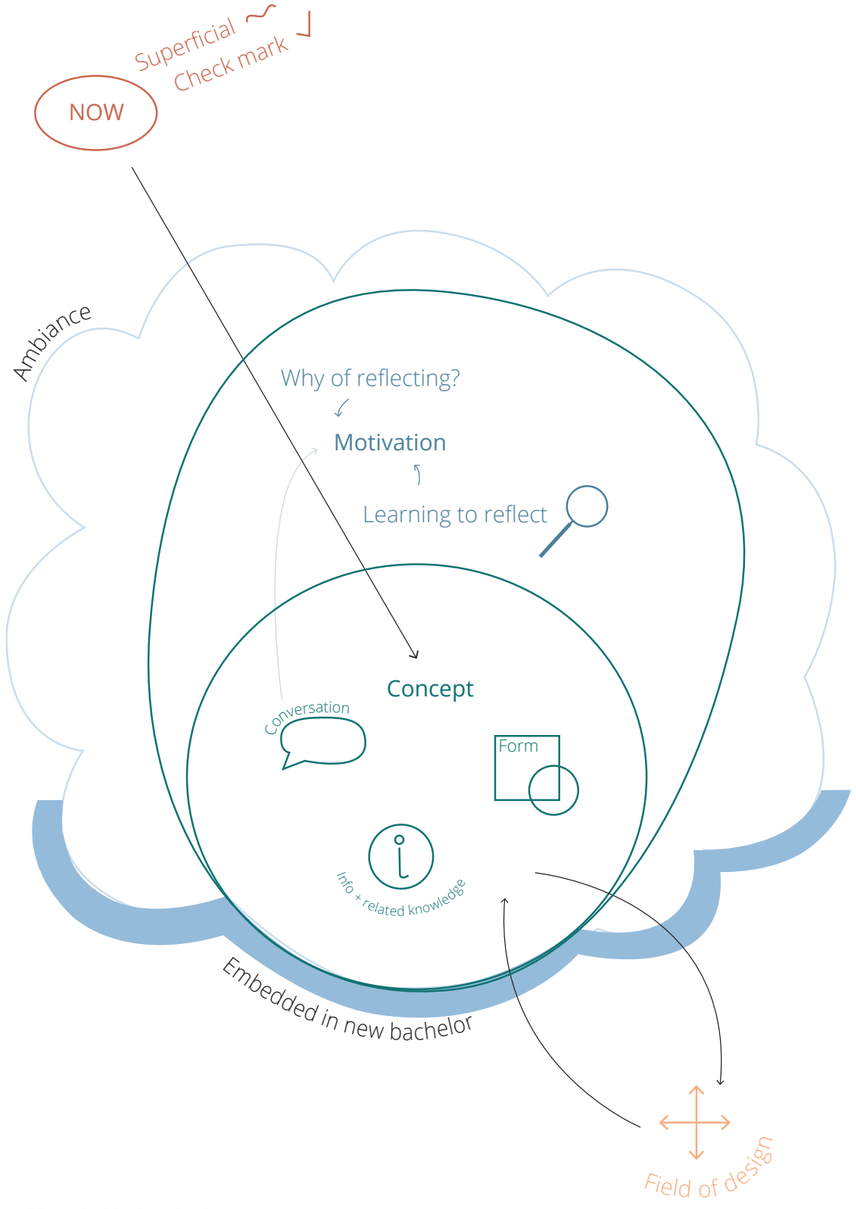


figure 23, visual of the design brief

Learning how to reflect

The field study and literature show that students need time and opportunities to learn to reflect. It is unlikely that they will be fully able to use their ability to reflect straight away (Hatton and Smith, 1995; Francis, 1995). It is often assumed that students know how to reflect, though this is not the case (Mittendorf et al. , 2008).
The interviews show that students preferably learn different ways of reflecting and will be able to choose for themselves later on in the bachelor, this fits the vision for the concept.
It can be of value to the learner if they are helped to see the advantages of reflection in an early stage (Moon, 1999). Contributing to this, Moon (1999) stated that guidance, in the beginning, can give way to less structure later. This sequence is also described in the vision for the concept. Eventually being able to reflect on your own can contribute to the students' autonomy and competence, which increases motivation.

Form

Regarding the form of the concept, freedom is wished though within certain guidelines. This raises an interesting tension between freedom and regulations. As the vision describes the transformation from guidance to facilitation, it will start with more guidelines transforming into more freedom.
Adding to this is the wish to make it your own. This would make it more valuable, also supported by literature (Moon, 1999).
Reflecting in a visual way is mentioned a lot, using for example mind maps, roadmaps or an infographic to do this. Visually reflecting might make it more compact and interesting to read for teachers, though it might be harder to extract concrete action points from it. For this project, it is found important to explore visual reflecting without losing its concreteness.

Conversation

Part of the form can be a conversation. The field study shows that a conversation and feedback can support reflecting, navigating and positioning. Especially with regard to reflecting it is mentioned that a conversation can deepen the reflection. This is substantiated by Mittendorf et al. (2012).
A teacher mentor for every student would be hard to implement, due to the capabilities of the teachers, variety of coaches and the intensity of the coaching. Though I think it is important that a conversation is integrated into the concept, even as guiding students in finding their own feedback.

Assessment

On assessment, the interviews and current practices clearly show that a reflection should be separated from grading and from a grading teacher. In a situation where a teacher assesses the reflection of a student, the process of reflecting may be encouraged by the specification of the outcomes that the teacher expects (Moon,1999). For the concept, I choose not to asses reflection, though other forms of assessment will be looked at.

Navigation

Considering navigation, every interviewee pointed out that information, regarding different study choices, for students is needed but would not be enough to support navigating. Though the way this information is provided is very important. An important finding is that information needs to be concrete and link to their current knowledge, for example, passed courses, or later on, the masters. This is different from the way it is presented now.
At the DAE, students have to write a motivation, which can support students in thinking consciously about the decision.

Ambiance

The interviews showed that making decisions or positioning yourself can be experienced as heavy. Furthermore, students pointed out they experience stress and tend to compare themselves to other design students a lot. A positive, fun and light ambiance can support to prevent this. Aligning with the vision, I choose to use this as input for the concept.

The design field

Interviewed students and teachers point out that it would be good to show more variety in the field of design. Students experience the image of one ideal designer, which can cause insecurities and influence decisions. As it is envisioned that every student may be their own designer, showing more variety can help students with positioning and may invite students to find their own way.

Goal

To conclude, aligning with the vision, the goal of the concept is for students:

To consciously explore what kind of designer they want to be.

The interviews clearly showed students want to be their own kind of designer instead of being forced into a set image. This goal is divided into smaller steps. The first one is to explore your own bachelor path, which is part of the vision of the new bachelor curriculum as well. The second one is to create your own vision, which can bridge your own path to exploring your own kind of designer.

This design brief, figure 23, is the starting point for the design of the concept.

5

Echo

Echo is a concept for self-reflection. This chapter presents Echo, starting with an introduction. It continues with the outline and the content filling this outline. Finishing by discussing the contextual elements and envisioned interaction by students and Echo staff.

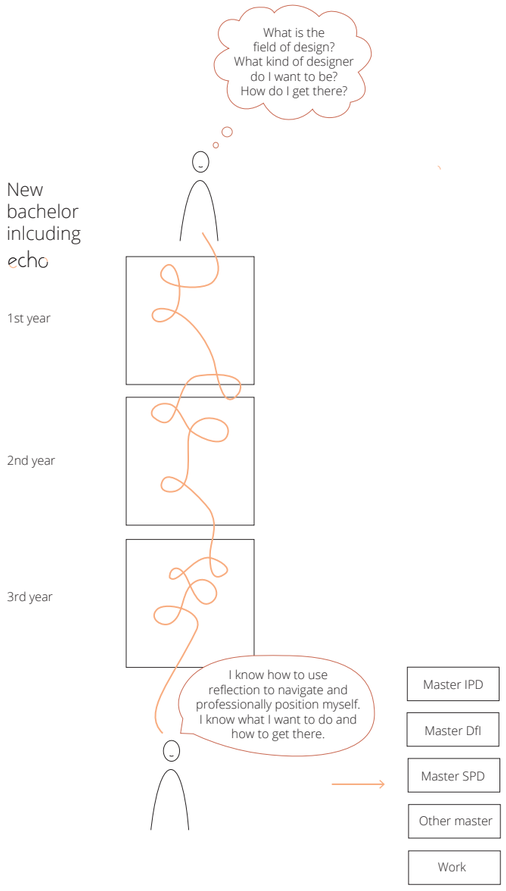


figure 24, composition of Echo

5.1 Introduction to Echo

Echo is a concept for self-reflection, navigation and professional positioning for students. Figure 24, explains the goal of Echo by showing how students start with the new bachelor curriculum (including Echo) and how they finish is. To reach this goal Echo consist of multiple parts: an outline, activities filling this outline and contextual elements, figure 25.
The outline can be seen as the structure of Echo; the way it is built up. The activities filling this structure are the content. Together the outline and content form a process. This process is supported by the contextual elements which contribute to the ambiance and continuation of Echo throughout the entire bachelor.

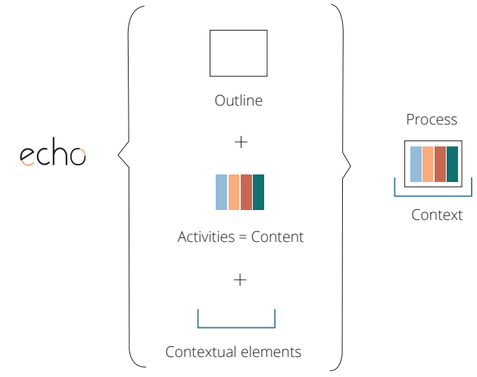


figure 25, composition of Echo

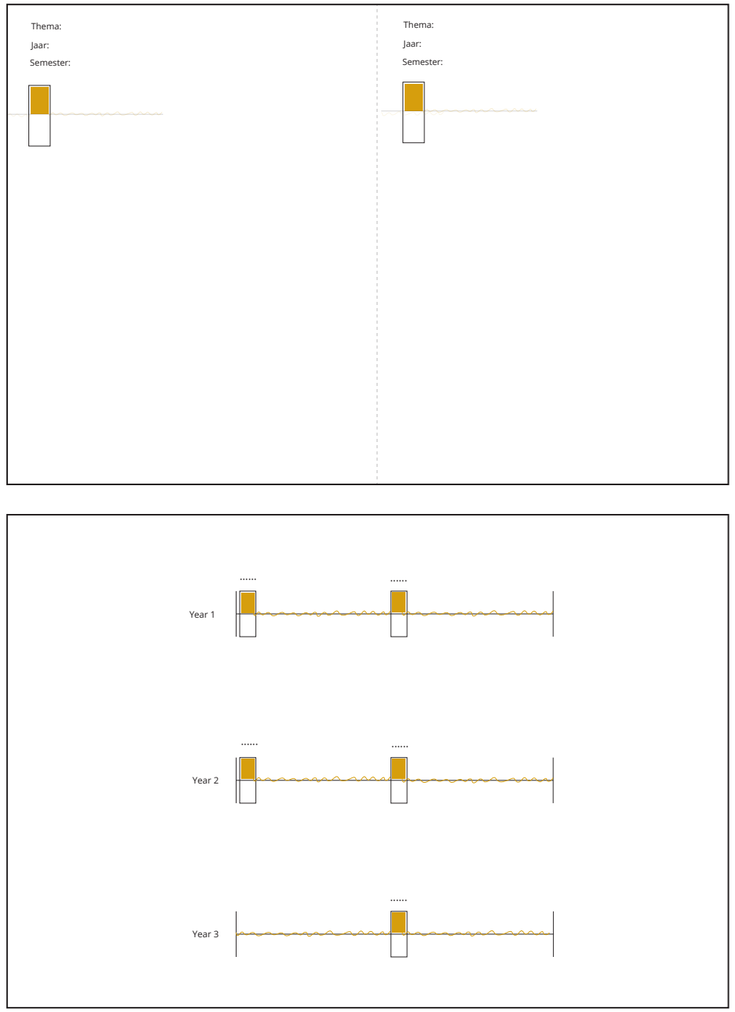


figure 27
formats, to use for the participants, designed for the creative sessions

5.1.1 Method

To design the different parts of Echo co-design sessions with students and teachers, figure 26, were conducted. Testing amongst other early prototypes, outline's and activities to integrate their expertise.
Materials for the co-creation sessions were designed, figure 27.

figure 26
creative sessions with teachers and students

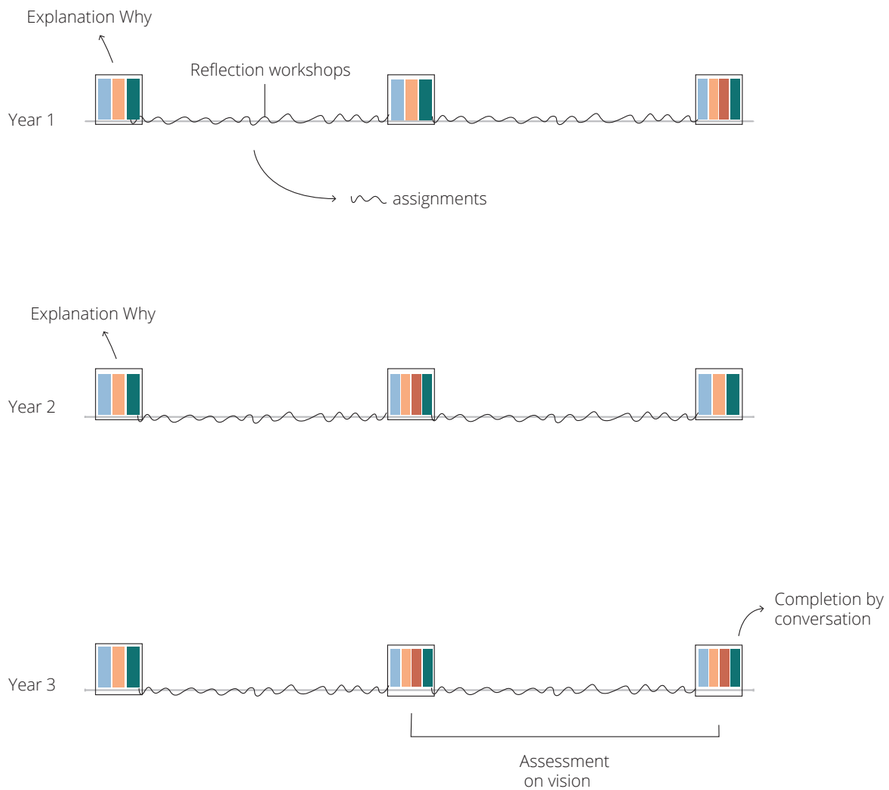


figure 28, Echo outline

5.2 The Outline

The outline of Echo, figure 28, consists of modules, filled with elements, and assignments. They are presented in this part.

The modules
Following the bachelor programme, the outline consists of three years. Within every year, three modules are placed. Between the modules, there is always an assignment.
A module consists of multiple days wherein different activities take place. By using the modules, time for reflection, positioning and navigation is embedded in the curriculum.
The modules are separated by a semester, which is done for multiple reasons. By separating the modules, the reflection becomes abstract, leading towards positioning. Furthermore, they stand apart from the courses which haven't started yet or are just finished. These days are reserved to be involved with Echo without other distractions. Echo doesn't substitute reflections incorporated into courses. The course reflections are more concrete and contribute to the abstract reflection of Echo.
The overall structure, consisting of the modules and assignments, is positively reviewed by the interviewed IDE staff, one teacher comments:

"I think that it is beautiful, there is a kind of rhythm that it becomes normal to think about it."

- Teacher IDE bachelor

Elements of the modules
All modules have in principle the same structure, built up with elements: reflection (look back), positioning (now), conversation (discuss previous and look forward). When a study related choice is coming up, a module consists of an extra navigation element (look forward). The conversation is added to the three main subjects for motivation and guidance.

- The reflection element consists of reflecting on the previous semester, assignments between the modules and the previous module. The way students reflect should be profound and future-minded. This will be elaborated later on.

- During the positioning element, students participate in an activity different for every module. The activities are fitted to their knowledge and skills and are designed to build upon each other. They all support students in exploring professional positioning. In this element, students participate in a workshop as well, which inspires and shows a part of the field of design.

