Colour Combos. Methods in design education | Maria Kirk MIKKELSEN

121

Maria Kirk Mikkelsen is a lecturer at Kolding School of Design in Denmark. She teaches applied design methodology and colour in design. Her research includes the project: A colour palette methodology for designers (2014–2015). Concurrently Mikkelsen works as a design professional creating patterns and colors for interior. Her recent work includes patterns for the world's first ceramic climbing wall. She has received a number of awards for her design work.

Address:
Maria Kirk Mikkelsen
Designskolen Kolding
Aagade 10, 6000 Kolding, Denmark

mkm@dskd.dk

Colour Combos.
Methods in design education.

Maria Kirk MIKKELSEN

Designskolen Kolding, Denmark

Abstract

This paper concerns the on-going development of a methological tool for design students to be used in the creation of colour palettes. The project holds both didactic and colour theoretical considerations. The observation of students' work with colour at Designskolen Kolding shows that their approach to creating palettes is often highly intuitive. The majority of students tend to forget colour theory later in their studies and therefore do not make qualified colour choices in their design projects. Since a design process is influenced and controlled by various methods, the project investigates whether a defined methodology can be developed and implemented in the work with colour palettes in order to give more quality to the design of colour schemes. The methodology is presented to the students as method cards that can be combined and applied at different phases in the design process.

Introduction

The paper starts by introducing the colour classes at Designskolen Kolding (hereafter DSKD) and the background for initiating the project. Next follows an account of the project, its methods and results. The paper concludes by reflecting on future action concerning implementing the colour methodology in design education.

At DSKD colour theory is taught on three levels. During the first semester all students across disciplines complete a basic colour class of four weeks. The focus of this class is on the subtractive colour theory as described at the Bauhaus school in the 1920s.[1]In the third semester, students have a three-week class that addresses the relationship between colour and light with a special focus on additive colour theory.[2] Besides these two classes, students work to a greater or lesser extent with colour in a number of individual projects on their main subject under guidance from their tutor.

The colour class on the first semester is designed so the students gain knowledge of colour theory, skills to mix and match colours and competences to work consciously with colour in design projects. The class is divided into three phases:

1. Introduction to and exercises with colours
2. Analysis of the colours in an existing design
3. Re-design of the colour scheme in an existing design

Students attend lectures as well as conduct practical work with mixing colours. Based on the three basic colours cyan, magenta, yellow and black and white the students create primary colour scales, complementary colour scales and value colour scales as well as doing a series of exercises with colour optics and simultaneous contrast. Subsequently, the students work individually to create colour schemes for designs from their field of study. The students are thus working with colour in practice, so that through their own direct experience they gain knowledge of colour theory. This teaching approach is supported partly by colour theoretical and partly by didactic considerations:

According to Albers's colour theory the perceived colour is dependent on its environment[3] and to fully understand this phenomenon the students themselves must experience colour perception. It is a moment of excitement when a student see the blue tones in the shadows at sunset or realises that all after images are complementary to the colours first observed. From a learning perspective we work with Dewey's theories that states that the cognitive learning is most effective when you sense and make your own experiences.[4] In the first part of the class a teacher-centred approach is applied through lectures and demonstration. The second part of the class is characterised by a constructivist approach where the students work actively with the material.[5]

Artistic research project

In 2015 a development project was initiated at DSKD. Its aim was to provide new knowledge about teaching in colour. One of the intentions was to look at what methods students use when they match colours. The goal was to create a didactic tool for classroom use that would not only strengthen their

Colour Combos. Methods in design education | Maria Kirk MIKKELSEN

123

competences in colour matching but also serve as a means to ensure that they made use of the learning later in their studies. The project carried the working title: *Palet*, which is Danish for palette or colour scheme. The observation of students' work with colour presented three insights:

1 – The students' approaches to creating palettes are often highly intuitive. This means that they tend to pick colours randomly. For those students who are natural colourists this approach can be satisfactory depending on the actual case they work on but for the majority this working procedure is linked to some problematic issues. The result of the impulsive approach can be that the students often work with the same personal and limited colour range project after project or they are inclined to choose whatever colours are in fashion at the moment.

2 – The students who have not had any previous experience with colour and therefore not gained a lot of confidence in the field tend to leave out colour considerations in their design projects, either by applying colour to their design at a very late stage in the project or by working entirely in a grey scale or a monochrome scale.

3 – The majority of students tend to forget colour theory later in their studies and therefore do not make qualified colour choices in their projects.

The development of the colour methodology is an on-going project that consists of two phases. The first phase concerns the development of the methods. The foundation for this is the existing colour theory and interviews with practising designers. Thus, the project has revisited the literature, including Itten, Albers and Goethe[6] to examine theories of colour harmonies. Parallel to the literature survey, professional designers have shared their expertise and practical experience through informal conversational interviews.[7] Based on insights from the survey and interviews, various theories about harmonious colour combinations has been tested and formulated as methods for the students.

The second part concerns implementing the methods in colour classes and in individual projects in design education. The methods will be presented to the students as method cards that can be combined and applied at different phases in the design process.

Colour harmony versus colour scheme

The starting approach of the project was to investigate the colour theory and best practice in creation of colour palettes and formulate this as specific practices for the students. It became clear that there is a difference between a colour harmony and a colour scheme. The literature survey showed that the harmonies in colour theory in general are aiming at a totality with balance between contrasts, this being complementary, value etc. Whereas the interviews with design professionals showed that their colour schemes would often include an element of disruption to push the harmonious totality towards more discordance.

