

Design Literacy – From primary education to university level

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Abstract

This paper is based on on-going research into design education at several educational levels. What is said, and what is done? In the DESIGN LITERACY project, we focus on the content of a continuous design education, the transition between different educational levels – from primary education, throughout the university level – in the Norwegian educational system. Designers, decision makers, investors, and consumers hold different positions in the design process, but they all make choices that will influence our future. Design education at primary and secondary level represents both a foundation for professional design education and a prequalification for the general public's competence for decision-making. We ask if there is a coherent connection between the different levels from primary school to university, and between the intentions and the practice. What is the reasoning behind the choices of design education of professionals? We have chosen to use the concept design literacy to address the complex matter of objectives and content in design education. The project is in its initial stages with an end focus on: What challenges need to be addressed in design education at different levels in order to boost the advancement of design literacy?

Keywords: *design and society, sustainable design, education, curriculum development, design literacy*

Designed artefacts and solutions influence our lives and values, both personal, and from a societal and global perspective. Designers, decision makers, investors, and consumers hold different positions in the design process, but they all make choices that will influence our future. In the *Kyoto Design Declaration*, The *International Association of Universities and Colleges of Art, Design and Media* (Cumulus) declared that:

...to contribute to sustainable social, environmental, cultural and economic development for current and future generations, the Cumulus members will commit themselves to accepting their part in the further education of our youth within a value system where each of us recognizes our global responsibility to build sustainable, human-centred, creative societies (Cumulus 2008)

In order to solve these crucial global challenges, designers and the general public must cooperate; for this purpose, design literacy is necessary for all. But what is really happening in the classrooms?

We are, in addressing our core matter of concern; What challenges need to be addressed in design education at different levels in order to boost the advancement of design literacy?, focusing our studies on the formal, the perceived, and the experienced curricula (Goodlad 1979) by addressing the following two research questions: 1) What do the current design educations at different levels promote in terms of content?; and 2) What are the main challenges, as articulated by students and teachers in design education, at the different levels? We are exploring the different expectations of content and quality of design education at the transition between different educational levels: 1) from primary to lower secondary; 2) from lower secondary to upper secondary; and 3) from upper secondary to the university level.

The research ambitions in this DESIGN LITERACY project are to employ reflexivity regarding the construction of the empirical material, to use interpretations guided by broad frames of references, and to activate self-critical reflection within the research of design. Aspects of importance will be creativity in the sense of seeing various aspects, theoretical sophistication, theoretical breadth and variation, and reflection at the meta-theoretical level, inspired by reflexive methodology (Alvesson & Sköldbberg, 2009).

Design Literacy

The concept 'design literacy' is chosen to explore and address the complex matter of objectives and content in design education from primary to university levels. In selecting this term, we acknowledge that research on multiple literacies has received considerable debate and redefinition within several areas of educational research (Coiro et al., 2008); it is no longer bound to the understanding of literacy as the ability to read and write verbal text (Moats, 2000). We draw on work in areas such as visual literacy (Stankiewicz, 2003), media literacy (Buckingham, 2003; Erstad, 2010), and ecological literacy (Stegall, 2006). *Design literacy* in this project is connected both to the creation and understanding of artefacts and images in a broad sense, and is not limited to only graphic design (Heller, 2004). When we use design literacy, we include a wide perspective of artefacts and professions and choose a broad interpretation of design (Simon, 1969). There is a move toward understanding design products and processes as composed of symbiotic hybrids between design products, media types, services, architecture, communicative spaces, networks and modes of creation, production, and exchange (Knutsen & Morrison, 2010). We regard design literacy as a competence not only for the professional designer, but also for the general public in their position as users, decision makers, and consumers (Nielsen & Digranes, 2007; Dong, 2008).

The view that a competent general public is needed also influence the emphasis on a wide educational perspective on design literacy. It refers to concerns and practices such as democratic participation in design processes, developing and using ethical responsibility, and understanding and supporting sustainable aspects of production and consumption. Design literacy is also evident in the focus on smart, inclusive, and sustainable growth as highlighted in the *Europe2020* strategy (European Commission, 2010). Design education at primary and secondary level as such represents both a possible foundation for professional design education and a prequalification for the general public's competence for decision-making and life-long learning in design literacy.