- In the conversation element, results of Echo are discussed with the coach of the next design course (the coach from the design course taught in the coming semester). In this way, a conversation and guidance are integrated, separated from assessment. The conversation can motivate students to reflect.

- Some modules contain a navigation element. These consist of activities relating to study-choices, like the minor and electives. The activities and information given during these elements, connect to the existing knowledge of the students.

Assignments between the modules
The modules are connected by an assignment, represented by a loop line in figure 28. The assignments form the continuation of Echo during the semester. The content of these can, for example, be: a workshops on learning to reflect or exploring the field of design. The outcome of these activities will give input for the next module.
The first assignment will be filled with workshops on how to reflect. The design brief clearly presents learning how to reflect needs to be embedded, preferably at the start. The other assignments are discussed in chapter 5.3.

ASSESSMENT FORM - TEAM DESIGN PROJECT

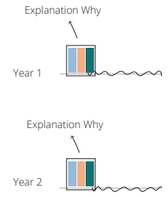
DELIVERABLES: Final Project Design report & Presentation

TEAM:		75% of DESIGN PROJECT TEAM GRADE	0
COACH:			
LO.1 - User evaluation & analysis			
Setup, conduct and analyse user studies by applying user research methods 20%	Creative and efficient **user evaluation plan.** Rich and attractive **collection of data material.** Inspiring and unique **findings to evaluate user engagement of the system.**	9,5-10	
		7,5-9,0	
	Concrete and ethically approved **user evaluation plan.** Complete and informative collection of data material. Relevant and convincing findings to evaluate user engagement of the system.	6,0-7,0	
	Unstructured and/or vague **user evaluation plan.** Generic and/or incomplete **collection of data material.** Generic and/or incomplete **findings to evaluate user engagement of the system.**	5,0-5,5	
		<=4,5	
LO.4 - Design decisions			
Assess and integrate design decisions by applying interaction design methods 30%	Specific and attractive integration of design decisions by means of extensive assessments of alternatives. Decisions on layout, look & feel and interactivity provide an original and impactful demonstration of the user engagement and adaptive feedback scenarios. Neat, appealing and well-balanced interaction style that fits the user & system requirements.	9,5-10	
		7,5-9,0	
	Relevant and convincing integration of design decisions by means of convincing assessments of alternatives. Decisions on layout, look & feel and interactivity provide a consistent and distinctive demonstration of the user engagement and adaptive feedback scenarios. Logic, clean and consistent interaction style that fits most user & system requirements.	6,0-7,0	
	Generic and/or incomplete integration of design decisions by means of limited and/or absent assessments of alternatives. Decisions on layout, look & feel and interactivity provide an unbalanced and/or confusing demonstration of the user engagement and adaptive feedback scenarios. Scattered and/or inconsistent interaction style that partially fits the user & system requirements.	5,0-5,5	
		<=4,5	
LO.5 - Testable demonstrator			
Implement, evaluate and demonstrate design decisions by applying hi-fi prototyping techniques 30%	Original and appropriate **testable** prototype of the user engagement and adaptive feedback scenarios. Specific improvements and suggestions are implemented for next iteration.	9,5-10	
		7,5-9,0	
	Consistent and logic testable prototype of the user engagement and adaptive feedback scenarios. Relevant improvements and suggestions are implemented for next iteration.	6,0-7,0	
	Unbalanced and/or confusing testable prototype of the user engagement and adaptive feedback scenarios. Generic improvements and suggestions are implemented for next iteration.	5,0-5,5	
		<=4,5	
LO.6 - Internal & external reflection and communication			
Evaluate, reflect and present processes and outcomes by applying collaborative, analytical and visual communication skills 20%	Integrated and reflective documentation of the process. Creative and attractive representation of final concept communicated by means of realistic and vivid representations of target group, context and product (persona, interaction scenario, UX vision) and translated into analytical user interaction specifications (HTA/UTF/AMD). Actionable project and team reflection. Proactive and transparent communication with coach.	9,5-10	
		7,5-9,0	
	Convincing and informative documentation of the process. Visually rich and balanced representation of final concept communicated by means of convincing representations of target group, context and product (persona, interaction scenario, UX vision) and translated into sound user interaction specifications (HTA/UTF/AMD). Specific and constructive project and team reflection. Efficient and open communication with coach.	6,0-7,0	
	Mostly descriptive and/or incomplete documentation of the process. Visually poor and unbalanced **representation of final concept by means of incomplete representations of target group, context and product (persona, interaction scenario, UX vision) and translated into basic, inaccurate and/or incomplete interaction specifications (HTA/UTF/AMD).** Superficial and generic project and team reflection. Inneficient and vague communication with the coach.	5,0-5,5	
		<=4,5	
GENERAL COMMENTS			

figure 29, an example of a rubric from a bachelor course

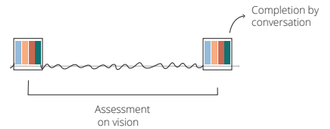
Explanation of Echo

During the first module of the first and second year the why of Echo is explained, figure below. The conducted research made it clear that explaining why something is done, especially reflecting, is very important for students' motivation. As students might forget this, it is mentioned again in the second year.



Assessment

During the conversation element, the design coach will not assess the outcomes of Echo. A form of assessment is implemented in the last semester of Echo, figure in the right column. This includes making a personal rubric point based on the students' vision as a designer. A rubric is a scheme to support assessment. It describes what can be seen as insufficient, sufficient and good, figure 29. A student writes a rubric point based on his/her own design vision. During the bachelor final project, the rubric point is used to assess to what extent the student used his/her own vision in the design project. This form of assessment is integrated into Echo due to the fact that it gives the opportunity to assess a result of the concept, though not the reflection itself. Furthermore, it increases the relevance of Echo for students and stimulates them to create a concrete vision and actually use it. This contributes to the goal of Echo; exploring one's kind of designer.
Echo is finalised during the last module by a conversation with the bachelor final project coach. Next to the evaluation of the bachelor final project, the entire process of Echo is reviewed and discussed.



Responsibility

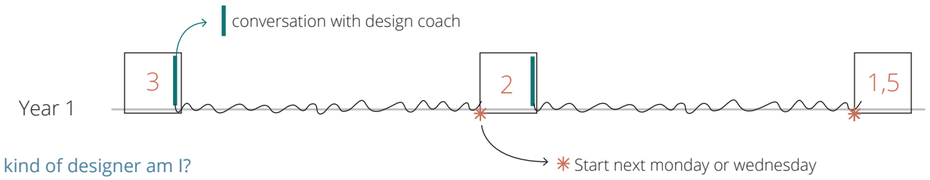
Following the vision, students are at all times responsible for their own process. I choose to make the modules partially mandatory to express the importance, to explain the why of Echo and to engage students with it. Interviews show that when an educational activity is not mandatory students might think it is not found important. Furthermore, they might not participate from the start and therefore will never know why Echo is designed and how it can benefit them. For Echo to work, explaining the why and experiencing this as a student is crucial. Otherwise, the risk that students just do it to check it off may occur. A teacher comments on this: *"It is good that students are responsible, this might change the culture in a positive way and when they notice it helps them, taking responsibility will be natural."*

The assignments between the modules are not mandatory, as the student is responsible and already engaged with Echo through the modules, it is up to the students if they want to perform the assignments. An exception to this are the reflection workshops. These workshops are important for the entire concept while a starting student might not see this. A bachelor teachers comments on these workshops:

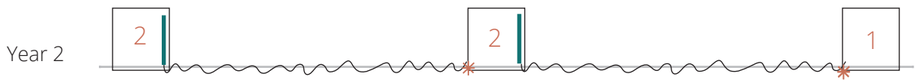
"Sometimes we forget that students have to learn how to reflect, we just ask them to do it. It is so good that that will be integrated."

So the modules are mostly mandatory and the assignments are not. The way students use and engage in the process for their own development is up to them. For example, some might do everything in multiple ways and fully engage themselves with it, while others only participate in the mandatory parts getting along with the basic elements.

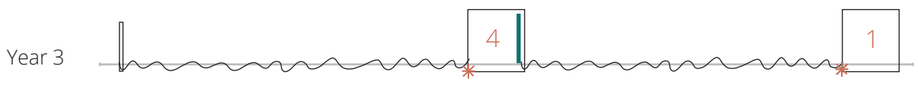
What is the field of design?



What kind of designer am I?



What is my design future?



number = amount of days for each module

figure 30, days and theme's

5.3 The content

The following part shows the content of Echo, that fills the previously explained outline. It starts with the overall structure followed by a year by year description, the contextual elements and the teacher role.

5.3.1 Overall

Theme's

The structure during the three-year bachelor is divided into themes for each year, figure 30. This theme is phrased by a question which forms the main focus of Echo for that year:
Year 1; What is the field of design?
Year 2; What kind of designer am I?
Year 3; What is my design future?

An interviewed bachelor teacher comments on these themes:
"This division, deepening through the years in which the question becomes harder, I think it is interesting, I like that"

Amount of days and minor

The modules contain several days varying for each module, figure 30. The first module of year three is an exception due to the minor. The minor is a part of the curriculum which students are free to fill in by themselves, this might be abroad or at another faculty. I choose to remove this module for various reasons. In this way, students are able to fully engage themselves with a different subject and surrounding. Furthermore, when starting a minor a lot of new information is presented during the first weeks, a module would make it impossible to fully engage with the minor programme and absorb all the new information. The minor is a valuable time for exploring professional positioning. Therefore, the module is not entirely removed. It consists of two questions concerning positioning, sent to the students at the beginning of the minor. They can answer these questions in the following module.

Conversation

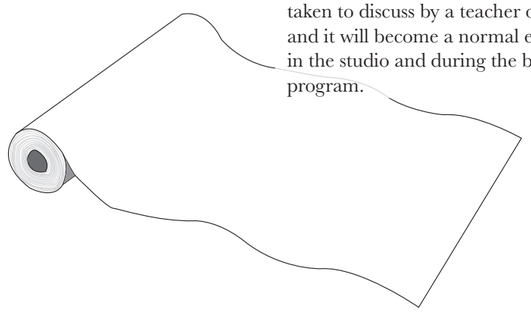
At the end of the first and second module, there is a conversation with the next design project coach. Students point out this conversation will function as a kind of deadline and will motivate the earlier activities. A bachelor teacher comments on this: *"Very good that student and coach speak to each other to get to know one another, I think it will also help me as a coach."*
And Coen, a bachelor student: *"This seems a nice way to discuss these kind of things, now I often find that hard."*
This conversation is with the next design coach to lead towards a future-focused (anticipatory) and overarching reflection. The topics reflection, positioning and navigation are discussed. For example, insights of previous modules, bachelor courses and assignments, outside curricular activities all leading towards future goals and questions.
As the new coach guides the student during the following semester, he/she can also support the student with how to improve. This step, from reflection to knowing what can be done to improve, is often found hard by students.

Start

The second and third module doesn't immediately start after the deadline or evaluation of the previous courses. In this way, there is *"time to do nothing for a while and take some distance from the courses"* as mentioned by a teacher. Also, students prefer this. The second module starts on the next Monday. The third module on the last Wednesday, as this is one of the last days of the academical year.

Set-up & documentation
Most of the activities during the modules will take place in a studio in groups of around 28 students. They will be guided by a specially selected team of IDE staff members (chapter 6.4). More practical aspects of Echo are described in chapter 5.3.9.

The results of Echo will be documented on a role of paper. Instead of a digital platform, this makes it very tactile and demonstrable. Qualities which both students and teachers very much liked. Furthermore, it is possible to look back, which resulted as a wish from the interviews and tests. The paper roles will be stored in the studio, in this way they can easily be taken to discuss by a teacher or student and it will become a normal element in the studio and during the bachelor program.



Questions
At the end of every module, students are stimulated to write down three questions they have and want to explore the coming semester. They can choose to share these with their design coach. In this way, the modules don't only consist of framing what you know but of framing what you don't know yet as well.

Finalising
When Echo is finalised students receive 3 ECTS (study points) for it. The choice of rewarding Echo with study points was based on the value of it. Echo is seen as important for students to run through. For example to contribute to the final attainment levels, positioning and lifelong learning. This is expressed by making time for it in the curriculum and rewarding it with study points.

Relation bachelor programme
Figure 31 shows the main input from Echo to the bachelor; the conversations with the design coaches, study choices, and vision. And the main input from the bachelor to Echo, the concrete course reflections & experiences and vision.
During the bachelor, Echo is separated from the courses, though it is connected. For example by the study choices and experiences that relate to positioning. At the end of Echo one of the results, the vision, is integrated into the education, to experience it for real and make it practically applicable. I think in this way Echo is separated enough to create an overarching abstract reflection, though practically applied and connected to the bachelor programme.

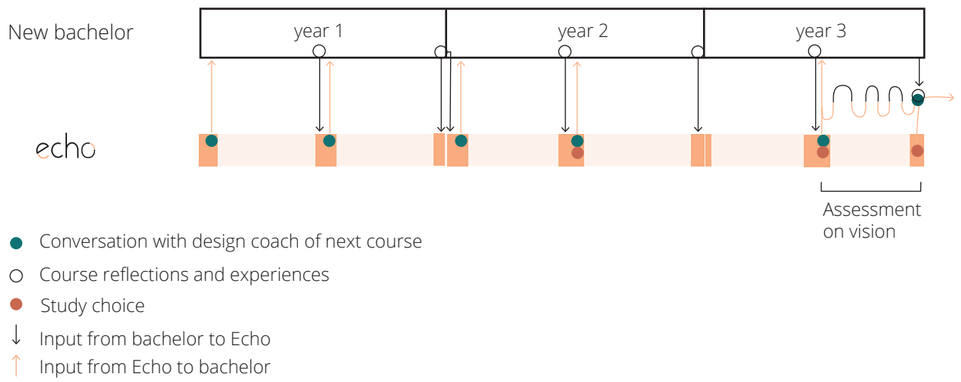
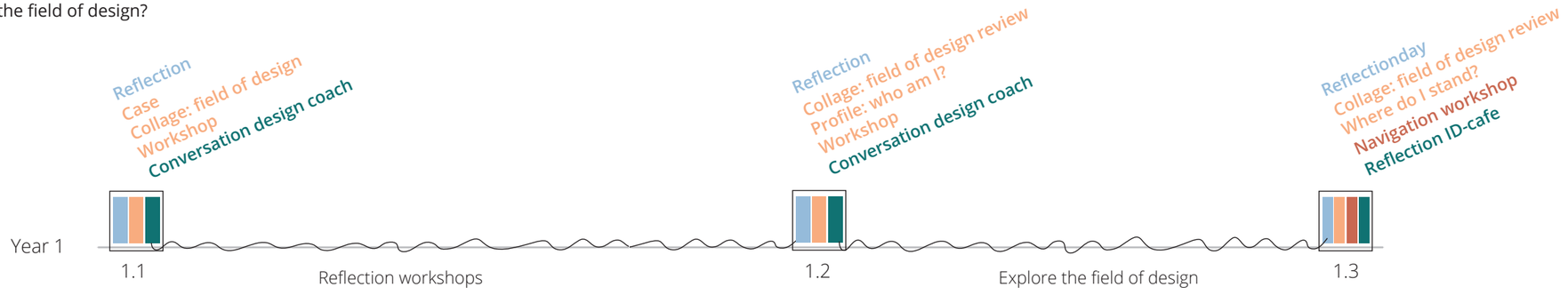


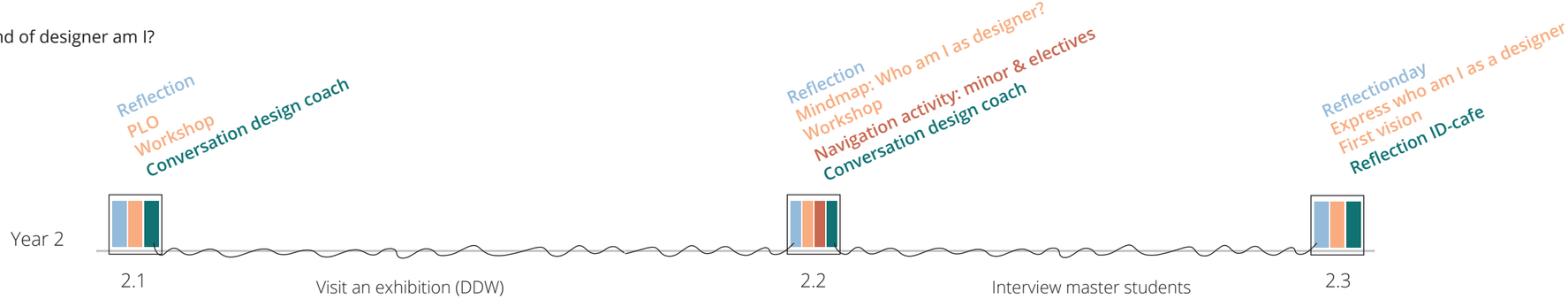
figure 31, the main input from the bachelor to Echo and from Echo to the bachelor

echo

What is the field of design?



