

A Renewed Understanding of Creativity is Paramount prior to Introducing Students to a Life Design Attitude

Kirsten Bonde Sørensen

Danish School of Media and Journalism, Denmark

Abstract: Students of today are faced with the reality of an unpredictable working life in a constantly turbulent and fast-changing world. This has led to an intense focus on entrepreneurship. Yet, we seem to overlook the fact that students are increasingly challenged by stress and depression. We need to rethink education to include knowledge and tools not only for creating a job, but for reshaping life in general. This paper is part of a larger body of research aimed at introducing students to a Life Design Attitude. Research has proved that design can be used in value clarification and lead to changes in inappropriate beliefs and behaviour. In other words, design can be used to create better lives. However, by comparing data from three workshops this paper concludes that prior to introducing students to a design attitude to life there is an urgent need for a renewed understanding of creativity in educational institutions.

Keywords: *creativity, design attitude, reframing, cognition, life design.*

1. Background

Young people have ‘to create themselves’ (Greene, 1978, 1995, Hammershøj, 2014), create value and meaning in their lives; they are becoming free agents and have to be their own ‘chief executive officers’ (Drucker, 1999). Hence, we ought to consider creativity and imagination as human capacities (Kaufman & Gregoire, 2016) that are more vital than ever. But creativity and imagination are having a hard time. Today, we see a growing number of creative processes, including design processes, turn increasingly linear and structured, in order to further effectiveness. The business world is fixated on being effective (Lotto, 2017), which is why creative processes are becoming more and more linear and controlled, cp. Cooper’s well-known Stage-Gate model from the 1970s.

In the history of creativity, an important development is the move from a humanistic psychological understanding of creativity to the knowledge economy, where creativity is seen as a competence you use for innovation at your workplace (Stepper-Larsen, 2011, Stephensen, 2018). Today, in the knowledge economy, creativity is seen as a goal-oriented competence you use for innovation at your workplace (Stepper-Larsen, 2011, Stephensen, 2018). Or creativity is seen as an ‘unserious’ and ‘fluffy’ activity, like painting or knitting (Stentoft & Sørensen, 2019). Creativity has changed from being a symbol of human freedom to an innovation discipline we are all required to master (Stepper-Larsen, 2011). This paper argues that we need to acknowledge and meet two different needs: a need for more effective processes in innovation and an overlooked need for creativity as a powerful, human capacity for self-actualization and human development (Rogers, 1954, Kaufmann & Gregoire, 2016, Richards, 2010). This paper focuses on the latter type of creativity.

In the history of design, design has been introduced as ‘a process’ and ‘a method’ (Lawson & Dorst, 2005, 2009); ‘a revolution’ (Fuller, 1964, Sanders, 2006); ‘a ‘new’ culture’ (Nelson & Stolterman, 2012); as ‘designerly ways’ of knowing and being (Cross, 1982) and ‘a ‘new’ attitude (Boland & Collopy, 2004, Michlewski, 2014, Rawsthorn, 2018). In 1957 Fuller introduced the concept of ‘Comprehensive Anticipatory Design Science’ and argued that the world needed a ‘design science revolution’. Fuller coined the term the ‘comprehensive designer’, asserting that design could be more than a stage in the manufacturing process associated with the Cold War industry; it could be ‘a world-saving way of life’ (Chu & Trujillo, 2009). In that sense, Fuller was the first person to use design thinking for planetary sustainability. Today, we often distinguish between different types of sustainability: human, social, economic and environmental sustainability (Godland, 2002). Presumably, Fuller was focused on economic and environmental sustainability – and a designerly way of living. Maybe time has come to introduce design not only as a revolutionary approach to planetary sustainability, but as a broader and more holistic type of sustainability that *also* includes *a more specific and concrete focus* on the individual, human life, that students need. Training human beings to become ‘holistic designers’, not only in the world, but also in their lives, could be an answer and a solution to the increasing and worrying number of people, in particular young students, who fail to thrive. Young people are among the populations most susceptible to mental disorders (mentalhealth.org.uk).