Theoretically we draw on Eisner (2002), Klafki (2002), Schön (1987), Papanek (1985), Freire (1970), and Lave and Wenger (1991). In the project we employ mixed methods and practices inspired by reflexive methodology (Alvesson & Sköldberg, 2009), interviews, focus groups, and document analysis in order to allow us to more closely articulate actual currents in design literacy education and to see them in relation to the challenges for educational practice in terms of formal curriculum and different discourses of education within a subject area.

The field of design education in Norway

In the present formal curriculum for primary and lower secondary school, design is linked to the creation of artefacts, creativity, problem solving, sustainability, entrepreneurship, and education for democratic participation and citizenship. However, it takes time to implement a new formal curriculum in educational practice (Haug, 2003), and some historical aspects can explain the discrepancy between national curricula and educational practice within this subject area (Carlsen & Streitlien, 1995; Nielsen, 2000; Kjosavik, 2003; Gulliksen, 2006; Brønne, 2009; Fauske, 2010; Digranes, 2009). A study of design education at different levels will reveal discourses and how various ideas influence educational priorities.

Efland operates with five ideals for American art education: Academic art, Elements of design, Creative self-expression, Art in daily living, and Art as a discipline. Lindberg has defined two historical perspectives of the dissemination of art in Sweden: a Charismatic attitude and a Lecturing attitude. Illeris operates with three educational discourses in Denmark related to Drawing (tegnepdagogisk diskursorden), Creative art (formningspædagogisk diskursorden), and Visual culture (billedpædagogisk diskursorden). As early as in 1970 Gert Z.Nordström introduced a critical perspective into art education and visual culture in Sweden. Nygren-Landgårds has contributed to Finish education by profiling eight different ideals of craft teaching practices, including the Academic (akademikeren), the Craftsman (håndverkeren), the Carrier of cultural legacy (kulturbærer), the Educator (oppdrageren), the Instructor (instruktøren), the Missionary (misjonæren), the Naturalist (naturalisten) and the Enhancer of community (samfunnsforbedrer). The legacy of design education at different levels forms a point of departure to better articulate the challenges posed at each level and the continuation of design education. For this purpose, we build upon four discourses of formation, formulated as perspectives of art and design derived from studies of Norwegian art and design teacher training (Brønne, 2009). Brønne has developed these perspectives based on the theories of Efland (Efland et al. 1996), Lindberg (1988), Illeris (2002), Nygren-Landgårds (2000), and Nordström (1972). Efland, Lindberg, Illeris, and Nordström's educational analyses are situated within an art context, whereas Brønne's is situated within the Norwegian tradition that is unique in its structure compared to other educational systems, as it spans craft, design, architecture, and fine art. The perspectives are: 1) *Encyclopaedia formation*, with a focus on skills and knowledge of material and techniques (copying has been a central method); 2) *Formal aesthetic formation*, with a focus on

elements and principles of form, colour, and composition (experimentation has been a central method); 3) *Charismatic formation*, with a focus on “child-art” (self-expression was the focus); and 4) *Critical formation*, where visual and material culture have been in focus (critical analyses has been a central method).

The research on the philosophy of design education is in Norway richer at the primary and lower secondary levels than at the upper secondary and university levels; this is a motivator for our focus. We find it useful to discuss the four perspectives developed by Brønne (2009) as a point of departure for the articulation of specific characteristics, tensions, and challenges that are linked to the continuous design education and the corresponding objectives, practice, and ideologies. In the following text we will provide a brief overview of the frames for design education, articulated knowledge on design educational practices, and corresponding ideas for the formation of design literacy.