What kind of designer am I?



What is my design future?

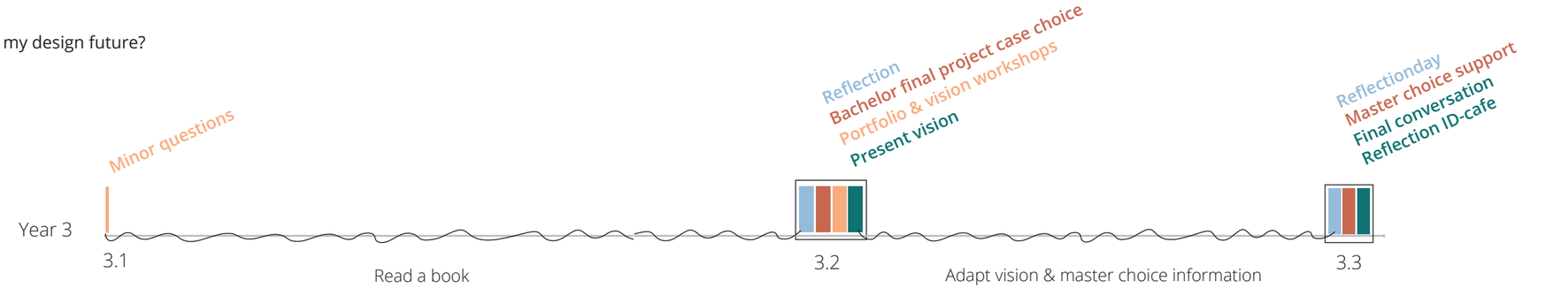


figure 33
collage test

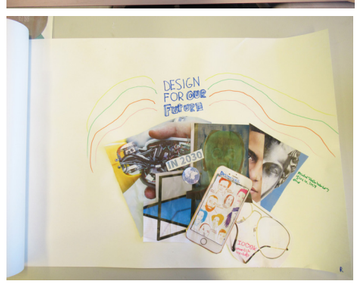
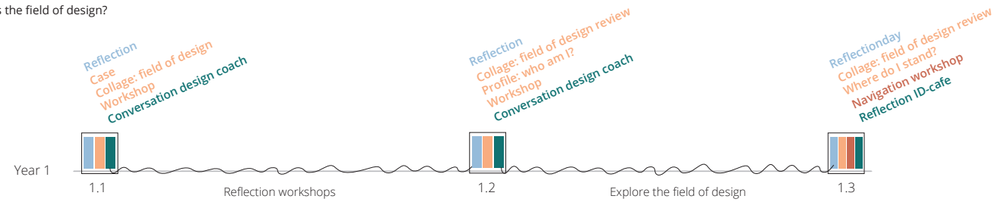


figure 32
collages of the field of
design by first year students

5.3.2 Year 1

The theme of year 1 is: What is the field of design. During this year the new IDE bachelor students start with their journey into the professional field of design.



Module 1.1

Reflection - day 1
The first year starts with module 1.1 and explaining why this concept is designed and implemented. This will be done within a studio by a mini-lecture of a staff member of Echo. It is followed by a reflection. This will concern the selection assignments, assignments that the students had to make to be selected for the bachelor of IDE. The students submitted these assignments in February. During this reflection, students are free to use any method they know. The students will be guided during this by the Echo staff. When reflecting on the assignments, the students will be reminded of why they choose to study at IDE.

Positioning - day 1 & 2
After reflecting, students make a collage about what they think is the field of design, figure 32. In this way, a first visual of what they think is the field of design is created. Making this collage was tested with students, figure 33, which delivered very positive results. They thought it was a relaxing and sociable process, where it is easy to get to know each other better. An effect which wasn't anticipated on but is very wished for as they are all new students at IDE. This also contributes to the envisioned learning culture of the new bachelor. Furthermore, students address that starting in a visual way is nice, as it is stimulated through the entire bachelor to work visually and the magazines provide input for an originality via metaphors and associations.
A bachelor teacher points out it is favourable they gain experiences in collage making and the use of collage's in the manage your master workshop (chapter 3.3) is very positive.

During midday, students participate in one of the several offered workshops regarding the fields of design, for example, service design. Students can choose their own workshop. The workshops are there to inspire students by showing bits of the large field of design. They are followed by first and second-year students mingled. In this way, the students can learn from each other. The first year students see a glimpse in the future while the second year students may think back/reflect on how he/she started. The workshops are given by professionals from outside the faculty to bring the outside world in.

On the second day, the first year students work on, one of the multiple offered, real cases from a company or institution. This can be at the faculty or, preferably, outside it. In this way, they immediately interact with the field of design and (hopefully) be inspired by that. They see a piece of what is possible in a company and how design can create value. Multiple cases are offered to avoid radiating one image of the field of design.

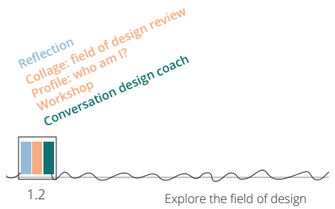
Conversation - day 3
The third day is about meeting the design coach. Every student has an individual conversation with his/her coach regarding the module activities. This conversation is not about the upcoming course but about the student's reflection and positioning. This is also a moment where the final three questions formulated by the student, previously explained on page 78, at the end of every module can arise or be discussed.

Assignment
The first assignment is workshops on learning how to reflect. During these workshops, three times 1,5 hours, students learn different techniques and methods for reflection, stimulating a profound anticipatory way of reflecting. Also, different ways of reflecting together will be discussed and practiced. Two test workshops were given to first-year students, of which one comments:

"I think I will really use this during my study. The way the steps are formulated helps you to directly make it concrete what you want to take with you."

Chapter 5.3.8 discusses these workshops in more detail.

Module 1.2



Reflection - day 1
The week starts with a reflection guided by the Echo staff. The students learned different ways of reflecting during the workshops and can choose themselves which they would like to use. A format or guide for the different learned ways of reflecting will be present and students can always discuss with the staff member what they would like to use. They are stimulated to use one of the learned methods to experience if they like that method and offer a handhold to the student. The reflection discusses the formed questions of module 1.1 and the experiences connecting to positioning of the past semester.

Positioning - day 1
After the reflection the collage made in module 1.1 will be analysed by the student and, in case their perception of the field of design is changed, the collage can be adapted. In figure 34, a student indicated in her collage what she thought was the field of design when she started the bachelor and what she now thinks is the field of design.
Also, students will make a profile of themselves with the use of magazines, figure 35. In this profile it is about visually representing yourself: where do you come from, who are you? A teacher experienced with this activity comments on this:
"It is not so much about what students create but about the process happening inside their minds."
Another teacher comments on this:
"I think that is cool, you also learn to present yourself."

Furthermore, the collage together with the profile aims to support students who have doubts about their study choice. At this point of the year, when a student wants to stop, it is still possible with relatively few consequences. They can, for example, discuss the collage and profile with an Echo staff member or take it with them to a study-counsellor.
In the afternoon there will be field of design workshops. (similar to the previous description)

Conversation - day 2
On the second day the students will meet their new design coach and individually discuss the activities of the module, the questions they formulated in module 1.1 and the new questions they want to formulate.

Assignment
As the theme of the year is; "What is the field of design?" the assignment for this semester is to explore the field of design. Students may determine their own way to do so, options like interviewing a senior designer, visiting a company or talk to some staff members will be given.

Figure 34
Collage what is the field of design review

Figure 35
Profile

figure 36
test reflection format

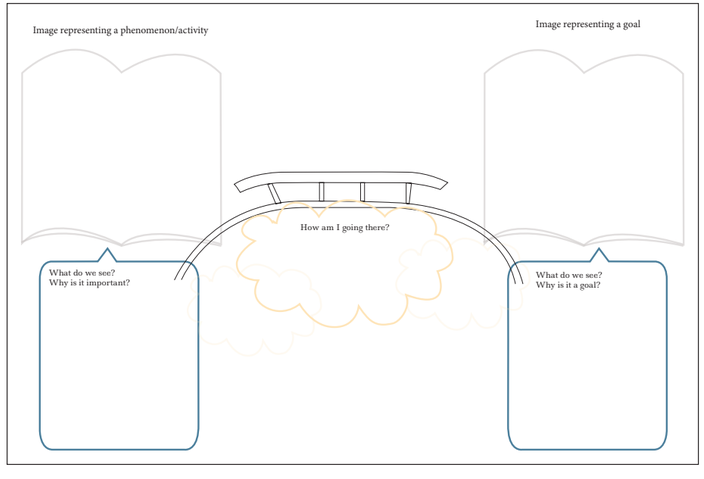
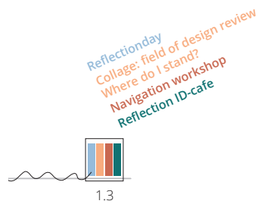


figure 37
reflection format

Module 1.3



Reflection - day 1
As usual, the week starts with a reflection, though this one is different from the others. On Wednesday the entire faculty: all bachelor students, master students and all staff members will reflect together using a set format, figure 37. This format was tested during two workshops, figure 36, with staff members at the same moment it is placed in the concept (just before the summer break). These tests showed that choosing a picture from magazines worked very well, so this medium (magazines) will be used. The reactions were positive:

"The fact that you have images and you can touch it instead of think about it on a blank sheet, which you have to fill with words, I thought was very positive. You make explicit what you actually already know, and make it demonstrable. I liked it."

This is envisioned to be an event in the main hall, using long tables with all the materials on them where everyone can take place and reflect. Long string lines will hang in the hall where everyone can hang his/her format during the day. Naturally, as reflection can be quite personal hanging your reflection anonymously is fine as well. At the end of the day, the format can be pasted onto the paper role.

Positioning - day 1
For the first-year students, this reflection is followed by reviewing and adapting the collage. This was tested with students and for all of them, their view of the field of design changed.
"First I mostly thought it was about making beautiful things and some technical aspects, but when I look at my collage now it involves way more."

- Tipi, bachelor student

After the review students will place themselves in the collage and indicate where they want to go.

The morning finishes with introducing the personal learning object (PLO), an activity in module 2.1 (further explained in that paragraph), so students can already chew on that during the summer break.

Conversation - day 1
In the last module, there isn't a conversation with the design coach as there will not be a design project following this module. The conversation is integrated by means of the reflection-ID cafe. ID cafe is the cafe of the student association in the faculty of IDE. This cafe will be a special edition: reflection cafe, where everyone (students and staff) can discuss his/her reflection while drinking together, closing the academic year.

Navigation - day 2
On the second day, a navigation workshop is planned. This workshop explains all the study related choices students will encounter during the bachelor, describing how students make choices and showing techniques to support making these choices.

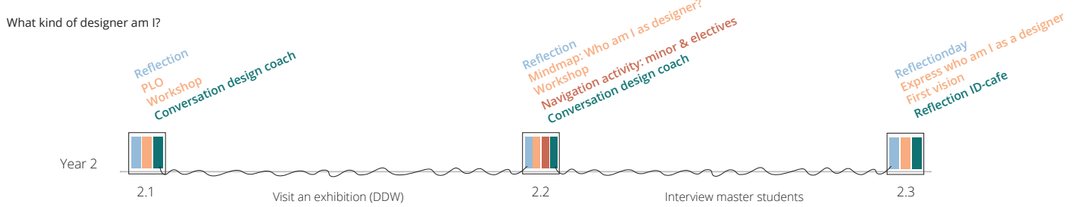
"This exercise also showed me that IDE is different from what I expected, it is interesting what I expected I like less then what I didn't expect."

- Lieke,
bachelor student

figure 38
An example of a Personal Learning Object made for the course creative faciliation

5.3.3 Year 2

The theme of year two is: What kind of designer am I? During the first year, students looked into the professional field of design and the belonging kinds of designer. The second year focusses on exploring what kind of designer they are and want to be.



Module 2.1

Reflection - day 1
Naturally, the module starts with reflecting. Students can choose their own method or way of reflecting. They are stimulated to try another method then they used in module 1.2 to experience several methods and explore which suits them. Students reflect on the previous module, summer break and experiences relating to positioning of the past semester. If a student did an extra activity during the past semester (a committee for example) this can be a topic for reflection as well. The Echo staff is available to support students during the reflection.

Positioning - day 1 & 2
After the reflection, the PLO, personal learning object, will be further introduced and worked on. The PLO is an object which represents, for example via a metaphor, what students want to learn in the coming year. Each student makes his/her own PLO in their own way. It is totally free of form. For example, someone adopts an existing book into a metaphor for what he/she wants to learn, figure 38. For the PLO students will intrinsically frame a goal, which following Deci, Lens and Vansteenkiste (2006) produce deeper engagement in learning activities, better conceptual learning, and higher persistence at learning activities. The goal framing can also support students in making study related decisions.
A teacher comments on the PLO: *"How will this look regarding form and regulations, what are the boundaries?"* This is a correct note, the activity will need some guidelines and is not developed fully yet, see chapter 6.1.
In the afternoon the regular workshops showing bits of the field of design take place.
The second day there is time to finish the PLO, after which they will be exhibited in the faculty. In this way, they can form an inspiration for other students and staff members. It shows a piece of how a design student thinks and it makes that accessible.
Privacy might be an issue here, though a solution for that is thought of. A lot of PLO's will probably use metaphors that doesn't make it instantly clear what is meant. The students may write their own text with their PLO and can, therefore, determine what kind of information they want to share or want to keep private. If a student doesn't want to exhibit his/her PLO a variation can be made: for example, displaying pictures of part of the PLO. In this way, a student can decide what to share regarding their privacy.

Conversation - day 2
The rest of the second day will be filled with conversations with the design coach, in which amongst others the PLO will be discussed and how to reach these learning objectives. Students can discuss the questions as well as for example study related choices.

Assignment
During this semester, one day is scheduled free to visit a museum, exhibition or other design events. For example the Dutch Design Week. This is a large event on design, annually held in Eindhoven. During this week a lot of designs are exhibited by different companies, institutions, schools etc. and activities around design are organised. Visiting this can inspire and show a lot of the field of design and different designers to students.
The Dutch Design Week is an example, students can visit another exhibition/museum or don't visit anything. It is their own responsibility.

Module 2.2

Reflection - day 1
The week starts with a reflection similarily to the ones before. Students may choose their own method and are stimulated to choose one they haven't used yet. In this way, they experience three different methods/forms of reflecting and can determine what suits them best for future use. They reflect on the PLO, formed questions, experiences relating to positioning and current module. In case students did an extra curricular activity during this semester this can be taken into the reflection.

Positioning - day 1
During the reflection the PLO is reviewed and can now be adapted.
The next activity is making a mindmap about the kind of designer they are.
It can contain influences from in and outside the study programme. This mindmap is a preparation for module 2.3.
In the afternoon there are the field of design workshops, earlier described.

Navigation - day 2
The second day starts with an information event on the minor and electives, which students are free to attend. The information presented will link to their existing knowledge, for example, the courses students already participated in and to different design tasks.

Conversation - day 2
The navigation activity is followed by the conversation with the design coach where the PLO is discussed as well as the assignment and mindmap. Students can talk about their minor or elective choice too. Three questions are formulated by the students again, which do not necessarily have to be shared with the coach, finishing this module.

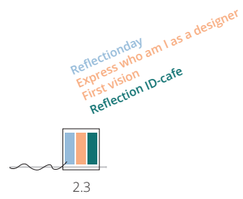
Assignment
The assignment for this semester is to interview one or multiple master students. This is incorporated to trigger students to start thinking about their master choice.
It was tested with students, one commented: *"Someone else confirmed my thoughts without that I asked literally, that was nice!"*

Both students indicated that probably not all students would do this while others would do three. Following the vision for the concept, this is fine; it is their own responsibility how they want to engage in the assignments.

"I didn't feel like oh I am doing this interview for Stein, it actually was a really nice conversation that took one hour."

- Maria,
bachelor student

Module 2.3



Reflection - day 1
As it is the third week the reflection is in the form of the reflection day with the entire faculty. Students reflect on the PLO and the assignment.