Design as an attitude

In 2004, Boland & Collopy accentuated that design is not only restricted to a method, a process or a set of activities; rather it is *an attitude*. The authors introduced the notion ‘Design Attitude’ (2004) presenting it as a contrast to the rational and analytic ‘Decision Attitude’. Later, based on a study of designers working in organizations, Michlewski (2016) made a deeper characterization of the notion of ‘Design Attitude’ describing five characteristics: 1. Embracing uncertainty and ambiguity, 2. Embracing the power of the senses, 3. Engaging and reconciling diverse perspectives (e.g. framing and reframing), 4. Having a playful dimension and bringing ideas and strategies to concrete life (e.g. prototyping) and 5. Having deep empathy (e.g. understanding other people). Boland & Collopy and Michlewski refer to designers’ attitude *in a workplace*, whereas a newer field within design research and design practice brings *design into human life* e.g. ‘Life Design’ and ‘Design for Quality of Life’ (Birsell, 2015, SIGWELL, Design Research Society). Likewise, at Stanford University Evans & Burnett (2016) have successfully offered graduate courses in ‘designing your life’. A central concept here is ‘self-mapping’, a way for students to better understand what is important to them, in which reflections and reframing of their dominant values and beliefs, such as ‘success’ are paramount. Research has found that participants “*were better able to conceive of and pursue a career they really wanted; they had fewer dysfunctional beliefs and an increased ability to generate new ideas for their life design*” (Burnett & Evans, 2016, xxii). The ‘Life Design Attitude’ is based on these definitions, with the addition of ‘analytical & critical thinking’, as they are also part of a design attitude. Furthermore, ‘rewiring your brain/understanding feelings and emotions etc.’ is added to the concept, since neuroscience has revealed new opportunities. The Life Design Attitude works *together* with the 4-Foci Model (Sørensen, 2019), a model inspired by Goleman & Senge’s *Triple Focus* (2014), based on Goleman’s expertise in emotional intelligence and Senge’s expertise in learning and systems thinking.

The 4-Foci Model is based on design research and practice and includes: 1. an inner focus, 2. an outer, entrepreneurial business focus, 3. an ‘other’ focus that includes empathy and how to be a good co-creator, and finally, 4. an outer world focus that includes an understanding of ‘the bigger picture’. The intention is to remind you to holistically see and balance more perspectives. An example could be asking the question: How can you reframe what you are good at and passionate about (inner focus) into something that adds value to other people (‘other’ focus), something that can become a business (business focus) and something that adds value and is sustainable in the world (outer, world focus)? Or you could start from an outer world perspective asking: How can I make the world a better, more sustainable place? How can I focus on a specific group of people, e.g. business leaders, and help them design better solutions? A more in-depth description on the Life Design Attitude is beyond the scope

of this paper the focus of which will be the three workshops described below and the two affiliated activities: ‘seeing more perspectives/reframing’, and ‘thinking with your hands’:

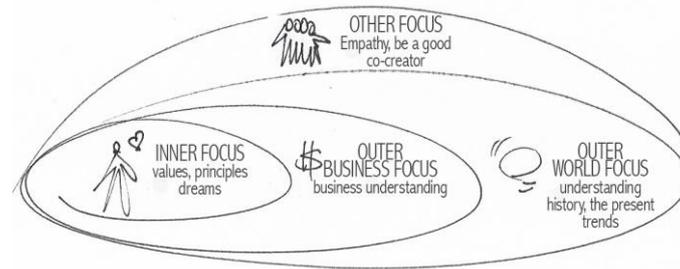


Figure 1. The 4 Foci-Model (Sørensen, 2019)

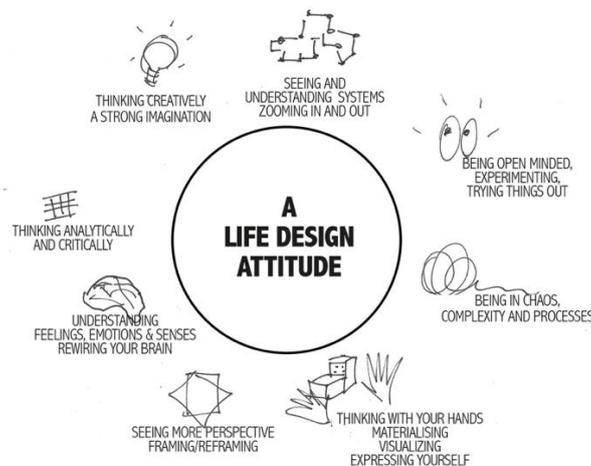


Figure 2. Life Design Attitude (Sørensen, 2019)

