

# REFLECTION AND REFLEXIVITY ABOUT AN INTRODUCTORY DESIGN COURSE

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## ABSTRACT

We are two female academics, both educated as industrial designers with subsequent completion of a PhD degree. Although we both have quite a few years of experience with supervising students, we are relatively new in the role as educators with course responsibility. With a genuine desire to evaluate our work on planning and running an introductory design course, we initiated this paper as a means to learn about our own and the students' experiences with this first bachelor course in design. We use an educational approach called through-the-mirror writing to foster both reflection and reflexivity. Based primarily on educator-educator dialogues, complemented by two educator-student dialogues, we present and analyse a number of excerpts capturing important learning moments and conclude by suggesting implications for the running of future introductory design courses. Our main motivation is to learn more about how the course was perceived – what worked well and what can be improved?

*Keywords: Design course, reflection, reflexivity, through-the-mirror writing.*

## 1 INTRODUCTION

This paper serves as a means to learn about our own and the students' experiences with the introductory design course at the first bachelor year at the Department of Product Design at NTNU, the Norwegian University of Science and Technology. Although our educational background is industrial design and research into particular areas of the discipline, we now find ourselves performing in a, for us, relatively new field – as novice teachers in design education. As reflective practitioners, the need to question and evaluate our own approach is second nature: Who are we as educators? What counts as good learning in design and how can we facilitate it? How can we become better educators? To explore our questions, we found the approach of reflective writing particularly appealing.

The main idea of reflective writing, also called narrative writing, is that “All professional and personal experience is naturally storied; telling or writing stories are prime human ways of understanding, communicating and remembering.” [2, p. 203]. When we write we can raise awareness of the complexity of our practice and in turn we become more aware of our roles in relation to students and colleagues, get a better understanding of ethics and values, and develop empathic attitudes [1]. A critique against reflective writing is that not everyone stories their experiences and thus practitioners should rather engage more in better listening [1]. A counterargument is that it enables strategies to support such communication – through reflection and dialogue practitioners learn to listen to both themselves and others [1]. Reflective writing is considered an established component of reflective practice and a mainstream tool in qualitative research that increasingly gains status as a method, data source and technique for analysis across different disciplines [10].

### 1.1 About the course

The course, called Design 1, forms one of four courses (7,5 ECTS credits) in the first semester of the BA students in industrial design. The aim of the course is to introduce the students with different aspects of design as concept and profession, combining history of design, basic drawing classes, and introductory lectures on relevant design topics such as design process, composition of elements, low-tech prototyping, ergonomics and sustainable design. Design history, taught by a third educator, is part of the course but will not be dealt with here. Next to the material provided during lectures, the students get weekly drawing exercises at the start of the course and a larger design project in the second half of the semester, in which the students apply the knowledge they gained from the course in practice.

Through exercises and project work the students are introduced to the designer's ways of working and communicating. The course includes eight compulsory exercises of which the last four add up to the design project. In this second part of the semester, we sit together with the students for weekly design critiques. The design project for 2015 was to design an electric kettle with particular regard to solutions that can prevent overuse of water, electricity and material. Based on a product analysis of an existing kettle, the students choose one or two improvement areas. Students can choose to re-design the existing kettle or to design for a different brand. In this way, the project allows for an appropriate leeway and different preferences. Each student makes a model (foam, cardboard) of the final concept and gives a brief description of their solution in a final oral presentation for the whole class.

## **1.2 How does our course relate to contemporary design pedagogy?**

First of all, it is important to mention that the course design builds on the previous work of colleagues who have been developing and teaching the course in the years before us. The model of combining exercises and project work assisted by weekly critiques (in terms of order, number, scope) has been re-used and slightly modified. It has been common to vary the topic/product for the design project from year to year, keeping in mind that the product we introduce should be familiar, of a size that enables 1:1 models, and relevant for both of the two specializations product design and interaction design. Based on feedback from the students, we did include two curriculum books (on drawing techniques and design process) and introduced more traditional lectures that directly drew on this curriculum. Moreover, our experiences from own studies in different universities as well as supervising/teaching experiences contribute to the course design and our teaching style. This way of inheriting the studio design approach from previous generations of design instructors is very common, yet risks lack of a logical and practical base for the applied design pedagogy [7].