Positioning - day 1
This is followed by the activity: express who you are as a designer, in which there is total freedom of form and medium, figure 39.
The way students see themselves as a designer can be influenced by the study programme as well as by other activities. Both can be incorporated into one image. From this, students have to extract points to create a vision. This was tested with three students, one commented: *"I noticed that I was reflecting a lot during the activity."*
All students indicated they would like to present it and discuss it to inspire each other. In their opinions, the freedom of medium was very fitting for this activity.

Conversation - day 1
The day closes with the reflection-cafe, inviting everyone to talk and drink.

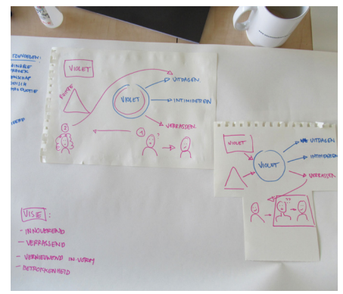
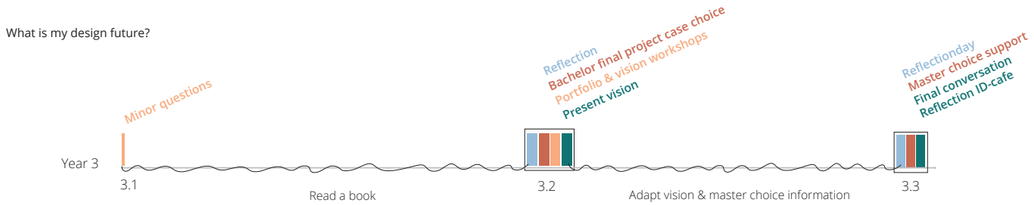


figure 39
activity: express who you are as a designer, as part of Echo

5.3.4 Year 3

After exploring the professional field of design and the kind of designer they are, this year students look to the future: What is their design future?



Module 3.1

Module 3.1 is not a module like the previous ones, as students are following a minor they might not be able to come to the faculty. Instead, they will receive two question to take with them:
- How does your minor relate to the field of design?
- How did your minor influence you as a designer?

Assignment

During the minor students receive the assignment to read a book. As this assignment takes place during the minor their won't be actual time planned for it. The assignment is there to inspire students to read a book, suggest titles and inspire students to use it for their vision. There will be a list available with books suggested by other students. This assignment is borrowed from the master elective "read a book", which is experienced as valuable by students. Of course, this can only count for students who actually chose the elective, not all students might like this. A teacher commented on this:

"Good! Even if they do not like it let them do it, it always gives some kind of new input."

The contextual element, chapter 5.3.5, the book wall will contribute to this assignment. Reading a book was tested with a third-year student during the summer break, just before she started her bachelor final project. The quote on the right expresses her experience with this.

During this semester, students receive the information (relating to existing knowledge and design tasks) regarding the bachelor final project and making an own rubric point.

"I read half of a book I wanted to read for a long time already but did not came to. It confirmed and further elaborated my thoughts about the design process and helped with creating my vision."

- Bachelor student

Module 3.2

Reflection - day 1
The second module of the third year consists of four days. It starts with reflecting on the study related choices; the minor and electives. Now the minor questions can be answered. As, following the vision, the guidance transforms to facilitation less Echo staff will be present and students are stimulated to reflect the way which suits them best. This can be a learned method, a combination of these methods or their own way of reflecting.

Navigation - day 1
In the afternoon all bachelor final project cases will be presented and questions can be asked.

Positioning - day 2 & 3
The second day starts with a workshop on developing a vision. The vision will support students towards the aim of Echo: finding your own kind of designer. The day starts with a general lecture regarding the basics of developing a vision, after which different teachers will be in studios to coach students. The students can freely move around retrieving feedback from whom they want to.
The afternoon is scheduled free to prepare the presentations of day four. Following the vision, on the third day, there is a workshop about making a portfolio. It starts with a short lecture explaining some basics after which students can choose their own portfolio workshop teacher. As the style of a portfolio can vary a lot this suits the best way to explore your kind of designer. At the end of the day, the results of the workshop will be shown at a portfolio exhibition to inspire others.

Conversation - day 4
On day four all students present their vision in their own way to their bachelor final project studio and coach.

Students have to write a rubric point out of their vision on which they will be assessed during the bachelor final project, figure 40 shows an example. A teacher commented on this: *"I think it is a very good idea to let students define their vision in a rubric, it forces them to be concrete and makes it possible to assess."*
A third-year student points out: *"It would make you more conscious of the way you design and if it really fits with your vision".*

Creating and presenting your vision was tested with a third year IDE student just before she started her bachelor final project, figure 41, on the next page.

Assignment

During this semester, students will adjust and (re)focus their vision. There also will be some regular information events about master programme's students can attend.

Vision:
" For me it is important that all my designs are ecologically sustainable and will stimulate people to behave more environmentally friendly."

	4	6	8	10
Vision	The design is less than 50% ecologically sustainable but does not stimulate people to behave more environmental friendly.	The design is 70% ecologically sustainable and partly stimulates people to behave more environmental friendly.	The design is 80% ecologically sustainable and stimulates people to behave more environmental friendly.	The design is 100% ecologically sustainable and is proven to stimulate people to behave more environmental friendly.

figure 40
an example of how a student can write a rubric point from his/her vision

"I really liked thinking about my vision, the past years were quite general but this is really something about my own identity. It helped me choosing a case for my bachelor final project and I immediately could use it with my internship application."

- Maria, bachelor student

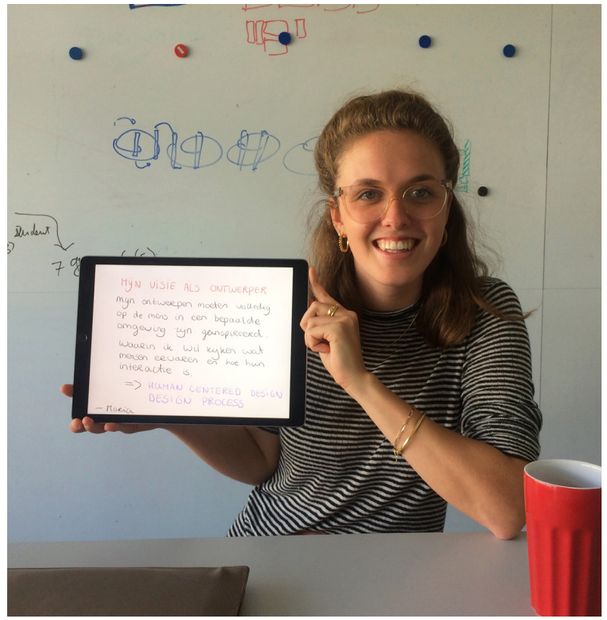
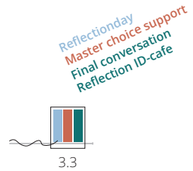


figure 41, testing creating a vision

Module 3.3



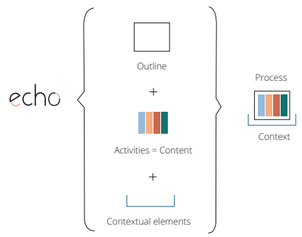
Reflection - day 1
This module starts with the general faculty reflection day, figure 42. This is similar to the previously described faculty reflection days.

Conversation - day 1
The final closure of the concept will be in the form of a conversation with the design coach of the bachelor final project. During this conversation, the entire process will be reviewed as well as the rubric vision point. When students pass the bachelor final project they complete the concept and receive a blue case to keep their paper role in. The blue case refers to the red one that graduating master students receive. The day can be closed off with drinks in the reflection cafe, for example with the entire studio and coach together.

Navigation - day 1
During this day it is also possible to get support in choosing a master. The way this support is offered need to be further developed, chapter 6.1.

figure 42, test of reflection day

As mentioned in the introduction, Echo consists of an outline filled with a content (previously discussed) and contextual elements.
The contextual elements will be further elaborated in the coming subchapter. Followed by some other aspects of Echo that hasn't been discussed yet.



5.3.5 Contextual elements

The wished ambiance and vision surrounding Echo are described in the design brief: it should be light, positive and inspiring. Firstly, during the modules, the results will be hung in the studios. Contributing to this there is an exhibition in every module, see figure 43. In this way, a lot of different results can be seen and Echo will become part of the environment. Especially first-year students get the chance to "look forward". The reflection day and reflection cafe will contribute to the ambiance as well.

As mentioned in the introduction Echo entails contextual elements as well. These are mainly designed to create/stimulate this ambiance; inspiring, open and positive. The contextual elements are an inspiration and book wall. These will not only be there during the modules but during the entire year.

figure 43, exhibitions

The inspiration wall

The inspiration wall will contain design, culture, science and research inspirations from within and outside the faculty. It shows developments and other inspirations from different fields to inspire everyone at IDE. It should not be a neat and ordered wall, it can be a bit chaotic with prints and pages torn from magazines for example. Everyone can contribute to this wall by hanging his/her own inspiration there. The inspiration wall will also contain a sticky-note part, where everyone can hang sticky notes with suggestions, thoughts or inspirations. The wall should be placed in a visible part of the IDE hall so everyone just passes it every day without having to go there.

The book wall

Next to the inspiration wall, a physical book wall will be created. The book wall contains books regarding the field of design and neighbouring fields. It can be seen as a small library; a place where students can borrow books. It facilitates to read a book and invites students to leave notes regarding opinions and recommendations about it.

It is can inspire students to read about different (new) parts of the field of design and neighbouring fields.

5.3.6 Learning lines

The aim of Echo, to find your own path, your own vision and own kind of designer are supported throughout the entire concept. To reach this goal the activities of the process build upon each other. Figure 44 shows the different navigation modules of the process, and figure 45 the learning line for creating your own vision.

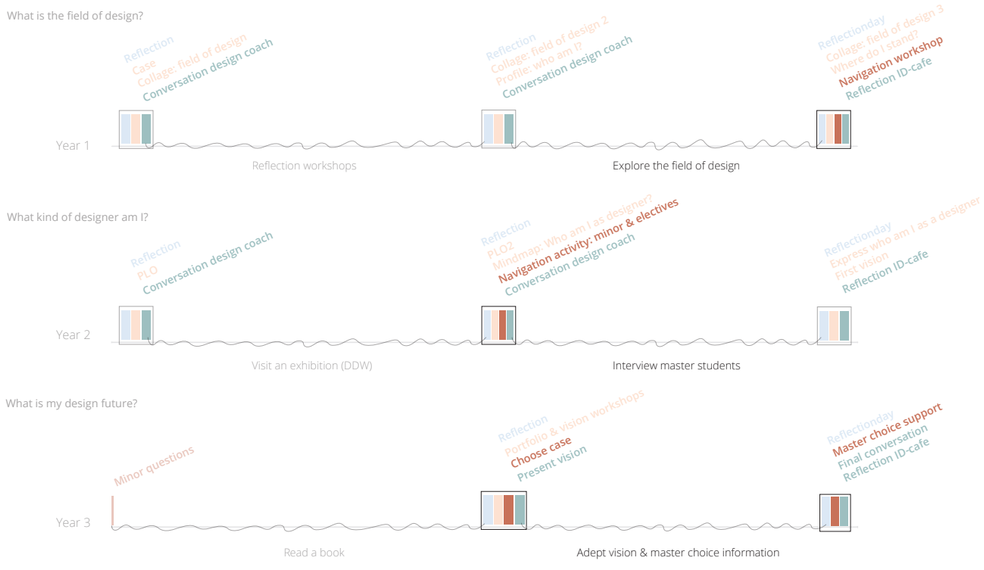


figure 44, learning line navigation

figure 45, learning line vision

5.3.7 Staff role

The staff role in Echo is very important, not only as a staff member of Echo during the modules but also the coaches during the design projects. An IDE teacher specialised in culture confirms this: *"how teachers see students and the culture amongst teachers influences the education substantially."*

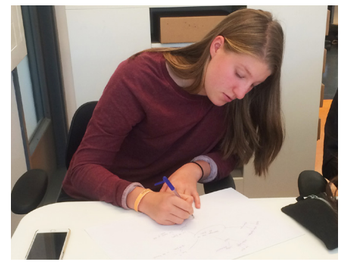
Therefore the role of the design coaches is very important. The concept needs to be embedded in the education not only by the modules and assignments but in the other courses as well. The conversations with the design project coaches form a start for this and need to be followed up once in a while. The quote on this page illustrates this.
The described behaviour will be supported by creating a place for these paper roles inside the studios. Furthermore, the concept aims to let students explore what kind of designer they want to be. It is important all design coaches stand behind the aim of the concept and radiate this to students.

In line with this, the teachers of Echo might be addressed by students for a conversation during the year. As students are encouraged to find their own feedback, teachers should be open for this. Naturally, within a reasonable time frame.
Next to the teaching staff, the study-counsellors have a role as well. When a student encounters study problems he/she can talk to the study counsellor. The paper role would be a good way to gain insights into the student. Naturally, this can only be used when the student wants to share this.

"That it becomes normal that the teacher occasionally asks: lets grab the paper role."

5.3.8 Reflection workshops

The reflection workshops during the first semester integrate learning how to reflect in the curriculum. They consist of three workshops of 1,5 hour each. The aim is to teach students how to reflect profoundly and in an anticipatory way, so they can use the results of their own reflections. They will learn multiple ways and methods of reflection as well as ways of reflecting together. Aiming that the students will be able to use what fits him/her best.
The first workshop is designed and tested two times, figure 46, it contains three ways of reflecting: making a mindmap, using the designed roadmap and conversing with another student. The roadmap used in the workshop is based on the previously presented research and specially designed for reflecting at IDE, figure 47 on the next page. The outline of the workshop presented on the following page, is a guideline which needs to be further elaborated on, chapter 6.1. During the workshops, it is important to level with the students and get a feeling for their level of knowledge and experiences and connect to that. This can be different for every group of students.



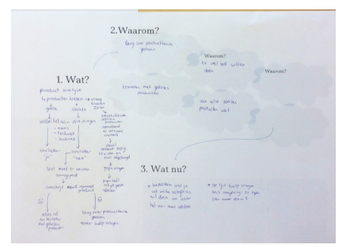


figure 46, test workshop reflecting 1

Reflection workshop 1

1. Introduction
In the introduction, the why of reflection and of the workshops is explained. Amongst others:
- to learn reflection is essential
- it can help with making study related decisions
- to know different ways of reflecting and find the most suiting for you
The use of reflection for themselves, to make it relevant, needs to be highlighted. During the introduction, the teacher can obtain a feeling for the group of students, try to connect with them and with their previous experiences: What do they think is reflection? Do they think it is useful? (How) did they reflect? The introduction ends with an explanation of the outline of the workshop.

2. Mindmap
A mindmap can be used to recollect memories and thoughts about an experience or period of time. It can be used as a reflection tool as well. It facilitates a visual way of reflecting. The mindmap can be introduced by the teacher by using an example, for instance about getting up in the morning.

3. The roadmap
After the mindmap, the roadmap will be filled in. The steps can be explained by using the same example as the one which has been used for the mindmap.
During the time students practice with the roadmap, the teachers can walk around and guide students
- What?
Stress that it is about which steps they took; how they acted.
- Why?
Focus on the way they acted and challenge the students to be profound by asking "why?" multiple times.
- Now what?
Indicate that students need to make it relevant for themselves, to be precise and concrete.
- See yourself as a designer
Ask students to fill in something; it doesn't need to be full sentences it might be words or questions as well.

4. Discuss it together
Students will discuss their roadmap together in pairs. It is about helping each other to be critical and make the reflection profound and future-minded.
Guide the students by giving some example questions like: "Can you explain why you did that?", "How do you think you can improve that? " or "What do you mean by ..?"

5. Present and discuss with the studio
At the end of the workshop, some roadmaps can be presented. The entire studio can ask some more questions about it. The use of the mindmap, roadmap and conversation can be evaluated: Did you like it? Why? Which elements? What would you like differently?