- Seeing more perspectives/reframing is one of the most essential design activities (Dorst 2015, Kolko, 2010, Michlewski, 2016, Sørensen, 2011). Yet, there are different definitions and uses of reframing: a) Reframing is the act of purposefully shifting the normative frame, often temporarily or in multiple directions at once, to see things from a new perspective (Kolko, 2010); b) Reframing can be used as a change of the meaning of products and services (Verganti, 2009); c) Reframing can be seen as ‘cognitive reframing’, which is a psychological technique, creating new meaning and value (Langer, 2009, 2016). In the workshops, the students were given examples of how reframing can be used in life, e.g. reframing ‘the labels’ (Langer, 2009) you have put on things, people or on yourself e.g. from ‘being a victim’ to ‘being a leader’ in your life. Cognitive reframing is attracting new interest, as it links to contemporary brain research about the body/mind relationship and how your expectations about the future to a large extent influences your experience of the future – and additionally, how you can rewire your brain (Langer, 2009, 2016, Schwartz, 2012, Lotto, 2017).
- ‘Thinking with your hands’ means thinking while materializing, visualizing and prototyping (Schön, 1983). For designers building is a way of thinking and making sense of things (Lindgaard & Wesselius, 2017). This ‘designerly’ way of thinking (Cross, 1982) means making implicit sensemaking processes explicit (Kolko, 2010). By bringing things into the world, e.g. your positive and negative thoughts, they become visual and concrete ‘objects’ which open to reflection in new ways. As Tversky (2015) argues, “creativity needs tools of thought,” the generative tools (Sanders, 2000) are ‘thinking tools’ used e.g. for creating a collage. Using generative tools, you ‘think with your hands’ (Pallasmaa, 2009), you have ‘a conversation with the material’ (Schön & Bamberger 1983), which leads to questions,

reflections and new perspectives. Also, generative tools appeal to deeper levels of unconscious and tacit knowledge (Sanders, 2002, Visser et al., 2005, Sørensen, 2011).

2. Research Problem and Hypotheses

This paper is part of a longitudinal design research study aimed at young students, who is one of the populations most susceptible to stress and other mental challenges. A brief summary of our background includes: We know young people are limited by the performance culture. They are abandoning their dreams and they are not thinking outside the box. According to Katznelson (2018) young people need tools to reflect on themselves, their values and their beliefs and possibly change inappropriate views of for example 'success'. They also need 'tools for life's maze'; they need to learn to have a sense of themselves, understand what is important and valuable to them and also learn flexible thinking, seeing more perspectives (Katznelson, 2018). Competencies required in the future focus on more creative skills, competencies and attitudes (Robinson, 2014, Lucas, 2019), and design thinking/a design attitude is considered core to meeting future challenges (Krawchuk, 2018, WeForum). Additionally, the OECD (2018) recommends that educational institutions ought to prepare the future student not only for creating and holding job but also for creating 'quality in life'. We know from previous research that design can be used in life (Sørensen, 2011, 2019) to reflect on and change inappropriate values and beliefs, to see more perspectives and generally use the design profession as a way for people to become better creators in their lives and in the world (Evans & Burnett, 2016, Birsel, 2015, Sørensen, 2011). Based on this knowledge our question is: How can we help students to become better leaders and designers in their lives and in other people's lives? And how can we introduce a Life Design Attitude to students *during* their education in order for them to become better 'holistic designers' in the world and in their lives. Our theoretical research hypotheses in this paper and in the three workshops are limited to:

1. We can support people's ability to change perspective and see e.g. a problem or themselves from different perspectives through different types of design activities (flexible thinking).
2. We can support people's ability to see and change their dominant values and beliefs through different types of creative activities.