Traditional components in design education are: the studio and workshop environment, project work, the materiality of activity, use of tutorials and library, professional dialogue, the critique and contextual project research [14, 11, 4]. Maya and Gómez [12] identified a number of different pedagogical practices to teach design and structure them according to three categories: pedagogical models (PM), teaching methodologies (TM) and pedagogical approaches (PA). Based on their framework, our pedagogical practise for the current course corresponds to the *Studio model* (PM), *Project based learning* (TM) and *learning by doing* (PA). The *Studio model* centres around skills and behaviour and can be described as a location for working on projects individually or collaboratively. The projects are typically selected based on their applicability and conformance for practice within the particular design discipline [12, 7, 13]. In *Project based learning* a problem or a question serves as driver for learning activities and the knowledge process includes obtaining the skills to come up with solutions and continuous reflections [9, 12]. Another important feature, distinguishing it from problem based learning, is the construction of a concrete artefact [9]. In addition, projects leave students in control of the learning process regarding decisions on pacing, sequence and actual content [9]. This also resonates with *Learning by doing* which builds on the philosophy of Dewey [5], asserting that the most fundamental learning happens when engaging in action, trial and error, i.e. trying something, assessing how it works, reflecting on how to do it in a different way and repeating the process [12].

## **1.3 Reflection and reflexivity**

The relation between reflection and reflexivity can be understood in terms of their positions along a continuum where reflexivity is more active than reflection [6]. When we reflect, we relive and review a situation from different angles by asking: What happened, who was involved, how did we experience it, when and where did it happen, and why did it happen? [3]. Similarly, but on a different level, reflexivity involves an in-depth consideration. Reflexivity is about finding ways to question our own attitudes, lines of thought, values and assumptions [3]. Reflective writing can enable exploration into reflection and reflexivity, and accordingly support valuable learning about our own and the students' experiences with the design course.

## **1.4 Method: Through-the-mirror**

We used a particular approach within reflective writing called through-the-mirror writing. This way of writing is intuitive spontaneous and resembles initial drafting [3]. For the educator-educator dialogue, we made a list of noteworthy topics, wrote three narratives with individually chosen topics using through-the-mirror writing (storying), retold the stories and reflected upon these together, and selected

excerpts for further reflexive analysis. For the educator-student dialogue, we asked the students to write a short text on which experiences from the course they considered most important as well as what they would bring along from the course. We received feedback from only two students, even though we reminded the whole class several times. The student reflections were analysed and related to our own experiences. Together these learning moments form a basis for suggesting implications for future introductory design courses.

## **2 RESULTS FROM REFLECTION AND REFLEXIVITY ON COURSE**

This section presents results from applying through-the-mirror writing, which guided us in the process of reflection and reflexivity on the course. Results coming from the perspectives of the two educators are described and complemented by the insights and reflections provided by the two students.

### **2.1 Results educator-educator reflection and reflexivity**

The first step of the through-the-mirror writing process resulted in more than 15 topics, including: differences in background of both educators, work load of students and of educators, competences gained by the course, complexity in course structure, cooperation between students, course material, student grading, use of prototypes and models, selection of design project and theme, the role of the educator and expectations from the educators, amongst others. Although many of these topics have been considered and discussed during the preparations and fulfilment of the course, they remain areas for reconsideration and improvement for the upcoming version of the course for the autumn of 2016.

Six of the topics were taken further – three by each educator – to the second step of the through-the-mirror-writing process that focuses on re-storying. This resulted in one narrative per topic on 1) Selection of design project and theme, 2) the role of the educator with theoretical background in a practice oriented design course, 3) expectations from the educators, 4) complexity in structure of the course, 5) use of prototypes and models during the project and 6) critique sessions. The narratives offered the opportunity to reflect on what happened, who was involved, how we experienced it, when it happened and why. They served as a starting point for bringing the perspectives of both educators together in a discussion on each of the topics, as well as for exploring our own attitudes, lines of thought, values and assumptions. This conversation showed several linkages between the different topics, inspired the educators with several ideas for improvements and clearly indicated some main themes reoccurring throughout the six narratives. These themes are a) framing the design project, b) offering clarity in complexity of the introductory design course through organisation, c) the role and position of the educators and d) more profound reflection by students on design as a field of study and a profession. The following sections go deeper into each theme.

#### **2.1.1 Framing the design project**

The project to (re)design an electric kettle that focuses on diminishing use of water and energy was selected and considered by the educators to be appropriate to support the course aims. Although the educators considered the assignment to have a clear focus - offering room for individual preferences and development - the framework turned out to be rather open for the students and led to confusion and frustration amongst some students on certain moments in the design process. Students were asked to select two areas for improvement, such as the user interface and the handle, but many students did not manage to work within these limits and broadened their design ideas and proposals to the complete kettle, its shape, colours, materials used etc. Another limitation that was given was the materials for models, which also turned out to be difficult to comply with – as indicated in the reflection below.