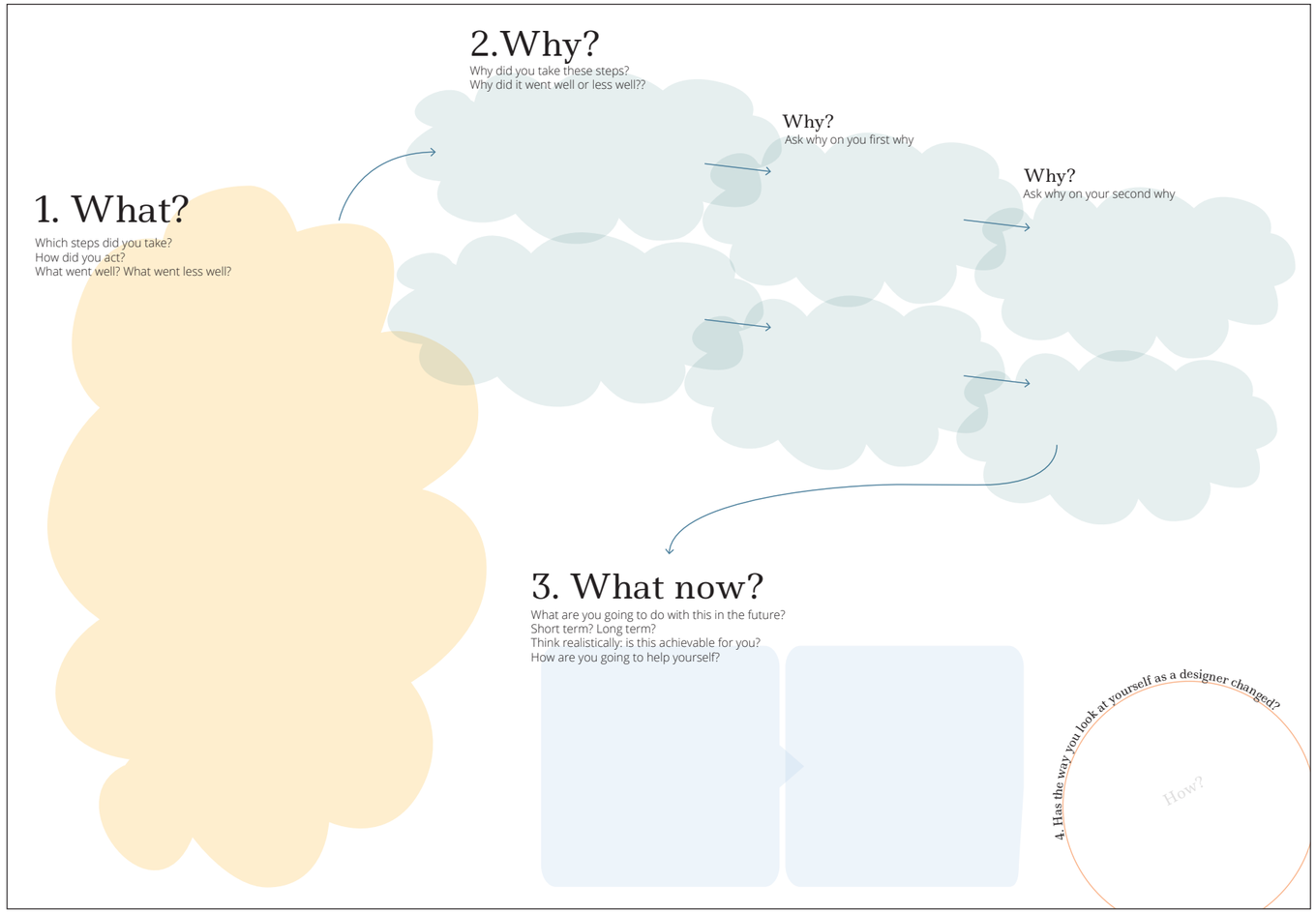


figure 47, reflection roadmap

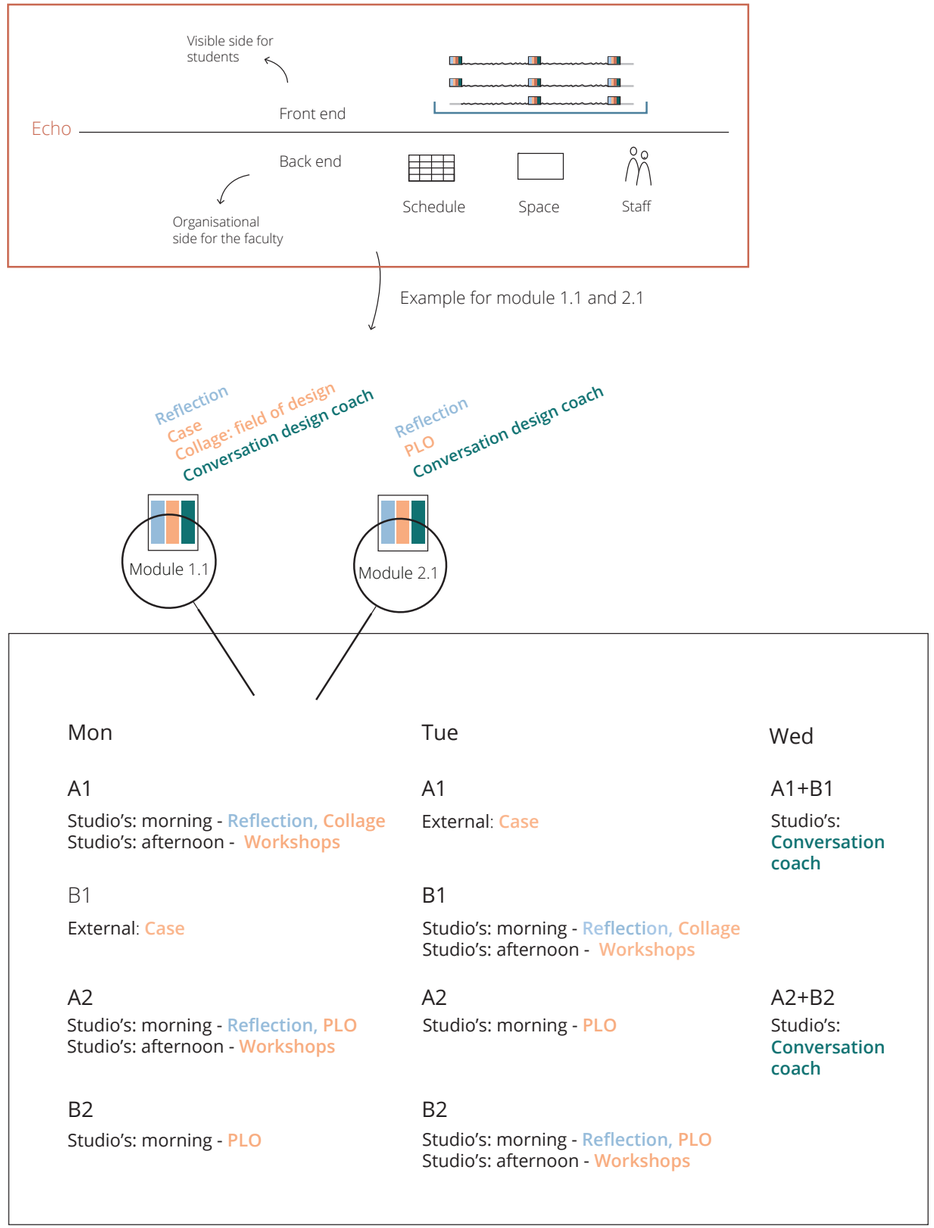


figure 48, example of a schedule

5.3.9 Practicalities

Echo consists of a front-end: the visible side, mostly for students, and the back end: the organisational side for the faculty. To practically implement this concept the back end has to be designed, mostly considering space and staff. An example, figure 48, shows a schedule for the first module.
To make a place for all the students, the students of the first and second year will be split up into two groups, which results in around 300 first and second-year students. In the figure this can be seen; the programme followed on Monday by the first half of the first-year students (A1) is followed by the second half of the first-year students (B1) on Tuesday and the other way around. This is similar for the second-year students.
An exception in module 3 is the reflection day where everyone will reflect at the same time (everyone can walk in between 9 and 13 o'clock) in the main hall. The 300 students (around 150 first-year students and 150 second-year students) easily fit in the studios at the faculty, leaving room for the third year students and also the lecture hall and drawing studios. This is necessary as there also needs to be space to facilitate module 2.3 and 3.2 for some students. This is explained later on.
Another option would be to start module 1.1 on Monday and module 2.1 on Tuesday. In this way, the need for space and staff is split between the days.
When the final concept is determined, chapter 6.2, a precise schedule can be made.

Next to space and staff, the students have practical needs as well. Some students do not follow the three years of the bachelor in a linear order. For example, by doing outside activities, an extra internship or a delay caused by illness. Therefore, it is very important that this will be taken into account. To solve the main problems all second and third-year modules will be given at multiple moments, figure 49. During the first year, most students participate fully. To prevent a more complex schedule, these weeks will only be given once. In case a first-year student can't attend, the Echo coördinator together with the student will come up with a solution. The extra modules will probably consist of smaller groups of students and will all be in one group. In some cases, for example, when a student follows module 2.2 on moment 2.3, the conversation with the design coach will be excluded. These results can be discussed during the next conversation or the students can find their own feedback by for example asking a teacher.

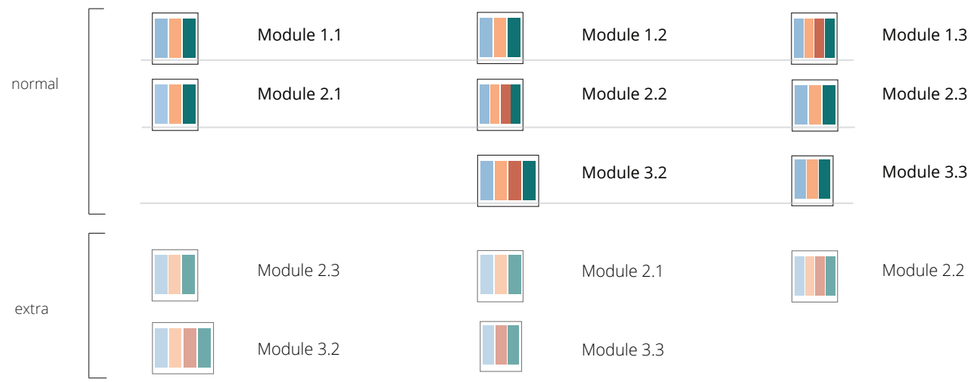


figure 49, modules given during the year

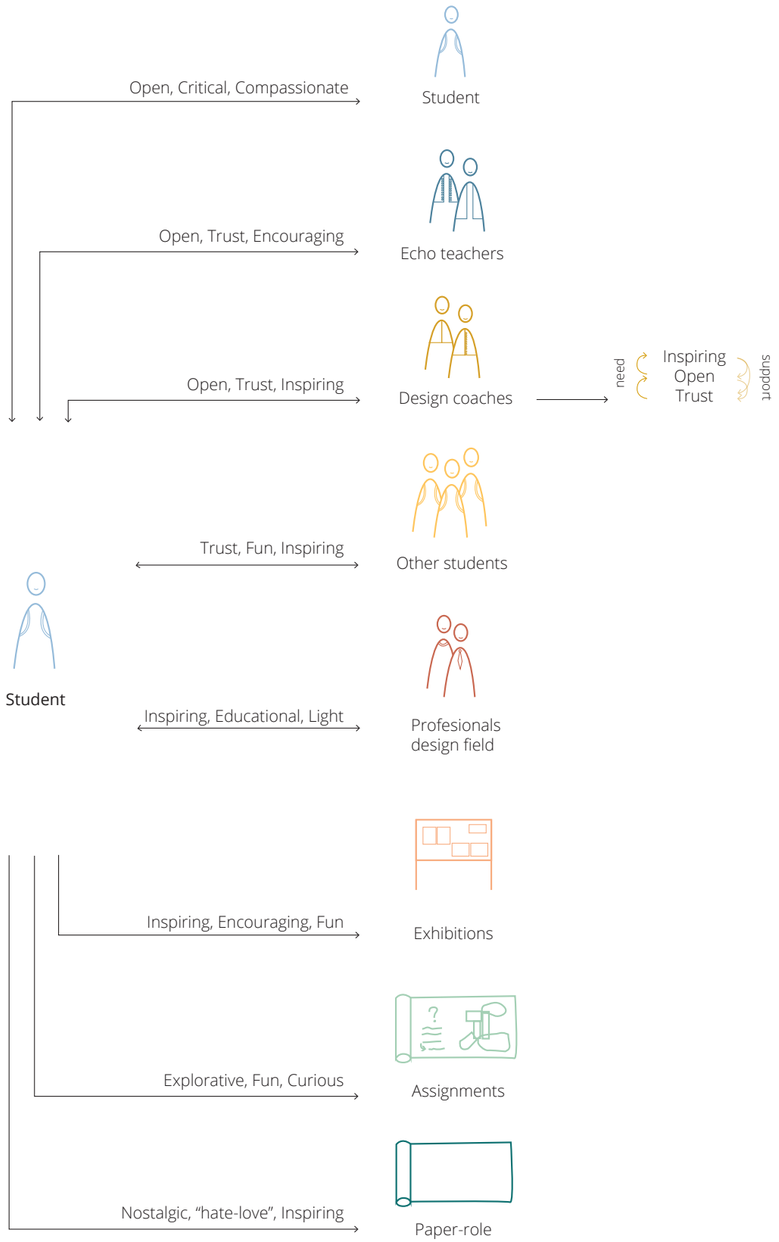


figure 50, different interactions

5.4 Interaction

This part describes the envisioned interaction between students, staff and Echo. It shows the different interactions that take place from a students perspective, for example, interaction with teachers or contextual elements. For each of these interactions, interaction qualities are envisioned, like inspiring and open.

Students are the main end-user of this concept, it is designed to support them in exploring what kind of designer they want to be, their vision and their bachelor path. When moving through the concept students interact with different parts of the concept as well as with different staff members. For all the interactions, interaction qualities are envisioned, figure 50. Interesting to note is that reflecting can be seen as an interaction with yourself. Reflecting triggers a conversation with yourself. The envisioned qualities for this interaction are open, critical and compassionate. I think, to be able to reflect, there should be a balance between critically reflecting and being compassionate with yourself.

The interaction qualities are based on the aim of Echo and the way it would ideally be used. Naturally, it is possible that, when really using Echo the interactions will not be happening following these qualities. Thought the way Echo is designed aim to facilitate these. Furthermore, they can be seen as a starting point to keep in mind when implementing and using the concept. The qualities offer a handhold for the staff and the way it is introduced to students.
Some qualities influence each other, for example, open and trust. When you want to be open to someone you need to trust that person. Though the other way around, being open, might help to create trust, figure 50.
For these two interaction qualities, trust between design coach and student and open between Echo teacher and student, an example is given to show how these qualities, in my opinion, can be facilitated.

Trust between a student and a design coach

As during Echo a lot of personal subjects are discussed, trust is very important. The interaction quality trust means that for example, a student feels comfortable talking about doubts, asking a question he/she feels insecure about, raising a weak point of him/herself. The students should trust the teacher in handling this information with respect and without judging the student and talking to other people about this. For the same reasons trust from a teacher in a student is important. For example, when a teacher shares a personal experience.
For both trust means to trust: treating each other and the given information with care and respect. The first individual conversation, happening during the conversation element of Echo, is an important moment for this. I think it is important that the teacher is open to the ideas and thoughts of the student. It can help the teacher to ask open questions and start by telling something personal about him/herself. That makes the relationship more equal: not only the student is sharing personal information but the teacher as well. If the teacher performed the activity that they discuss, (this is suggested for the implementation, chapter 6) for example making a profile of yourself, as well he/she could share this with the student. One way of creating trust, can be, for a teacher, by showing an open (see next example) attitude and radiate that he/she trusts the student. Probably the student is more likely to trust the teacher and act to the received trust.

Open between student and echo teacher

Being open is one of the main interaction qualities of Echo. As the concept is designed to find your own kind of designer it is important that students and teachers are open to all kinds of designers and thoughts about designing as well as other professions. In this case open mostly means that both students and teacher do not judge ideas/thoughts/opinions/ways of designing of each other and others.
A tip not to judge is to ask why? Why do you think that?
It is important to be aware of your own preferences, ideals and thoughts about subjects so you can notice when you make statements about them. It isn't wrong to share these, though it is important to be conscious it is your opinion/thought etc. and not a fact. Being conscious from which perspective you look makes it easier to recognise this. When a teacher is in a conversation with a student, tips to have an open interaction with a student are: asking open questions, showing a variety of examples, do not state things like: "It is…" instead use "I think…"

During Echo the different interactions take place at different moments over the years. A map is made, presenting the interactions during Echo, figure 51.