When running a workshop in an educational institution, we identified a barrier in students' perception of creativity, therefore, in this paper, we want to focus on the additional question, *what is the role of participants' perception of 'creativity' in relation to effect?*

3. Experiments

The research question about the role of perception is researched in three different workshops that are all centred on the inquiry of participants' values and perceptions and related behaviour. They also focus on the participants' ability to express themselves e.g. positive and negative thoughts about the uncertain future. Workshop A) is about money perceptions and money behaviour. Workshop B) is about money perception and money behaviour in entrepreneurship and workshop C) is about the perception of success in the future life of journalism students. In this paper, we want to compare the three different workshops. The intention is to compare the effects of participation in the workshops to participants' perception of creativity.

- A. This workshop was included in my PhD research (Sørensen, 2011) about people's perception of money, a Money Workshop. In three different collages participants were urged to visualize their perception and behaviour in relation to money and in different time frames: Participants were asked to visualize their current understanding and behaviour about money, their memories about money and finally their future understanding and behaviour in relation to money. After four weeks the participants were invited to a follow-up interview, where they were asked about reflections (and possible effects) after participating in the workshop. Participants were: a) Customers in the bank that responded to an advertisement about a Money Workshop aimed at people whose money behaviour they wanted to change and b) Students who were offered a possibility of participating and receive a small stipend (around 30\$).

- B. This Money Workshop was held in 2014. Participants were invited to reflect on and possibly change their money behaviour. Similar to workshop A participants were urged to visualize their perception and behaviour in relation to money in three different collages and in different time frames. The participants were a group of eight entrepreneurs.
- C. This workshop was for journalism students preparing for their internship (Sørensen, 2019). The students were working with different types of assignments – their perception of ‘success’, examples of great journalists, role models etc. The students were asked to visualize three different scenarios: one that illustrates that they will have their dream internship; the second one illustrating that they will have an internship that they have little interest in, and the last collage illustrating that they would not be offered any internship. (For several years there have been too many students competing for the same internships. Up to 25 per cent might not be offered an internship, which results in stress and a feeling of failure).

In all three workshops, the intention is to help participants to train specific design competencies that help them ‘see more perspectives and reframe values and beliefs’ (e.g. on money, entrepreneurship, internship, success, themselves), reframing what you are good at etc. The intention is also to help participants reflect on who they are, help them express their wishes, and help them approach different positive and negative future scenarios. The design activity ‘thinking with your hands’ and visualizing is essential, as this activity helps participants to reflect, to access deeper knowledge and express themselves. Visualizing and bringing e.g. positive and negative thoughts into the world turn them into ‘objects’ you can relate to in new ways. In later workshops, we could train other design competencies and thus train *becoming* a skilled designer (Nelson & Stolterman, 2012).

4. Methods & Results

4.1. Method

In this research, we primarily used qualitative research methods. Yet, in workshop C we used mixed methods (Brannen, 2007). In all the workshops each participant made different types of collages. We conducted qualitative video interviews, asking participants to explain their collages, what they have visualized and their experiences and reflections on doing these creative activities (workshop A+B+C). In follow-up interviews, we asked, about participants’ reflections (and possible effects) after participation in the workshop (workshop A+B+C). The analyses were conducted in different ways, yet, the data is comparable for the focus of this paper – to study the participants’ reflections on the effects of the workshops and compare these to the participants’ perception of creativity.

4.2. Workshops

The data is gathered from three different workshops:

Workshop A: Analysis of 20 participants, including follow-up interviews one month after the workshop. The data is analysed using the Pentad (Burke, 1969) and described in my PhD thesis (Sørensen, 2011). Based on the pentadic analysis *16 out of 20 participants state that they had reframed/changed their perception and behaviour*. Participants reframed themselves into new roles as active ‘agents’ (Burke, 1969) and took leadership of their money. Conversely one participant, a kindergarten teacher, claimed that the workshop and the activity of making collages were too unserious for reflecting on a serious theme such as money (Sørensen, 2011, 54). The thesis concludes that prior to people changing their perception and behaviour there is a strong indication that there needs to be an openness to ‘new’ knowledge and an acceptance of the premise that creative activities *can possibly* support deep reflection and help you ‘see’ your dominant values and perceptions.