Primary and lower secondary education

Before 1960, the Norwegian art and craft education was structured as three subjects: *Craft for boys*, *Craft for girls*, and *Drawing*. Within the Encyclopaedic formation, there was a focus on the development of skills within woodwork for boys, and in textiles for girls. Usefulness was central in the first half of 1900, and this was also seen in the subject of Drawing, where precision and diligence were developed for the growing industry and its needs motivated the practice (Brønne, 2009). With the launch of the 9-year compulsory school in 1960, the three previous subjects were merged into one large subject: *Forming*. This merge coincided with ideas of education based on what Brønne has called the Charismatic formation. The introduction of Forming represented a drift from a craft tradition toward a romantic practise of self-expression. This was seen in the very influential Danish version of the textbook *Creativity and mental growth* by Lowenfeld and Brittain (1973), the shifting ideas of the general educational philosophy (Dewey 1938), and in the tensions within the subject of Forming (Borgen, 1995; Nielsen, 2000; Kjosavik, 2003; Digranes, 2009; Fauske, 2010).

In 1997 (L97), the subject Forming was renamed *Art and Crafts* (Kunst og håndverk). The L97 subject curriculum represented a shift towards a new focus on skills and knowledge, with some connection to the perspective of Formal aesthetic formation. The implementation of L97 was problematic, as the practicing teachers were situated in a tradition of Charismatic formation where the subject specific skills and knowledge were previously given low priority (Haug, 2003; Kjosavik, 2003; Nielsen, 2009). Art and Crafts, in the current formal curriculum *Kunnskapsløftet* (K06), is based on some of the same ideas as L97, and the critical formation has been more clearly articulated. In this context, design has been emphasised as a specific topic (Hovedemne), open to combining the best from both the art and craft traditions. The creation of products is highlighted, as are ethical and environmental concerns (Kunnskapsdepartementet & Udir, 2006). It took 50 years to reconcile some of the differences between the craft tradition and the tradition of self-expression in educational practice (Digranes, 2009). Now there is an articulated focus on design and architecture and a joint effort for democratic participation. This development has been possible because the Norwegian subject has been *one* merged subject, Art and Crafts, since 1960, and is mandatory from 1st to 10th grade in general education.

Design education at the upper secondary level

At the upper secondary level, design education has been located within both general education, which prepares for university admission certification (Studiespesialiserende Utdanningsprogram - SSP), and vocational training. In the upper secondary level it is called *Design* (Formgivingsfag) within the general program, and *Design and Crafts* (Design og Håndverk) in the vocational program. When from 1994-2006 design was

placed as a mixed program between vocational training and SSP, it was a very popular choice among the students (Nielsen, 2009). When the formal curriculum, *Kunnskapsløftet* (K06), was introduced in 2006, both art and design was given a more prominent place in the general education program, SSP. In the SSP curriculum, design was combined with architecture in the subject *Design and Architecture*, and the content was constructed as a continuation of the subject matter content and objectives formulated in the curriculum for Art and Crafts at the primary and lower secondary level. The K06 curriculum emphasises skills and knowledge in the tradition of formal aesthetic formation combined with the perspective of critical formation with aspects of sustainable development. However, when placed within general education in SSP after 2006, there was a marked decline in student recruitment (Frøseth et al., 2008). The latest numbers however, show that this development might be changing for the better.

Professional teacher training and professional design education at the university level

Teacher training is closely linked to the changing curricula in primary and lower secondary education. This link has been articulated and discussed by Gulliksen (2006), Brønne (2009), and Hjørdemaal & Gulliksen (2010). In Norway, there is a choice between becoming a classroom teacher or a specialised teacher. Classroom teacher training went through a major structural change in 2010 (Kunnskapsdepartementet, 2010); the development of courses are still in the process of revision and the effects on students' choices regarding the inclusion/exclusion of Art and crafts as a part of the new degrees is not yet known. It is also too early for this new generation of classroom teachers to enter the work force; as such, the focus in this project will be on the specialised teacher training that has remained constant. The most influential and specialised teacher training in Art and design is given at *Oslo and Akershus University College of Applied Sciences* and *Telemark University College*, where master's degrees in Art and design education have been awarded since 1976.