*E: “In the final phase of the design assignment, the question arose from different students on use of other materials than the ones given (cardboard or foam). This question gave a dilemma to the teachers, as a) the students need to learn to work and design within the given boundaries, b) it is important to conserve similar conditions for the whole group of students. If one student gets allowance to use other materials, other students should get the possibility to do so too. That would mean we would have to deviate from the design assignment as described in the course syllabus. On the other hand, students also need to learn to think out of the box and use good argumentations for presenting a design proposal that goes beyond the assignment. This is an attitude that you want to encourage in future designers, as more and more often, the designer reframes the problem given by the client.”*

Reflections on framing the design project came forward in the narratives of both lecturers, in which the main question is related to how defined and narrow versus open and broad the framework should be in order to best support the course's educational goals.

M: *"We have to consider what the most important learning moments from the project should be from our standpoint. Is it to introduce an assignment that is relatively controlled - by giving a tighter framework with more limitations? Or is it to open up for a broader action space in which the students can manoeuvre more freely and that might lead to chaos and frustration at the start, but that will also lead to the experience of mastering the process when they end up with a unique result in terms of a presentation drawing and model? Is this uniqueness an important part of creating passion for design? Or is it better to impose a process with a more evolutionary character that might be closer to reality?"*

Discussing this issue made us realise that there might not be a clear answer on how to frame a design project. From a pedagogical perspective, it is encouraged to use a defined framework with clear restrictions and specific guidelines that give the student less autonomy but more guidance at the start of their studies – and subsequently move towards a higher level of autonomy and self-direction throughout the complete educational programme [8]. This ensures that students can focus on the content and specific skills without getting lost in the process and uncertainties surrounding the learning process. Design education however is very much based on learning-by-doing, in which the students usually work within a rather broad and open framework. There will always be a first time when the students need to jump into the deep, open water in order to get acquainted with a design process and its characteristics; the question is more about when to do that. Is it best to do this in the beginning of their education so that students know from the start where they are heading for in their professional life? Or is it better to wait longer so that they are more prepared, but in the meanwhile might build up a wrong image and different expectations of the profession they will practice?

### **2.1.2 Offering clarity in complexity of the introductory design course**

This course combines different topics and teaching methods in order for the students to gather new knowledge and skills on design techniques and design as a profession. This combination leads to a rather high complexity of the course, its structure and organisation.

E: *"At the end of the course, we realised that the students need more clarity on why the course is structured as it is – in relation to the goals of the course – and on how the different parts of the course are related to and build onto each other. An important thing to remember is that we discussed the structure and goals of the course several times, whereas for the students, it is their first design course in their higher education, next to the three other courses."*

Although the educators were aware of this complexity whilst preparing the course, the issues and problems related to it turned out to be more prominent than expected, in the sense that it had a larger impact on the students' understanding and learning trajectory as well as their experience of the course. The narratives from and the dialogue between the educators on the complexity of the course have offered several ideas for reorganising it, with a focus on a better understanding of the different parts of the course and how they are connected and support each other and the students' learning processes. One proposal that came forward is to start the design project earlier in the semester and connect the different lectures and its content – e.g. drawing techniques, the design process or eco-design – to the current process stage in the design project. This makes it possible to directly link the knowledge from the lectures with the training of the students' design skills through the design project.

### **2.1.3 The role and position of the educators**

Both educators have a master and PhD degree in industrial design from different higher education institutes in Belgium, the Netherlands and Norway. They have profound knowledge on the design process and theoretical background on different aspects of design, but limited experience as designers in practice. The reflection and reflexivity exercise brought forward that this theoretical profile causes a disparity between the way the educators would like to meet their role in a practical design course and the way they can fulfil this role with their background and experience.

M: *"When I stand in front of the first year students I feel that the distance between me and the practical part of design as a profession is too large. Right before the start of a lecture and the feedback sessions I often think about the expectations I had myself as a new design student. When I think back I believe that many of our lecturers were in the same situation I am in now – the will is there, but the time is lacking to work more as a designer in practice on the side of our job at*

*university. I do however remember that we met many professional designers and that these meetings made a large impact; they shared “real” and applicable knowledge that inspired us.”*

The other educator had a similar experience when she started guiding design students in practical design courses at another university. Through reflection on her role, she discovered and defined for herself that she can add most value to the educational learning process of students on aspects such as design methodology as well as strengthening the students’ reflections during the design process. Advanced drawing skills or model making might not be the specialisation of the current educators, but these and other skills and competences will also be focused upon by other lecturers throughout the educational bachelor and master programme. It is thereby important to have a complementary set of competences and skills within the teaching staff of an educational design programme from which students can learn all the necessary design skills and competences.