Workshop B: Analysis of eight participants’ reflections after participation plus one follow-up interview one year after the workshop. All eight participants stated, at the end of the workshop, that *they all had reframed/changed their perception of money*. In one additional follow-up interview one year after the workshop, the participant explained that her participation in the workshop had led to *radical changes in her behaviour and subsequently in her business*. She actually displayed the visual material from the workshop on the door in her office (Fig. 3). She explained that she was ‘having

everyday conversations' with the collages and that this had changed her behaviour, which again had led to a better business. She was now in higher tax bracket since her income was in excess of DDK one million, which was radical progress for her. She strongly emphasised the power of creativity and visualization (accepting the premise).



Figure 3. Illustration and collages from workshops A, B, and C.

Workshop C: Analysis of 100/50 participants (described in paper by Sørensen, 2019). Quantitative data from the students was obtained immediately after their participation in the workshop (100 students); qualitative data came from video interviews during the workshop (10 students), material from an assignment was submitted to individual PADlets (36 students), and finally a quantitative questionnaire was issued six months later (37 students). Despite an error in the quantitative questionnaire, we can conclude that only 13 out of 37 participants believe that reframing can help them positively to reframe e.g. their values, beliefs and feelings in relation to their future. Yet, an interesting element is that many students dropped out: Day 1, 100 students were participating; day 2+3 only 50 students participated. There could be various reasons for this significant decrease in participation, but as one student explains, “many students were very critical of the course.” Another student explains: “... Call it creativity, reframing, a new mindset or whatever, in my eyes, this is not at all useful to prepare for an internship. It’s a waste of time and resources.”

4.3. Conclusion and future perspectives

The comparison of the three different workshops demonstrates a huge difference in results:

Workshop A: 16 out of 20 participants argue that they have changed their perception and behaviour.

Workshop B: All eight participants maintained that they had changed their perception of money. In one additional interview a year later, with one participant, she argued that she had made radical changes in her money behaviour as well. A clear effect of this was a better business and moving to a higher tax bracket. She ascribed the workshop, the creative activities and her daily ‘talk’ with the collages to be the principal driver of her changed status (accept of premise).

Workshop C: 13 out of 37 participants believe in the positive effects of reframing. Many students were very critical of the course and of creativity in general. Yet, in the qualitative research the majority of the participants declared that they had valuable reflections and reframings working with the future scenarios. Yet, this result conflicts with the above, negative evaluations in the quantitative research. In another study on visualizing conducted in the same institution, the experiment showed significantly improved visual literacy among the students. Despite the output, the evaluations were very negative. “Students seem to experience a dichotomy between what is playful, creative and fun and what is serious, professional and worthwhile. These two domains are considered mutually exclusive rather than complementary. In the words of one student: “To many of my fellow students, this was a joke. As a journalism student, drawing or visualizing is not what you associate with groundbreaking, government-intensive journalism” (Stentoft & Sørensen, 2019). In a follow-up questionnaire 66% say they can use reframing ‘to a lesser extent/no use’, 49% say they can only use divergent thinking: ‘to a lesser extent/no use’. And, 40% say they have less or no need for creative competencies in the future.

