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Discussion Piece

Design Literacy in General Education

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I had the pleasure of attending several sessions of the DRS2016 50th anniversary conference in Brighton this summer. Many of them were linked to the conference theme 'Future-focused thinking'. In reflecting on the theme, I would argue that design education for the general public has never been more important. The challenges we face in the future will require responsible design-oriented thinking and acting by more than just professional designers and engineers. Global environmental challenges require the general public to act responsibly in their roles as decision makers, purchasers and consumers.

Young people today cannot expect to have the same rise in living standards that their parents had. This, again, raises the question: What is a good living standard? As a Norwegian citizen, living in a country that has moved very quickly from being a poor country to an oil-rich nation in 100 years, I have seen first-hand what access to new technology has meant for a better life. The introduction of washing machines alone led to major societal changes, allowing women to free themselves from heavy household burdens and begin to enter the workforce. Technology has also allowed for mass production and mass consumption on a scale our parents could not even dream of. But times are changing. The younger generation can no longer anticipate higher incomes and increasing consumption. Lifestyles, production and transport systems will need to change in order to reduce global warming and the overexploitation of natural resources. Coming generations will face yet other challenges.

Our choices of what to wear, what to buy, what to eat and how to travel are related to our awareness of quality, longevity and sustainability. The inclusion of mending and repairing of artefacts in general design education is here seen in such a perspective. Mending and repairing does not lessen the creating of innovative new artefacts and technological solutions. They are complementary, and this complementarity is included in design literacy.

In 2013 I chaired the DRS//cumulus conference in Oslo, where some of these thoughts were presented under the theme *Design Learning for Tomorrow – Design Education from Kindergarten to PhD*. The conference stressed the importance of a continuing education, and promoted the idea that the general public needs to be educated to become design literate in order to take a responsible part in design and decision-making processes that will affect them in the future. From this perspective, general education plays a key role in developing design thinking, understanding, reading, transforming, making and reflecting. If young people are not familiar with reading and transforming visual information and structures into understandable signs—whether they be architectural drawings, urban planning documents, or other visualizations of complex structures—

they might find themselves in trouble in the future. More and more decisions are being made on the basis of pictorial representations, and this trend will likely continue. Architects and engineers are trained to make, read and understand such complex visual communication through systems like Building Information Modelling (BIM). These systems give a distinct advantage to those who know how to read them, and disadvantage those who do not. Many decisions in urban planning are made by politicians without a design or engineering degree. Politicians represent the general public, and they will have problems in interpreting visual information if they do not understand the main principles of visualization and transformation. They might be involved in decision-making processes without truly understanding their consequences. In many cases visual communication can communicate complex solutions and difficult problems better than verbal text, but in turn, it demands certain specialized visual communication skills from the actors involved.

I use the term design literacy as a broad concept that encompasses visual literacy, materiality knowledge, ICT literacy, ethics and design education for citizenship. It includes the creation of ideas and technology to create both artefacts and solutions, as well as interpretations and reflections on these designs. These issues have been of great concern for Norwegian researchers and curriculum developers since the introduction of the national curriculum in 1960, when art and crafts were merged into one subject. Currently this subject includes art, architecture, design and visual communication. Today we can clearly see the benefits of this merger, which places design at the core of the subject, building upon the best from art and the best from craft to educate creative problem solvers and critical consumers. We do not have a specific subject called technology in Norway, but technology is included in the design curriculum.

I prefer to use Herbert Simons' definition of design, because it is both wide and narrow. He says: 'Everyone designs who devises courses of action aimed at changing existing situations into preferred ones' (Simon 1969). This definition is wide in the sense that it argues that design is about making solutions, whether it be artefacts like houses, roads, toothbrushes or garments, or systems for ICT or timetables for trains. It is narrow in the sense that it is normative, by claiming certain solutions to be 'preferred ones'. This, of course, raises a crucial question: preferred for whom? What is economically 'preferred' for a company might not be preferable for the environment. What is cheap for me might not be good for the environment. Our western way of living and consuming cheap artefacts is problematic as it is causing pollution in low cost countries. Reflections upon such complex problems are included in general design education aiming at developing responsible design literacy.

We have far too long been told that new technology will solve our future environmental problems. I hope we will see brilliant solutions in the future, but they will not be brilliant without an ethic perspective. Creativity and innovation have no ethical stance unto themselves. The atom bomb was a technological and innovative creation, but it has not been good for human life. A design-literate general public would be a clear step forward in supporting a sustainable development where we all take part in a 'future-focused thinking'.