#### **2.1.4 Reflection by students on design profession**

As a result of the Norwegian entry system for higher education and a limited number of students in the Industrial Design programme (yearly 35 new students), admission to the specific Industrial Design programme requires high grade average. Based on grades thus, this should give a highly motivated group of design students. Despite this, it still happened throughout the course that some of the work delivered by students did not meet the expectations of the educators and whereby it felt as if the students did the work because they had to, without reflecting on the learning behind it or a reflection on how the exercises and projects can add to their future career as professional designers.

M: *“I notice that I get surprised and a bit disappointed when the work delivered by students is rather sloppy and when it is clear that they did not grasp the principles behind an exercise.”*

The disappointment felt by one of the educators is linked to the expectation that these students, given the high entry requirements, should be particularly interested and hardworking. The other educator had slightly differing expectations that are based on teaching at a design programme that has around 100 students yearly. In that programme, the quality of work delivered by the students clearly varies along a normal distribution curve, including a small group of students delivering high quality work. A recent (autumn semester 2015) rise from 30 to 35 students in the first year programme might explain a change in the average level of quality of the work and effort from the students. However, more insights are needed that offer the educators a better understanding of possibly sloppy results: is it because of a high workload, other priorities from the students, the level of difficulty, personal reasons, etc. These issues were discussed during the educator-educator dialogue. A proposal that came forward to raise reflection on the course is to collect expectations and personal goals within the course from each student – at the start of the course – as well as how these expectations have been met and what they felt they learned - at the end of course. This might offer room for personal reflection and it might offer insights and explanations for certain unsatisfying results.

## **2.2 Results student-educator reflection and reflexivity**

This section focuses on the results from the student-educator reflection and reflexivity exercise. We asked the students to write a short text on a) which experiences from the course they consider most important and b) what they will bring along from the course. Only two students responded on our request, which is not satisfactory, but the feedback still offers some important insights on the course. One of the experiences from the course, mentioned by both students, is linked to unclear boundaries of the project. This made the students unsure about what is expected from them, how far they can go with own ideas and solutions etc., as illustrated in the following quote:

Feedback student: *“After the closure of the past semester I have another feeling about this course than I had during the semester. The assignments sometimes felt poorly conceived and vague, [...] and the same goes for some of the information we received. But in retrospect it doesn’t feel wrong, as this openness of the assignments forced us to think in new ways. So in hindsight I am left with an experience of this course that was a bit frustrating, but also very instructive.”*

This feedback is much in line with our reflections on framing the project, and although the openness of the framework sometimes leads to frustration amongst the students, it simultaneously enables them to have a valuable learning experience. Another point that came forward is the need for more step-by-step guidance throughout the design process, including what is expected as a result from each step. This was mentioned by one student, whilst the other student indicated that this *“stepwise process to*

*design a product*” is the part of the course he will remember most. This indicates differences in students’ individual needs which should receive more attention in the critiques sessions.

### **3 DISCUSSION AND CONCLUDING REMARKS**

Based on the different learning moments resulting from the reflection and reflexivity exercises, several improvements and implications for the running of future introductory design courses are suggested.

A first implication asks for a further exploration on how to frame the design project in the overall course and its learning goals, taking account of the need for more clarity on expectations and boundaries of the project and a step-wise design process. A second implication relates to a proposal for improvement of the organisation of the course that can strengthen the link between the theoretical background knowledge and the application thereof in practice, thereby strengthening specific design skills. This could diminish the complexity of the course. A third implication relates to the importance of looking at the course as part of an entire curriculum, in which the complete educational staff has a broad set of competences, skills and expertise on design education to offer to the students. Specific needs for skills and competences can be complemented by hiring professionals to pass on their expertise and knowledge from practice. As a last implication for this course, a proposal was formulated to raise the reflection of the students on the course and on design as a profession by collecting the students’ expectations and personal goals within the course, how these expectations are met and what they learned.

In-the-mirror writing enabled both a systematic and thorough review of different experiences related to conducting the design course from educators’ and students’ viewpoints. As educators we have enjoyed this process - reflecting upon and being reflexive about a whole range of aspects and how to understand them. We consider it a good starting point for learning to listen to ourselves and others in general and for increased awareness of applied design pedagogy. We realize that this is just a small beginning and that this way of learning about own practice, through storying and re-storying, needs practice in itself.

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