Combining the three workshops with the participants' perception of creativity, we can conclude that their perception of creativity had an essential influence on the effect and also on the value the participants subsequently attributed to the creative activities. An increased number of participants experienced deep reflections and changes in perception, simply because they believe it is feasible and they are therefore open to the possibility (Langer, 2009). These conclusions are not rocket science. Yet, they represent a huge barrier to introducing 'new' knowledge and tools that could actually help students in their lives (Evans & Burnett, 2016). It is surprising and discouraging to meet a group of 100 young people the majority of whom consider creativity to be 'unserious' or even 'a waste of time'. This perception does not come from the young people themselves, but from their education. Of course, there are differences among the students and in the individual educational institutions, but there may be a tendency that educational institutions that favour a rational and analytical approach ('a decision attitude', Boland & Collopy, 2004) have an 'outdated' understanding of creativity, as demonstrated in this paper. Our educational system plays a crucial role in the role in the development of society and the next generation of citizens. Guilford's statement, though nearly 70 years old, is still relevant, "...we frequently hear the charge that under present-day mass-education methods, the development of a creative personality is seriously discouraged. The child is under pressure to conform for the sake of the economy and for the sake of satisfying prescribed standards...(Guilford, 1950, 448). Some will argue that there are no mass-education methods today. On the other hand, today it is becoming the norm to have more than 100 students in one higher education course, which presents a challenge to teachers and the way we teach, also - and in particular - in terms of nurturing creativity. An international study, "Barriers to Creativity in Education: Educators and Parents Grade the System" (Berland, 2013) shows that 2000 parents and 2000 educators think the education system is 'stifling creativity'. The study illustrates a growing concern that the education system itself is a barrier to developing creativity - an argument that is shared by many researchers and practitioners (Robinson, 2014, Claxton, 2006, Greene, 2000, Langer, 2009). Participants in the study argue that today's educational system "places too much emphasis on testing and not enough investment in the training, tools and time needed to teach creativity." Predicting the future is difficult, but one thing is clear: "Students will need to be better equipped to successfully navigate the increasingly complex and ill-defined nature of life in the 21st century" (Wells & Claxton, 2002). Forget about 21st century skills (Lucas, 2019); most of all we need to attune to a more creative attitude and recognise creativity as an essential human capacity in life (Melles et al., 2013). We need a more democratic view of creativity as a powerful human resource that can enhance learning as well as work-life skills. Today, students are steered by a performance culture (Katznelson, 2018), which means that they are driven by an 'extrinsic motivation', such as grades, money, praise and fame (e.g. likes on SoMe). Conversely, creativity flourishes under conditions that support 'intrinsic motivation', but it suffers in environments that stress 'extrinsic motivation' (Amble, 1999). Thus, we need to help students become intrinsic motivated and to reflect on and reframe inappropriate values and beliefs. Maybe, the seemingly 'successful' job is not really a 'successful' job for you. Creative activities and 'everyday creativity' (Richards, 2019) can help all of us, including the young students, in our lives by enhancing our mental capacities, rewiring our brains, including our values and self-beliefs, and guide us in life (Schwartz, 2012, Lotto, 2017, Langer, 2009). This paper argues that we can train ourselves to become better designers in our lives - or we can even train to become 'holistic designers' that not only focus on planetary sustainability (Fuller, 1957), but a broader type of sustainability that includes 4-foci - also a focus on the individual, human life. Training human beings to become 'holistic designers', not only in the world, but also in their lives, could be an answer and a solution to the increasing and worrying number of people, in particular young students, who fail to thrive. Yet, particularly in educational institutions, there seems to be a general and urgent need for reframing the perception of creativity and design.

References

- Berland, E. (2013) Barriers to Creativity in Education: Educators and Parents Grade the System for Adobe
Birsel, A. (2015) Design the Life You Love. Ten Speed Press.
Brannen, J. (2007) Mixing Methods: The Entry of Qualitative & Quantitative Approaches into Research Process.

Burke, K. (1969) *A Grammar of Motives*. University of California Press

Burnett, B. & Evans, D. (2016) *Designing Your Life*. How to build a well-lived joyful life. Borzoi Book

Boland, R. & Collopy, F. (2004) *Managing as Designing*. Stanford Business Books

Chu, H. & Trujillo, R.G. (2009) *New Views on R. Buckminster Fuller*. Stanford University Press

Claxton, G. (2006) *Thinking at the Edge: developing soft creativity* in *Cambridge Journal of Education*, vol. 36

Cross, N. (1982) *Designerly Ways of Knowing*. Birkhauser Boston.

Dorst, K. (2015): *Frame Innovation - create new thinking by design*. The MIT Press.

Drucker, P. (1999): *Managing Oneself*. Harvard Business Review, 1. issue, 1999.

Fuller R.B. & Mchale, J (1964) *World Design Science Decade documents*. Buckminster Fuller Institute.

Goleman, D. & Senge, P. (2014) *Triple Focus: A New Approach to Education*. More Than Sound

Goleman, D. & Senge, P. (2014) in *Reflections the Sol*. Journal on Knowledge, Learning & Change. Vol 4No.1.

Greene, M. (1978) *Landscapes of Learning*. Teachers College Press.