The most influential professional design education institutions in Norway are the Oslo School of Architecture and Design, Norwegian University of Science and Technology, Oslo National Academy of the Arts, Bergen National Academy of the Arts, and Oslo and Akershus University College of Applied Sciences with a Faculty of Technology, Art and Design. These institutions are, to a great extent, based on studio activity, and not many research projects about the formal curricula or the ideological, perceived, or experienced curriculum (Goodlad 1979) of design education have been performed at this educational level. At the Oslo School of Architecture and Design, research has evolved into a new type of discipline thinking: the *making disciplines* (Dunin-Woyseth & Michl, 2001), a concept now accepted in official documents.

A continuous design education

The content of a continuous design education, the transition between different educational levels, and how this is realised across the Norwegian educational system – from primary education, throughout the university level is of great concern. We aim to contribute to a wider understanding of designers' and the general public's influence on sustainability issues in society through the knowledge of design education as is, and deliberate on what might be ways of strengthening and develop educational practice and theory in this area. We want to articulate ideas and content in design education through Goodlad's concepts; the ideological curriculum, the formal curriculum, and the perceived and experienced curricula (1979). We wish to examine if there is a coherent connection between the different levels from primary to the university level, as we regard this as crucial for the quality of design education.

Approach to the study

To make a study of this scale feasible (in terms of generating reliable information from qualitative statements on tendencies of the practice field), we judge a combination of 'design education stories', semi-structured interviews (Kvale et al., 1996), and, possibly, focus groups (Morgan, 1997) as the best strategy for constructing empirical data. To gather the data, the pyramid of education has been turned upside down for research purposes. The study starts at the university level of both professional design education and design teacher training. We focus on the education history of the students at design institutions and specialised teacher training at the university level; by asking questions whether the previous education has provided them with competence or not, in light of the current courses. These 'design education stories' have been collected from freshmen at three universities with professional design studies in the Oslo region, and two specialised teacher training in Art and design. The data will be analysed to see how the students educational background in terms of what has been present or absent in their education and the challenges in the future development of design literacy. This is also performed to identify patterns of upper secondary schools that recruit for higher education within the field, and, as such, provide us with a selection of schools, including teachers and pupils, for the study of the upper secondary level and for the study of primary and lower secondary schools in general education.

The informants at the upper secondary level are selected from schools (public or private) that are more frequently referred to than others, what might be termed 'recruitment schools' in the 'design education stories' from the students at university level. Teachers and pupils in their first and last year at these upper secondary schools, assumed to represent best practice, will be asked to reflect upon current design education. The interviews or focus groups will be used to invite the teachers and pupils to describe design education from their point of view.

The primary and lower secondary schools are chosen by the same principles: from being mentioned in the 'design education stories' at a higher educational level. When we interview teachers and pupils at the 4th, 7th and 10th grade and at the first and last year upper secondary school we use semi-structured interviews and focus group interviews (Gulliksen & Hjordemaal 2011). This will help the informants to verbalize their design learning or teaching experiences (Reitan, 2007; Brønne, 2009); the informants can develop the language together within the dialogue. The informants should reflect the current knowledge in the field through their work or study. We are aware that it has been some time since the interviewed students at the higher education levels studied at lower level schools; however, we assume that the selected schools probably can be seen as the best practice over time. If this does not turn out to seem right, the reasons for not remaining as such will, nevertheless, provide an interesting phenomenon to study.

Characteristics and challenges in the continuous design education

We ask: What challenges need to be addressed in design education at different levels in order to boost the advancement of design literacy? The complex answer to this question is not yet formulated, and we see that the results of the study will be useful from a societal perspective, as well as for later specific changes in policy and educational implementation. As an overall approach to the outcomes of the different studies, an educational perspective on the development of design literacy will be articulated. The case study approach will provide data on the challenges present at the transition from one educational level to another and on the challenges for the current and future development of design literacy in education. We will attempt to discern whether it is caused by a framework, different curricula, or differing ideologies. This study's importance

lies in the needs to better inform design education itself, to improve the quality of design educators, educate reflective consumers, and, as a result, further the goals of a human-centred, creative society.

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