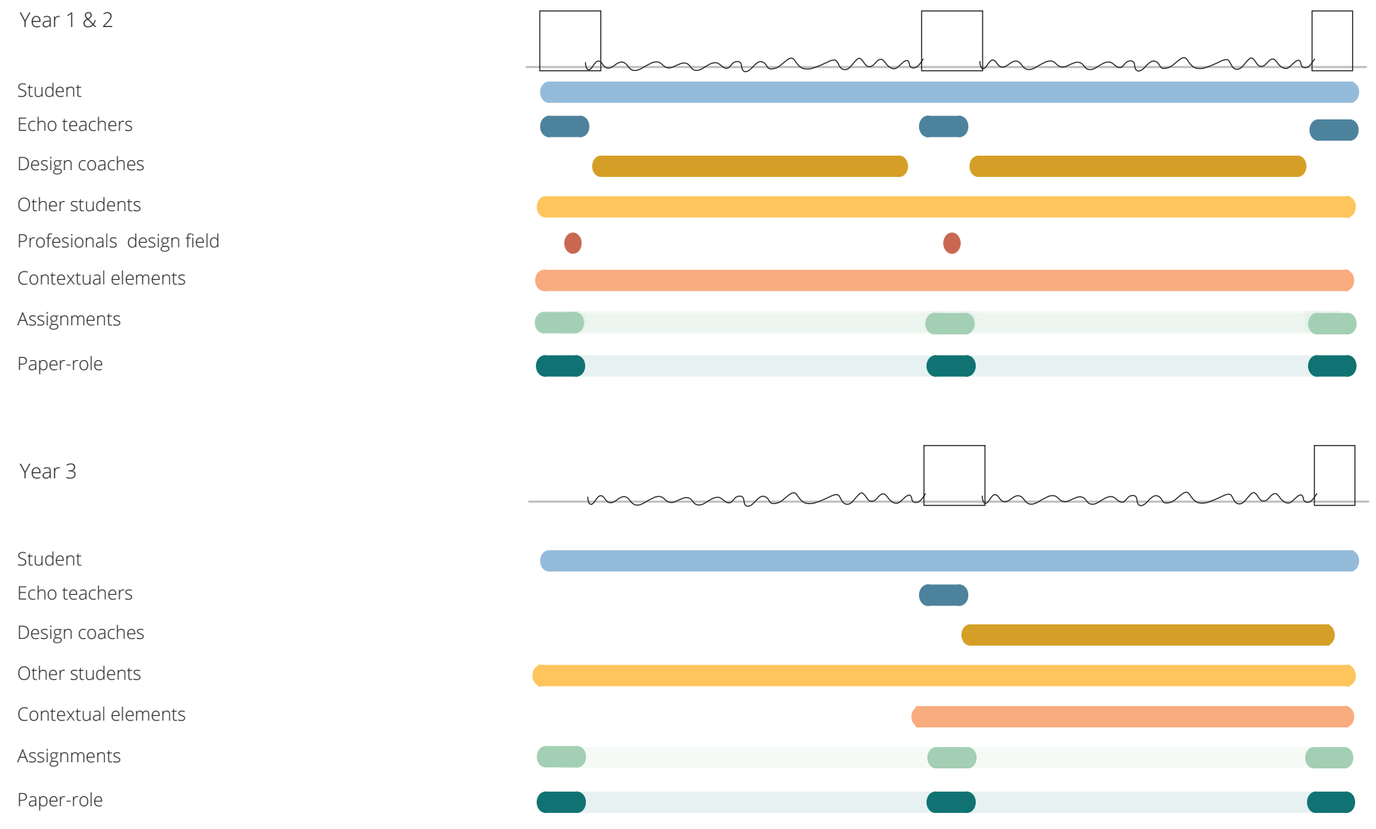


figure 51, interactions during Echo

6

Implementation

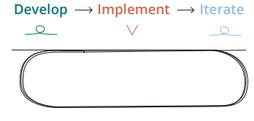
The implementation of Echo consists of three phases: further development, implementation and iteration. During these phases the concept is fully developed and aligned with the new bachelor, the staff is trained and organisational aspects are arranged. During the first use cycle Echo will be iterated. The chapter closes by suggestions of how to realise this implementation.

The new bachelor is envisioned to start in September 2020. This chapter describes how Echo can be part in this. First of all, Echo is flexible and open to adaptations. Echo is designed from an idealistic perspective. Meaning that during this project the feasibility was less important than reaching the goal (finding your own kind of designer). Thus before implementing Echo it should be evaluated if and how Echo will be integrated into the education. Probably Echo has to be adapted, for example, to fit the budget. An element of Echo which can relatively easily be adapted are the field of design workshops. These are intensive concerning costs and might take place in other courses as well.

Stages

When Echo will be implemented there are three stages to run through:
- development
- implementation
- iteration

These stages, figure 52, described in the coming chapters, can be seen as a design process on its own and can be repeated multiple times, figure below.



Way of implementing

The implementation of Echo should follow the way the new bachelor curriculum is implemented, for example, all years at once or year by year. This aims to immediately make it a part of the new curriculum and therefore as natural as the entire new bachelor can be. I would advise starting similarly with all years. The last bachelor renewal was implemented this way and was positively received (Faculty of IDE, 2012).
By implementing it for all years at once, every student follows the concept, which will make it more natural and easier to inspire each other. Also, the second and third-year students have a chance to experience a part of Echo. Even though it will need some adaptions for these years. For example, giving reflection workshops to these students as well.

Overall timeframe

The development of Echo should be finished around July 2019. In this way, the current academic year can be used for the different developments and the academic year 2019-2020 can be used for implementation and pilots.
The first iteration cycle will take place during the first year of use; the academical year 2020 - 2021.

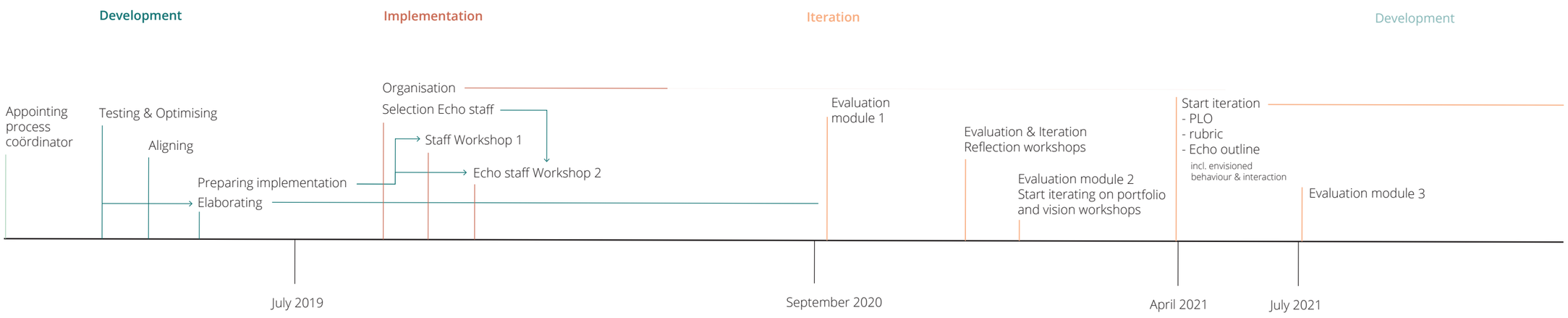


figure 52, implementation roadmap

6.1 Development

To fully develop Echo four steps are needed, figure 53.
Before the development can start an Echo coördinator needs to be appointed (chapter 6.4). He/she is responsible for developing, implementing and iterating Echo.

Step 1; Testing and optimising
This project didn't include the time needed to prototype and test every aspect of Echo. Yet I would advise doing this before integrating it into the curriculum. The parts that need elaborating are:
- The navigation elements
- The PLO activity
- The paper role, use and storage
- The reflection workshops and reflection day
- The contextual elements

An advice on who should elaborate these parts is presented in chapter 6.4. In collaboration with the Echo coördinator, (parts of) Echo can be piloted.

Step 2; Aligning with the new bachelor curriculum
To align Echo with the new bachelor the most important aspects are:
- align the navigation choices
- embed Echo in the curriculum
- accounting for the hours; Echo is rewarded by 3 ECTS, though the time needed for it is more, namely 5 ECTS (This includes the modules, reflection workshops and free day for visiting an exhibition. For the not mandatory parts students are not rewarded with ECTS.) This gives a time discrepancy of 7 days spread over three years. When actually implementing Echo this should be further elaborated on.

Furthermore, there are three points of advice which will help to align the bachelor curriculum better with Echo. The first one is to incorporate courses from the entire spectrum of the field of design. As this servers the goal (explore your kind of designer) of Echo. In this way, it can also be prevented that students feel they are pushed into one set designer image.
The second one is to let students choose their bachelor final project coach. As Echo finalises by a conversation with this coach and the process of (re)writing and applying the design vision, are important.
Finally, the role of the study-counsellor in Echo would be interesting to explore. For example that students always bring their paper role to a meeting.

Next to aligning Echo with the bachelor the alignment with the IDE masters should be looked at. Mainly for the Manage your Master course there might be a shifted need when finished Echo.

Step 3; Preparing implementation
The workshops given in the implementation phase need to be prepared. There is one for the Echo staff and one for all design-project bachelor teachers. More elaboration on these workshops can be found in chapter 6.2.

Step 4; Elaborating
Before it is possible to implement Echo in the new bachelor every part needs to be entirely thought out and ready to perform. For example, writing manuals, determining exact assignments and materials and making the lectures.
The elaboration can overlap with the implementation phase. If Echo will be implemented for all bachelor years at once, some small adaptations on the concept need to be made, for example, the introduction of the PLO.
Another element that needs elaboration is the communication of Echo to the students, containing the explanation of why it is designed in the first and second year. This element is very important because it introduces the concept to students.

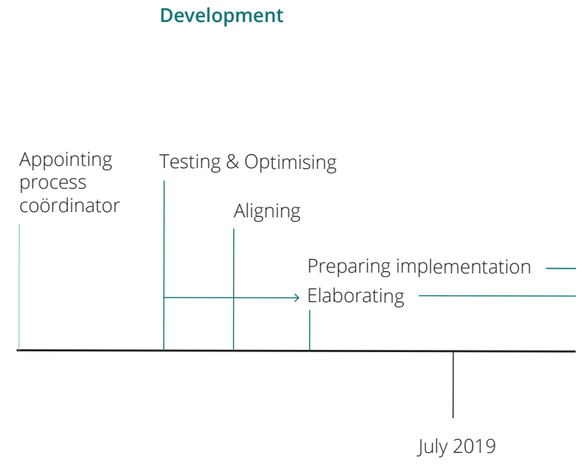


figure 53, development

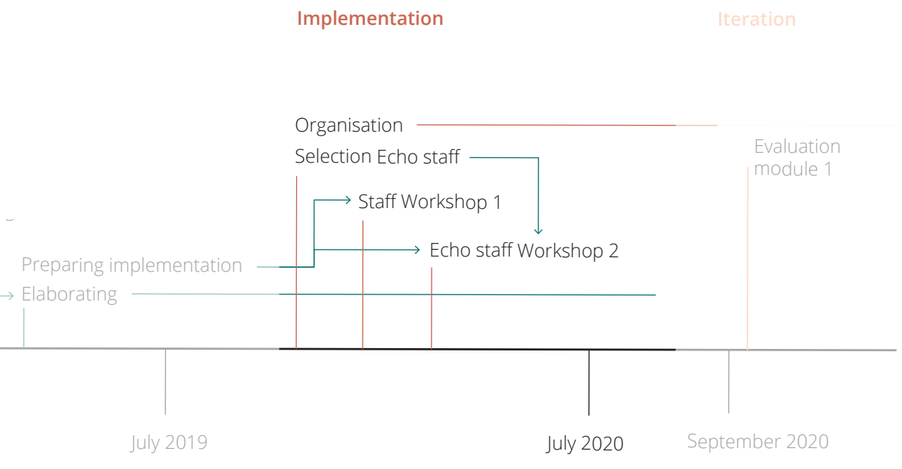


figure 54, implementation

6.2 Implementation

To implement Echo, figure 54, in the IDE bachelor two subjects need attention; staff and organisation.

Staff selection

During the implementation, the Echo staff needs to be selected. Fiona Matthews (2017), experienced with implementing new educational programmes, comments on this:

"You need to have those teachers who are going to be teaching it to become involved so that it's a shared philosophy."

The head of students and educational affairs at IDE advises using applications for this. In this way, people fitting to and motivated for this task can be selected. Chapter 6.4 describes the kind of skills needed.

The way IDE staff interacts with Echo is very important for the implementation, success and for the way it is perceived by students. This also appears from the interviews regarding the competence monitor, which showed that the implementation and use of the competence monitor were harder due to the fact that not all staff members supported it.

"Most people will endure a change if they know "the why" and feel that these efforts will make a difference for students. From the beginning, educators need to understand why reform is important, how it's designed to help, and what they can do to ensure success."

- US department of Education, 2011

Staff Workshop 1

The entire staff should do a workshop about Echo (this can be a part of a larger workshop concerning the new bachelor) containing explanation; why it is designed, how can they work with it and doing some of the assignments. This is an important aspect to ensure that before teaching or talking about (parts of) Echo, teachers and other staff members, have experienced it. Also, the envisioned interaction qualities should be discussed and practiced.

Echo staff workshop 2

The Echo staff needs to be trained. This training workshop should contain a deeper explanation of the entire concept. Furthermore, teachers will learn how they can coach students, based on the envisioned interaction qualities. This can contain small exercises like roleplay.

For all Echo staff, it needs to be clear what is expected of them. (personal communication, head of students and educational affairs). In this way, the Echo coördinator can also address them when this isn't fulfilled.

Organisation

From an organisational perspective, some practical aspects need to be arranged. These are:

- A schedule with all activities, spaces, students and teachers
- Prepare "Brightspace", the online communication tool, which is used by TU Delft
- Organise the case followed by first-year students during module 1.1
- Facilitate all materials needed for the different activities
- Organise the workshops

6.3 Iteration

The first iteration, figure 55, of Echo consists of an evaluation of all modules and an optimization of some aspects. All iterations are led by the Echo coördinator, who will be supported by staff members depending on the subject.

Evaluation
After every Echo module an evaluation should follow. Content for this evaluation can be derived from several sources:
- observations of the staff and Echo coördinator
- speaking to students
- the Echo results

During the evaluation, all ideas that come to mind should be written down and preserved. As a lot of parts intertwine with each other, after the first year an iteration of the global concept should follow.

Optimization
In the first year, I advise focussing the iteration mainly on the outline. As this is the backbone of Echo. In this case, the outline contains the envisioned behaviour (responsibility, motivation, see chapter 5) and interaction qualities (chapter 5.4) as well.
Furthermore, the reflection workshops, the PLO, portfolio, vision and rubric will be iterated on as these are important aspects of the concept.
When Echo is fully developed, the focus of this iteration might be adopted by the Echo coördinator reacting to a shifted need.

Way of iterating
As this is a design school and iterating Echo is a design process, it is an opportunity to involve students in this. A well-known statement in this school, I entirely stand behind, is that:

"users are the experts on their own experience."

- Sleeswijk Visser, Stappers, van der Lugt & Sanders (2005)

For example, test new things with a group of students and involve them in gaining insights. This can be part of their education, for example, an honours track or elective. Not only bachelor students can be involved, for master students and students from other faculties, for example, educational sciences, it might be interesting as well.