Greene, M. (1995) *Releasing the Imagination*. Essays on Education, the Arts, and Social Change. Wiley & Sons

Guilford, J.P. (1950) *Creativity in American Psychologist* Vol. 5, Iss. 9 pp. 444-454

Hammershøj, L. G. (2014) *Kreativitet – et spørgsmål om dannelse*. Hans Reitzels Forlag.

Katznelson, N. (2018) Inaugural lecture, Aalborg University 2018, in *Altinget*, retrieved 25.12.19

Kaufman & Gregoire (2016) *Wired to Create: Unraveling the Mysteries of the Creative Mind*. Tarcher Perigee;

Kolko, Jon (2010), "Sensemaking and Framing: A Theoretical Reflection on Perspective in Design Synthesis"

Langer, E. (2009) *Counterclockwise: Mindful Health and the Power of Possibility*. Ballantine Books

Langer, E. (2016) *The Power of Mindful Learning*. Persueus Books Group.

Lawson, B. (2005) *How Designers Think*. The Design Process Demystified. Architectural Press; 4 edition

Lawson, B. & Dorst, K. (2009) *Design Expertise*. Elsevier Ltd.

Lindgaard, K., & Wesselius, H. (2017). Once More, with Feeling: Design Thinking and Embodied Cognition in *The Journal of Design, Economics, and Innovation* Volume 3, Number 2, Summer 2017.

Lotto, B. (2017) *Deviate: The Science of Seeing Differently*. Hachette Books.

Lucas, B. (2019) *Why we need to stop talking about twenty-first century skills*. Centre for strategic education.

Melles et al. (Editorial Board of IJDCI) (2013) *Perspectives on design creativity and innovation research in International Journal of Design Creativity and Innovation*, Vol. 1, No. 1, 1-42

Michlewski, K. (2014) *Design Attitude*. Routledge

Nelson & Stolterman (2012) *The Design Way*. Mit Press.

OECD, 2018: *The Future of Education and Skills, Education 2030*. Retrieved 05.12.19.

Pallasmaa, J. (2009) *The Thinking Hand-Existential and Embodied Wisdom in Architecture*. Wiley & Sons Ltd.

Richards, R. (2010) *Everyday Creativity Process and Way of Life* in *The Cambridge Handbook of Creativity*.

Richards, R. (2019) *Everyday Creativity and the Healthy Mind*. Dynamic New Paths for Self and Society. Palgrave Studies in Creativity and Culture. Palgrave Macmillan.

Rogers, C. R. (1954) *Toward a Theory of Creativity*. *ETC: A Review of General Semantics* Vol. 11, No. 4

Sanders, E-B. N. (2002) *From User-Centered to Participatory Design Approaches*, Taylor & Francis Books

Sanders, (2000) *Generative tools for CoDesigning in Collaborative Design*, Springer Verlag London Limited.

Schön, D.A. (1991) *The Reflective Practitioner – how professional think in action*. Ashgate Publishing Group

Schwartz, J. M. (2012) *You are not your brain*. Avery; Reprint edition (June 5, 2012).

Sigwell, Design Research Society. www.drs.org. Retrieved 20.04.20

Stentoft, M. & Sørensen, K. (2019) *Visualization as a Tool for Reflection in Journalism Education*. WJUC 19

Stepper-Larsen (2011) *En nation af kreativitetsslaver* in *Asteriks*, Sep. 2011

Sørensen, K. B. (2011) *When Designing Emerges into Strategies-in an organization and in individuals*. Phd Thesis. Kolding School of Design. Denmark

Sørensen, K. B. (2011) *Designing for self-leadership* in *Proceedings of NORDES2013*. Copenhagen, s.163-173.

Sørensen, K. B. (2019) *Journalism students prototyping a brighter future in conference proceedings Cumulus2019*

Tversky, B. (2015) *Tools for Thinking in The Impact of Pen and Touch Technology on Education*,

Verganti, R. (2009) *Design Driven Innovation*. Harvard Business Press.

Visser et al. (2005) *Contextmapping: experiences from practice in CoDesign*, Vol. 1, No. 2, June 2005, 119-149

Wells & Claxton, G. (2002) *Learning for Life in the 21stCent.: Sociocultural Perspectives on the Future of Education*