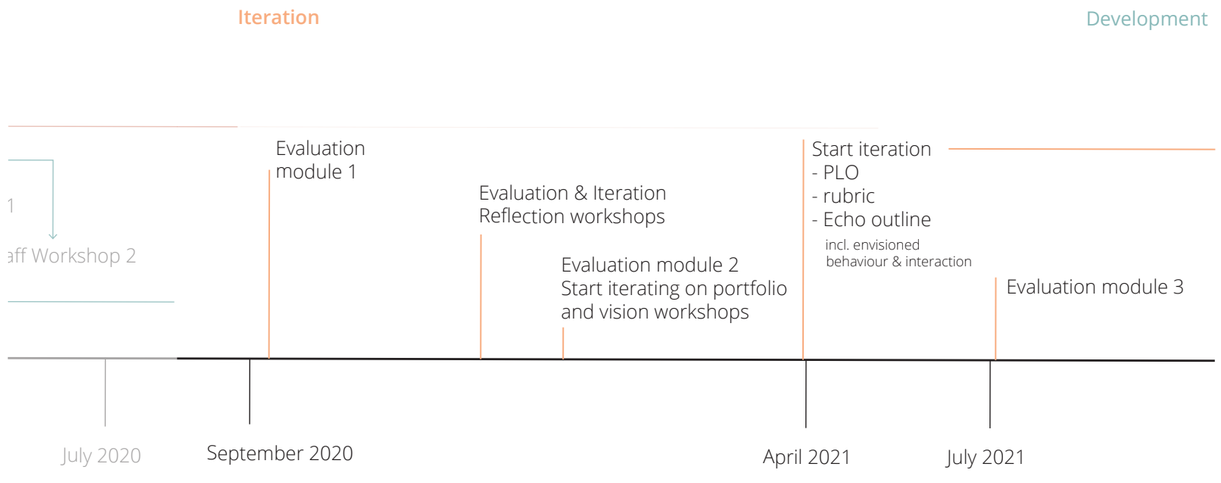


figure 55, iteration

6.4 Realisation

This part gives advice on how to realise the described implementation plan, concerning staff members.
Echo needs different types of people to be developed and work: an Echo coördinator, the teaching staff and different staff members that can support the development and iteration of Echo.
To coach students during a process like this, different qualities are needed than to coach a design process (personal communication, study-counsellor). Qualities for the Echo coördinator and Echo staff are described.

Echo coördinator

First of all, a coördinator is needed. In my opinion, it is wishful that he/she was involved in the design of this concept, so the choices made and the reasoning behind them are very clear. Naturally, the coördinator should stand behind implementing a concept like this and have the quality to communicate the need for this to others. More qualities needed for this function are in my eyes; to be open (regarding all different designers, students and processes such as Echo), critical and playful. He/she should know the organisation and education of IDE.

Responsibilities
The responsibilities of the Echo coördinator are:
- developing and implementing Echo
- the daily course and organisation
- iteration of Echo
- alignment with other courses
- being a point of contact for staff, boards and students
- quality assurance of Echo

Staff

The staff of Echo consists of different teachers that guide the students during the modules. To offer students different experiences, a variety of perspectives and personalities amongst the staff (work experience, background, age and gender) is wished for. Qualities of Echo staff members are, in my eyes: be open and enthusiastic on guiding students in processes like this and learning how to do this, be able to ask critical questions while don't give a feeling of judgment, encourage a student without forcing and be open to all different kinds of designers and views of design.

Responsibilities
The responsibilities of the Echo staff members are:
- guiding/ facilitating the students during the modules and when a student asks for feedback (within a reasonable time)
- give input for the evaluation

Development and iteration

For some parts of Echo that need to be developed or iterated, it would be good to involve other staff members. These members together with the Echo coördinator can decide on how to iterate and develop parts, for example how to involve students by co-designing. On the next page the (qualities of) future staff members are described, needed to develop different elements of Echo.

Development Navigation workshop, Information event and master choice support
- Study-counsellor; knowledge and experience with how students choose.
- Staff-member of communication; they know a lot about transferring study related information during events.
- Master coördinators; specific information about all the master programmes

Development activity profile
- A staff member of IDE experienced in guiding students with making a profile or self-portrait.

Development PLO
- Course coördinator creative facilitation; experience from the elective creative facilitation.

Aligning with new bachelor
- Bachelor coördinator of someone of the bachelor re-vision team; they have been intensively involved in the process of developing a new bachelor.

Preparing the staff Workshops
- Someone of the IDE staff that has a natural authority and respect of the educational staff possible combined with someone that can transfer information in a light way to involve everyone.
- Teaching lab; they have expertise in education and can help to develop and perform the workshops. Someone outside IDE can also help to have a fresh look.

Reflection Workshops and reflection day
- A staff member of Echo that, favourably was involved in the design of Echo, is a critical thinker and experienced with the IDE education.
- The board of the study association cafe (reflection cafe)

Portfolio and Vision workshops
- Teachers from different masters to be able to create portfolio/vision workshops with different styles and fitting to different designers.
- A staff member with knowledge about designers identity and how to express and create this.

Echo outline
- The coördinator of Echo should take lead in this as he/she has the overview of the entire process and can ask staff members involved in developing and iterating other parts to join.

Writing a rubric point
- Coördinators bachelor final project
  As writing the rubric point is part of the bachelor final project it would be good to involve the course-coördinators in this iteration. The bachelor final project has had a lot of iterations the past year so knowledge and experience with renewing education are present.

Contextual elements
- The board of the study association and student council; in this way students are directly involved which probably makes the content more interesting and relevant for other students.
- Member of the communication staff team; they know a lot about expositions and different possibilities for that.

7

Evaluation

Can you imagine Echo in the education of IDE? This chapter answers this question by a conducted evaluation of Echo. It closes with the limitations of the evaluation, conclusion and design changes.

Can you imagine Echo in the IDE bachelor?

7.1 Method

To evaluate Echo, I choose to mainly focus on envisioning Echo being part of the education of IDE. As the full concept could not be tested in the amount of time, the extent of which Echo supports students with self-reflecting, navigating and positioning was more speculative and less informative to evaluate now. To see if Echo is a concept imaginable in the education of IDE, is easier to envision and give an opinion on. Moreover, it provides information about how well it relates to the current context and users (as the new bachelor curriculum is not known yet).
As introducing Echo will provoke opinions, evaluating this will also provide a glimpse of the way it will be received.
The main research question to evaluate Echo is: *can you imagine Echo in the education of IDE?*
(Zie je Echo voor je in de IDE bachelor?)

To gain a complete evaluation multiple perspectives are considered, figure 56: students, IDE staff and a design teacher outside the context of IDE; DAE staff member Liesbeth Fit, earlier interviewed for the case studies (chapter 3.4.2).

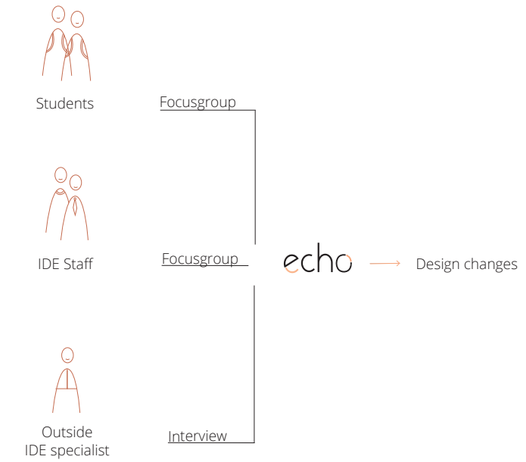


figure 56, evaluation from multiple perspectives

echo

Echo is een concept voor in de nieuwe flexibelere bachelor van IO.
Het is bedoeld om studenten te ondersteunen met zelf-reflectie, navigatie door een flexibele bachelor en professionele positionering.
Het doel van Echo is dat studenten hun eigen soort van ontwerpen exploreren.

Opbouw
Echo bestaat uit drie modules per jaar, bestaande uit een of meerdere dagen. Tussen de modules is er een opdracht om de mdoules te verbinden.

De modules zijn opgebouwd uit verschillende elementen:

Look back : Reflection
Now : Positioning
Discuss : Conversation
Look forward: Navigation

Het gesprek aan het einde van de module is met de design coach van het aankomende project. Het gesprek gaat niet over de vakinhoud maar over de activiteiten, positionering en studiekeuzes.

Activiteiten
De Echo activiteiten vinden plaats in de studio's onder leiding van speciaal geselecteerde en getrainde docenten. Door middel van een papieren rol worden alle Echo activiteiten vastgelegd en kan er naar terug gekeken worden.

Resultaten
De resultaten van Echo worden niet beoordeeld. Wel zit er aan het eind een moment waarbij studenten hun eigen rubric punt voor het bachelor eind project (BEP) schrijven. Hierop worden ze aan het eind van BEP beoordeeld.

Verantwoordelijkheid
De modules en reflectie workhops (opdracht 1) zijn verplicht, ze vormen namelijk de essentiele onderdelen zijn van Echo. De andere opdrachten zijn op vrij om te doen of niet.
De manier waarop studenten met Echo omgaan is hun eigen verantwoordelijkheid. Hoeveel ze eruit halen is aan hun zelf.

Afronding
Als Echo afgerond is, meestal na BEP met een afsluitend gesprek over het Echo process, ontvangen studenten 3 ECTS.

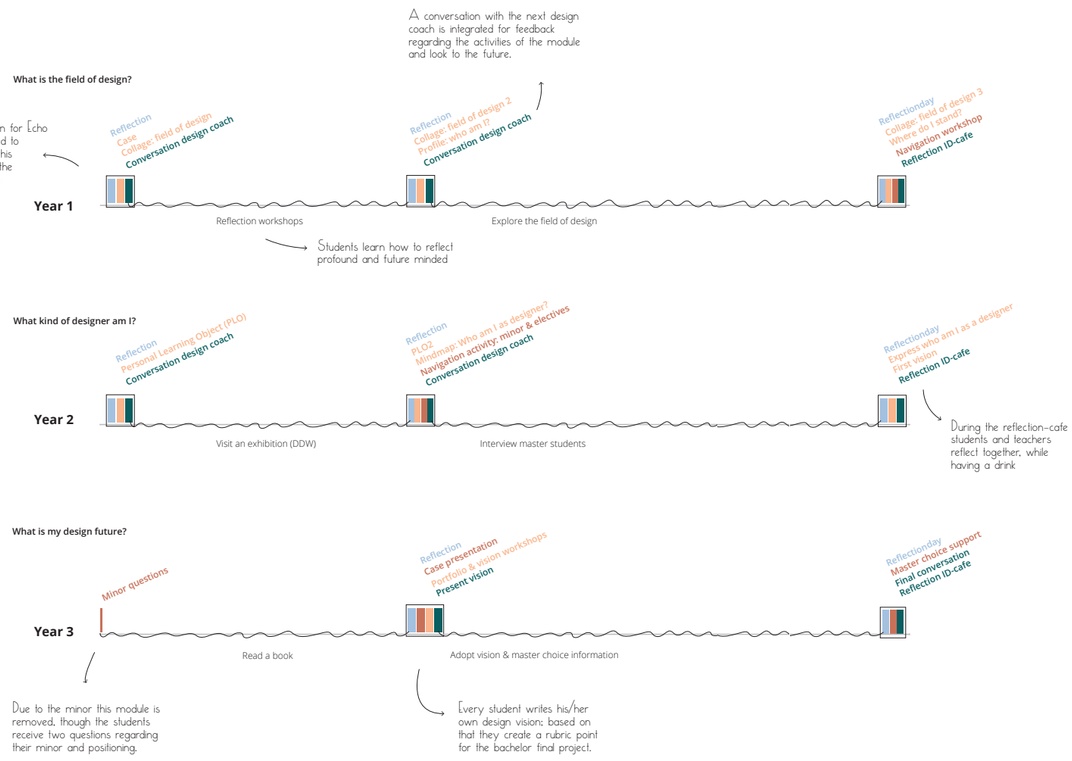


figure 57, explanation sheet

Focus groups
Two focus groups are conducted:
- one with a selection of students (different years of the bachelor, master-programmes, gender and earlier involvement in this project)
- one with a selection of IDE staff (different experiences and professions within IDE, expertise and gender)
When using a focus group an interactive conversation can occur and multiple opinions can be collected (Raats, 2017).

The focus group had two main parts:
1. Explanation
Echo is explained using an explanation sheet, figure 57. This contains the most important information to understand the basics of Echo.
The participants read the sheet after which the concept was discussed in further detail and questions could be asked.

2. Discussion
After the explanation the main question was proposed: *can you imagine Echo in the education of IDE?* (Why? What would be points of attention?)
Everyone was asked to first think about it by themselves before starting the group discussion. The groups' discussion started with naming a tip and a top, which made the feedback very concrete and surfaced the most important theme's. During the focus group with students, an extra question was asked: *How would Echo have influenced your bachelor experience?*

Interview
To gain an outside perspective, without current IDE bachelor experiences, one interview is performed with Liesbeth Fit, for more information about her see chapter 3.4.2
For the interview, the question, contributing to the main question, was: *to what extent is Echo seen as a realistic concept for self-reflection in design education by someone outside the IDE context?* It was a semi-structured interview using the explanation sheet and some main topics for evaluation.

7.2 Results

The results of the focus groups, figure 58, and interview are combined and split up into three categories: positive facets, points of attention and suggestions. The most important results are presented.

7.2.1 Positive facets

Overall
Overall Echo is evaluated positively, both the goal of Echo as the content is seen as important and valuable for students. An IDE teacher mentions *"It is a very good and well thought through concept."* on which another teacher commented, *"though still lively and creative within a continuity."*
Liesbeth Fit mentions:
"It is a very clear concept, which I think is really needed in design education to make students more conscious and support their development"
Both students and teachers mention that by using Echo, students probably feel more responsible and you get better and more authentic designers. They think this will influence the courses in a positive way as well.

Goal
A teacher specialised in the designers identity mentions that it is very favourable to let students explore their own kind of designer and that offering this diversity is valuable. Contributing to this Mila, a bachelor student mentions: *"Support in finding what kind of designer I am, even when I don't like everything, would make me more confident and motivated"*

Connecting bachelor courses
Another result is that thinking about positioning in this way, can connect all bachelor courses. When reflecting on the courses they can be connected to the position or vision of a student. This can give a clearer overview and link between the courses.

Specific elements
In a practical way, graduating student Zoe mentions that Echo would help to document, for example, the study choices. It makes it easier to look back and use them later on.
Removing the assessment on reflection (chapter 5.2) and using a rubric point on the students' vision instead, is positively reviewed by all the participants. A teacher mentions: *"it makes it practical applicable."*
Also integrating learning how to reflect is evaluated positively.
Lastly, the portfolio workshop was very enthusiastically received by students. Making a portfolio is important for them and support in this is wished for.

7.2.2 Points of attention

Motivation
The main point of attention is motivation. Liesbeth Fit mentions on this:

"For every new implemented educational activity, motivation is an uncertain factor. It has to be explored every time."

The students agree with this, although they think it definitely is an improvement on the current situation. During the focus group with the IDE staff, motivation was mentioned as well but less extensively.
Overall, all the participant understand the choices made regarding motivation and responsibility, though are curious about how this works in practice.

Staff
Another important point of attention is the staff. Mostly the intensity for staff and staff selection were mentioned. A staff member expressed: *"It is important to specify the criteria for the Echo staff."*

And Myron, a bachelor student *"the Echo teachers are so important for how Echo will work."*
The intensity of the staff mainly concerns the conversations and modules of multiple days.

Paper role
A less mentioned point is the paper role. Questions raised regarding this are: how do you keep an overview and how does it work with privacy when storing these inside the studio.

7.2.3 Suggestions
Presented below are suggestions for improvements of Echo.

Suggestions to improve motivation:
- go to the reflection day with your studio and teacher
- during the conversation support students with a lack of motivation by using prompting questions.
- present it to students as: we are going to help you become the designer you want to be
- use a pilot to test Echo

Extra suggestions for smaller adjustments that can, in the eye of the participant(s), make it better:
- answer the minor questions at the start of the minor as well
- involve IDE alumni
- use a preliminary vision in the second semester of year two in the bachelor course
- explore the question: who am I? before exploring what kind of designer you want to be

figure 58, focus groups

“I can imagine this in the IDE bachelor”

- Bachelor teacher

I think this would have an effect on me even now when I am finalising my masters, can we still do it?”

- Maud, master student

7.3 Discussion and conclusion

7.3.1 Discussion

This evaluation was limited by several factors. Most importantly, the complete concept could not be tested during the full three years. The evaluation considers what people think about it and can imagine but not what is really experienced. This also includes the behaviour of students regarding motivation and responsibility. As mentioned in the implementation, chapter 6, this should be tested. Furthermore, as mentioned in the focus groups, the way Echo will be implemented, communicated and which teachers will be selected will influence the experience of Echo a lot. As for the new bachelor, the real context is not yet developed and running, this might change results from the evaluation as well.
Lastly, as the focus groups took around 75 minutes, not every aspect of Echo could be explained. This can influence the way participants evaluated Echo.

7.3.2 Conclusion

As a conclusion the main evaluation question will be answered: *can you imagine Echo in the education of IDE?*
The evaluation shows that all participants can imagine Echo in the education of IDE. Though with attention to motivation, staff selection and the paper role. Especially motivation and the staff selection are evaluated as very important aspects of attention for the success of Echo.
The second question was: *“How would Echo have influenced you and your bachelor experience?* ”
Students mention, they think it would influence them in a positive way over a longer period of time than just the bachelors. Multiple reasons for this are mentioned. Practically, it would help in making study choices, being more conscious about positioning and having handholds for that. But moreover, students point out they would feel more confident in themselves as well as in what kind of designer they are. By Echo they would learn to use reflection to navigate and position themselves, also after the bachelor.
As a contribution for the main question, the sub-question for the interview; *“To what extent is Echo seen as a realistic concept for self-reflection in design education by someone outside the IDE context?”* is answered positively. Liesbeth Fit mentions:

“I think Echo is a realistic concept for self-reflection in design education. Not only at IDE, but in other design schools as well. There is a need for this”.

7.4 Design changes

From the evaluation some changes and recommendations for Echo were made:

- Motivation will become one of the main points of the iteration (chapter 6.3).
- I would recommend, for the new bachelor, to let students choose their own approach (from their preliminary vision) for the design course in semester 2.2, figure 59 (a).
- Students will answer the minor questions at the start of the minor as well as during module 3.2, figure 59 (b) (chapter 5.3.4)
- The integration of an extra possibility to work on the portfolio, this can be done in multiple ways, right column.
- The criteria for Echo staff (chapter 6.4) should be deepened, I would recommend doing this together with the expert on designer's identity.
- First-year students go to the reflection day and cafe together with their studio and coach (chapter 5.3.2).
- Explain and teach using prompting questions and when to use them, to Echo staff and design coaches in conversations with students.

- Move the navigation workshop in module 2.2 to module 2.1, so an extra portfolio workshop can be offered in module 2.2, figure 59 (c).
- Portfolio workshops can be part of the "field of design"-workshops
- Portfolio workshops integrated into the courses of the new bachelor.

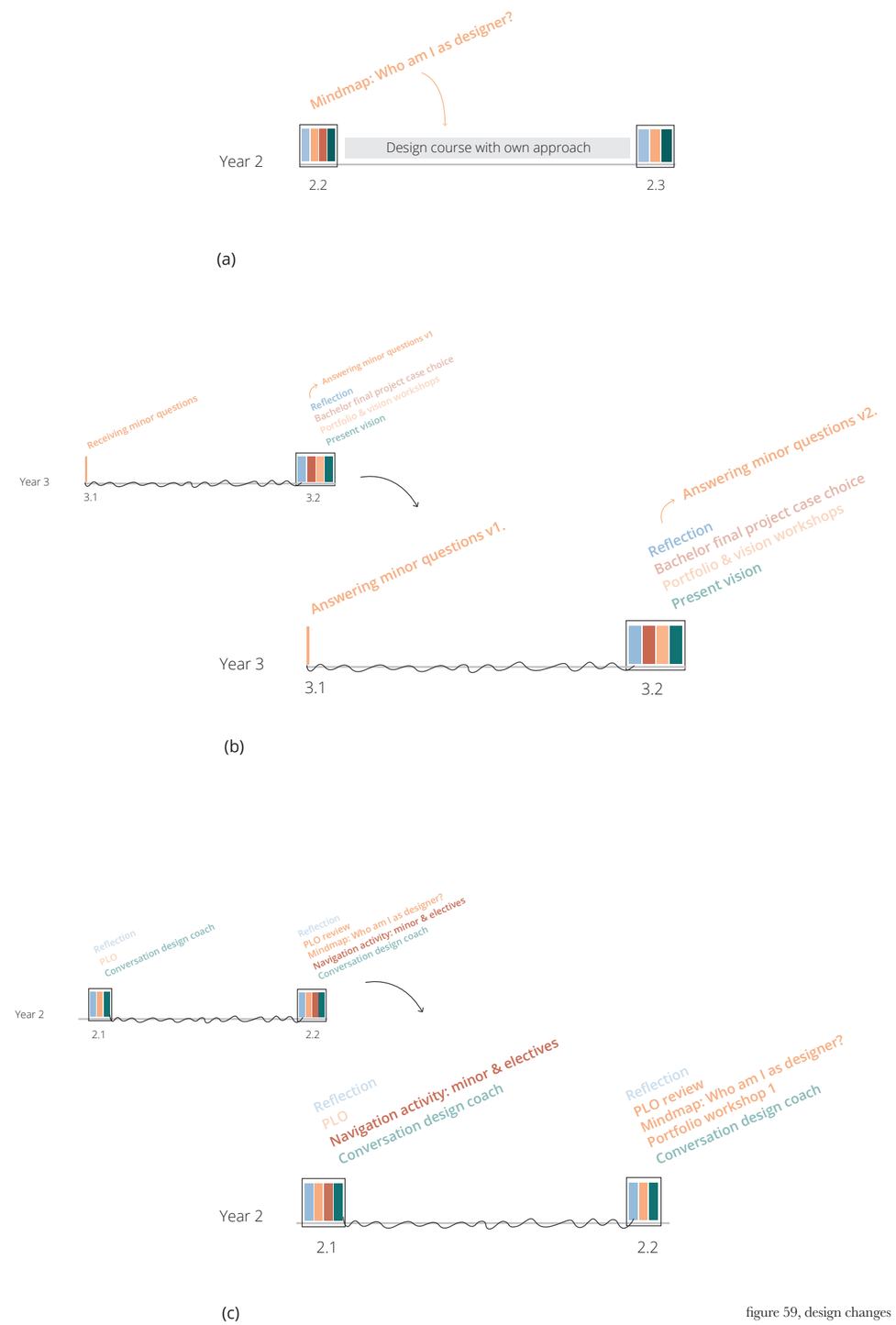


figure 59, design changes

Looking back (to look forward)

Looking back, a conclusion on the concept Echo is drawn and presented in this chapter. Followed by a personal reflection on the project.

1	application of reflection in thinking and acting on an everyday basis
2	specific reflection on incidents and or events
3	the development of understanding through interpretation
4	reflect on how we reflect

figure 60, levels of reflection by van Manen (1991)

figure 61, onion model (Korthagen, 2004)

8.1 Conclusion of Echo

Echo is a concept for self-reflection in the new IDE bachelor. This chapter looks back and concludes how Echo relates to the design goal, vision and some other findings of the field research.

This project started with:
"to design a concept for self-reflection, navigation through the new bachelor and professional positioning for IDE bachelor students."
In my opinion, Echo covers this assignment. All three elements; reflecting, navigating and positioning, are integrated into Echo. And resulting from the evaluation, the concept fits the IDE education.

As an elaboration on this, I formulated the goal;
"I want students to consciously explore what kind of designer they want to be." (chapter 4)
This was very important for me. From the interviews with students as well as my own experiences, it can be hard to feel not fitting somewhere, insecure about becoming a designer or to think you are not the right designer.
In my opinion, Echo supports students in reaching this goal, by offering freedom within a structure filled with different activities, like making a collage, and expressing who you are as a designer, supported by reflection (on the students as a person and designer as well as on the study choices). Of course, it is up to the student to what extent they reach this goal, though I think Echo triggers every student to be conscious about their position.

Levels of reflection
There are three aspects of the field research that I would like to review. When looking back to the levels of reflection described by van Manen (1991), figure 60, Echo includes all levels of reflection. When looking at the levels of Korthagen (2004), figure 61, it includes all levels as well. The inclusion of the inner level might be different per person.
I think together these lead to a profound reflection, which is useful for positioning.

Circles
Another important insight presented in the design brief (chapter 4.2) is the circle model, figure 62. I think that Echo, by using positioning activities, the students supports to develop towards the second circle. This might still differ for every student. Though by linking positioning literally to study choices (navigating) and making students conscious of positioning they are triggered to go towards the second cycle.

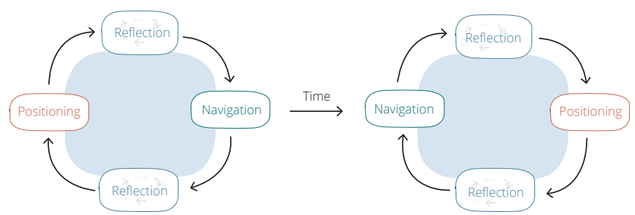


figure 62, circle model

Comparison case studies
With Echo in the bachelor, the table used to compare the different design schools (chapter 3.4) would look very different, figure 63. This concerns some points mentioned in the design brief as well. I think with Echo these aspects change in a wishful way.

Bachelor renewal
As a final note Echo might offer input for the new bachelor. Echo is designed for a, yet, not existing educational programme: the new bachelor of IDE. As the development of this programme is ongoing the substantiations and recommendations in this report can contribute to this.

8.1.1 Possible limitations of Echo
There are some possible limiting aspects of Echo. Some of these depend mostly on the lack of time for conducting a pilot study. These limitations are discussed in the implementation and evaluation of Echo.
Next to these, as reflection is very personal, it should be taken into account that this form (for example the paper role or use of collages), although it provides freedom, might not be optimal for every individual student.

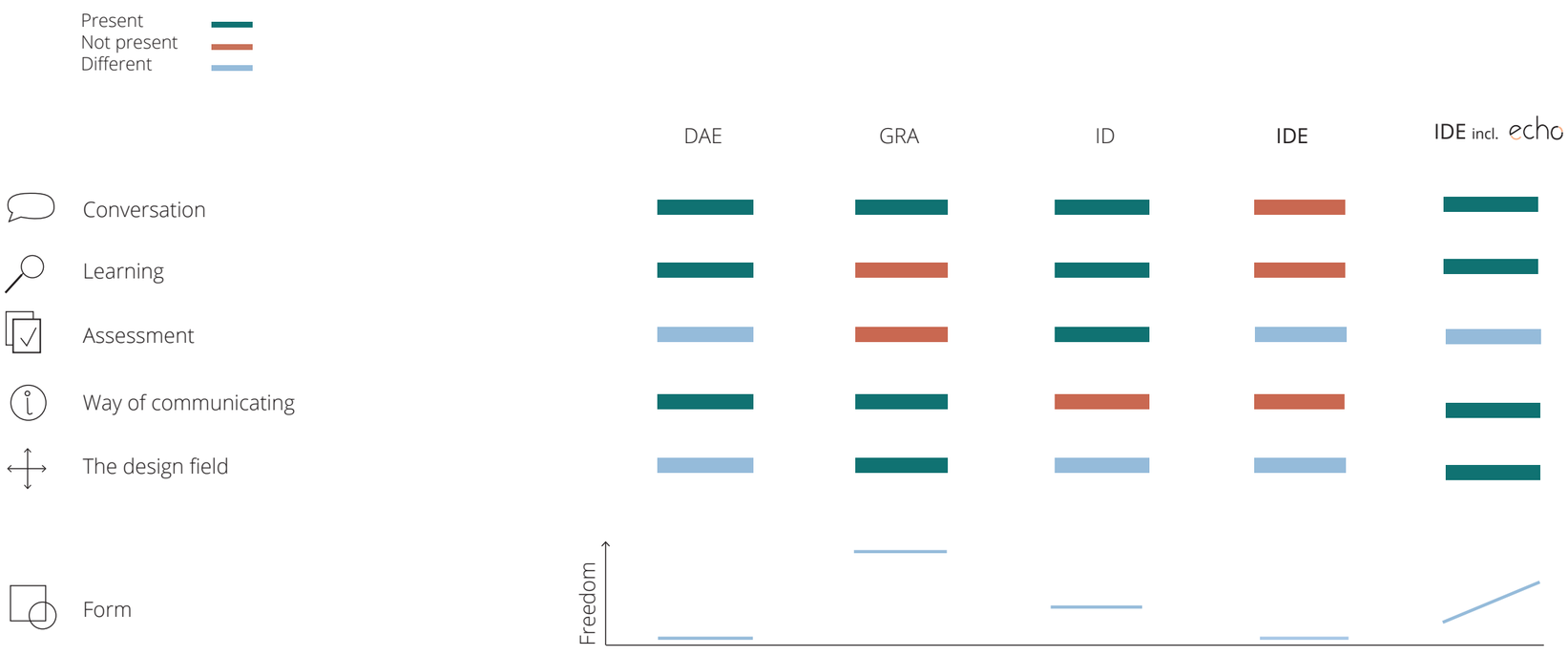


figure 63, table comparison case studies, IDE bachelor including Echo

8.2 Reflection

What a path!

As in this project I talk a lot about reflection, I set high standers for myself. It feels too early to properly reflect on this project, though I will try to live up to them.
For this reflection I decided split it in questions: What did I like?, What was hard?, Where am I proud of? and What did I learn, do differently next time and take to the future?

What did I like?

"Co-designing with end-users"

I mostly liked working together will all end-users. Talking and creating with them was inspiring and a flame of the project.
The exploration phase was my favourite. Why? I like exploring with real people and tying bits of information together to new insights. I also like to think of ways to get this information and let the user design. In this project, the end-users and context were very important to me. I believe they form the key to the concept.
I enjoyed that I felt I acted (mostly) autonomous and as a leader of the project. This was also thanks to the trust I felt from my supervisory team. It made me feel confident.
I like the puzzling; with structures, people, data and planning. (Why? I like structures they make sense to me)

What was hard?

" Balance"

I am a very hard worker, always striving to do my best. Balancing this with relaxing and less stressful moments was hard sometimes.
As a skill, writing and deleting was hard for me. When I am into writing I quite like it, though writing short but sweet is hard. Later on in the process, I approach it as a puzzle, which made it easier.
Deleting, deleting parts of my thesis, to keep the core and make it readable, was hard as well. I worked hard on every aspect and a lot of the work done can't be found in the thesis. Which of course serves the goal, though it was frustrating sometimes.
From the Echo content, the motivation/responsibility/mandatory question was a struggle. Where is the balance? How can you sustain decisions about this? It supported me to know that this is a struggle for a lot of new education.
Keeping the playfulness in the concept as well as offering a structure I believe in, was a hard balance as well. I tend to be very concrete and practical, which sometimes stands in the way of playfulness.
The last point, which I struggled with, was the balance between the "creating a new bachelor" meetings and progress and my own starting points. In the beginning, I attended some workshops, which were very informative though what to keep from them was hard. Several times I used a structure of the new bachelor, which was changed again. Later on, Sylvia and I decided that I wouldn't attend the new bachelor meetings to prevent this. This released me of the struggle and provided more freedom.

What am I proud of?

"100"

I am most proud of all the user involved activities. I am glad but also a bit astonished that I managed to involve so many end-users into the process in different ways. In total, I conducted 28 interviews and more then 100 different people participated in prototype test and sessions.
(Secretly I am a bit proud of the "Summer Thought's" workshop I facilitated for 40 IDE staff members, including the dean of IDE.)
I think this involvement made Echo as it is and that makes me proud.
Another thing I am proud of is my planning. I could almost follow the entire planning I made for the kickoff meeting. (only the graduation itself is 1 day later)

What did I learn, do differently next time and take to the future?

"Self-confidence & assumptions "

I will start with what I learned as that leads to the main points of what I would do different and take to the future.
One of the most important things I further developed is to not automatically assume someone is right because of his/her status or expertise. Always think about it myself. This leads to a deeper engagement and sustainment of my own beliefs and clearly formulate them. I will take this to future projects.
Connecting to this, as mentioned during the "what did I like"-question, I felt autonomous. I liked it though it also made me very insecure sometimes. As I am graded, this isn't a totally independent project, which sometimes resulted in a difficult balance between my own opinion and one of a member of the supervisory team. I actually learned a lot from this balance as well as from being (partly) autonomous.
A very important learning point was to recognise assumptions. Several times I noticed I didn't explain something fully or wrote down something very short as I unconsciously assumed the other things would be known. This, definitely wasn't always the case. I learned to recognise these assumptions and elaborate more on things I previously assumed were known or "normal".
Contributing to this is clarifying expectations. Several times I assumed things, like the need of this report to be formal or giving a presentation at the green-light meeting, which wasn't the case. This is also an important point of what I would do differently if I would do this project again.
In the future, I want to discuss everyone's expectations about a project/report/meeting with everyone involved.

I learned to engage users and feel relaxed about that. In the beginning, I was often nervous for interviews or creative sessions while doing the evaluation activities I felt relaxed and confident. I will try to remind this for future projects.

Another point what I would do differently is involving the expert on the designers identity earlier. He provided a lot of interesting insights during the evaluation. It would have been valuable to have these during the project.

Overall I enjoyed doing this project a lot. I believe it its potential value and hope Echo gets the opportunity to offer this!

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Echo, a concept for self-reflection
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