In 1975 the artist Kasper Heiberg set out to define the European palette.[8] He explained a palette as a coherent set of colours that do not necessarily have to be experienced together. The colours of a collection of nail polish or car colours are seen assembled in the store or in the brochure, but later they are detached from each other. The colours on a poster or a textile are however experienced together and stay as an ensemble.

Based on the above, the *Palet* project works with a definition of colour scheme as a combination of colours that are designed to perform together or be part of the same collection. And a colour scheme as either harmonious or with a discordance.

Result

The result of the project at this stage is a beta version of a set of method cards for design students to be used in the creation of colour palettes. Some of the methods are simple, others more complicated. Common to all is that they can be used in many contexts. The methods are divided into three categories: *Plan, Create* and *Adjust*. None of the methods are conclusive but indicate possible approaches to colour work. All graphical design is made in black and white so no colour combinations are indirectly proposed.
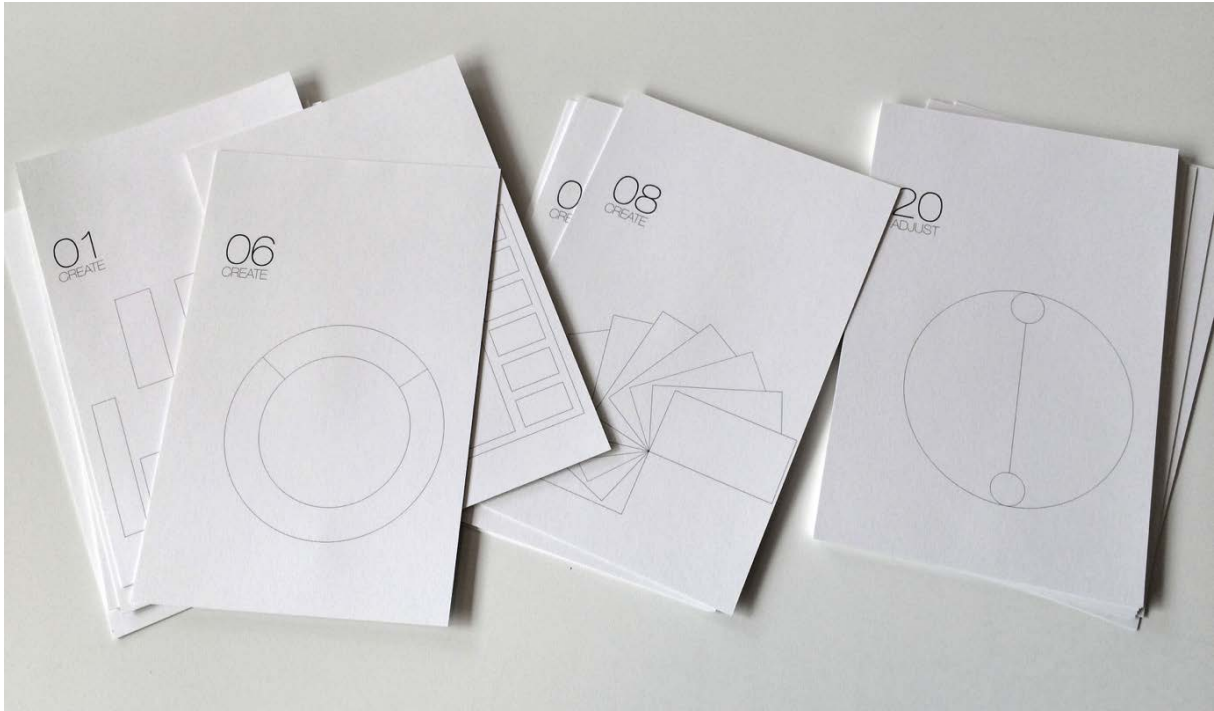
Figure 1. Method cards, designed and photographed by M. Kirk Mikkelsen, 2015

The colour work in a design process begins with considering the desired expression or the intention with the colour scheme. The *Plan* category represents this starting point and consists of nine cards, each presenting a goal for the colour palette and suggesting possible tactics. The *Plan* cards propose *Create* and *Adjust* methods that can be used to achieve the desired colour expression. The Plan cards are: *The Dominant Colour. One Pair. Balance. Contrast. Trend. Playful. Subdued. The Whole. Another Plan.*

The *Create* category consists of nine different methods to create a palette. The methods vary from quite practical and intuitive to completely systematic methods based on theories of colour harmonies. On the front the cards present a black and white graphic that illustrates the methods. On the reverse side of the card is a description of the method, pros and cons as well as a reference to theory or industry. The Create methods are: *Personal Colours. Complementary. Triad Tetrad and Max. Analogue. Colour separation. Historic Palette. Commercial Context. Concept. Monochrome.*

The *Adjust* category consists of nine methods. The methods are used to elaborate the created palette, to experiment and refine and are as such representing the iterations known in design processes. As the *Create* cards the *Adjust* cards also features an illustration, a description of the method, pros and cons as well as a reference to theory or industry. The Adjust methods are: *Invert Some. Invert All. Overtone. Bridge. Perfume. Scale. Pairing. Double Up. Reduction.*

A hypothetical case
To understand how the method cards work a hypothetical case is here explained; a student wants to choose colours for a set of plastic toys, but intends to give it a sophisticated look that appeals to Scandinavian quality-conscious parents instead of traditional colour choices for children such as bright primary and secondary colours.

The *Plan* card; *Subdued* is choosen. The reverse of the card states:

<u>Goal:</u> Subdued is a colour palette with low-intensity colours, which are often connected to natural materials, vintage and quality.

<u>Recommended methods:</u>
Create: Complementary. Monochrome. Analogue. Colour Separation. Historical Palette.
Adjust: Overtone. Bridge. Perfume. Pairing. Double Up.

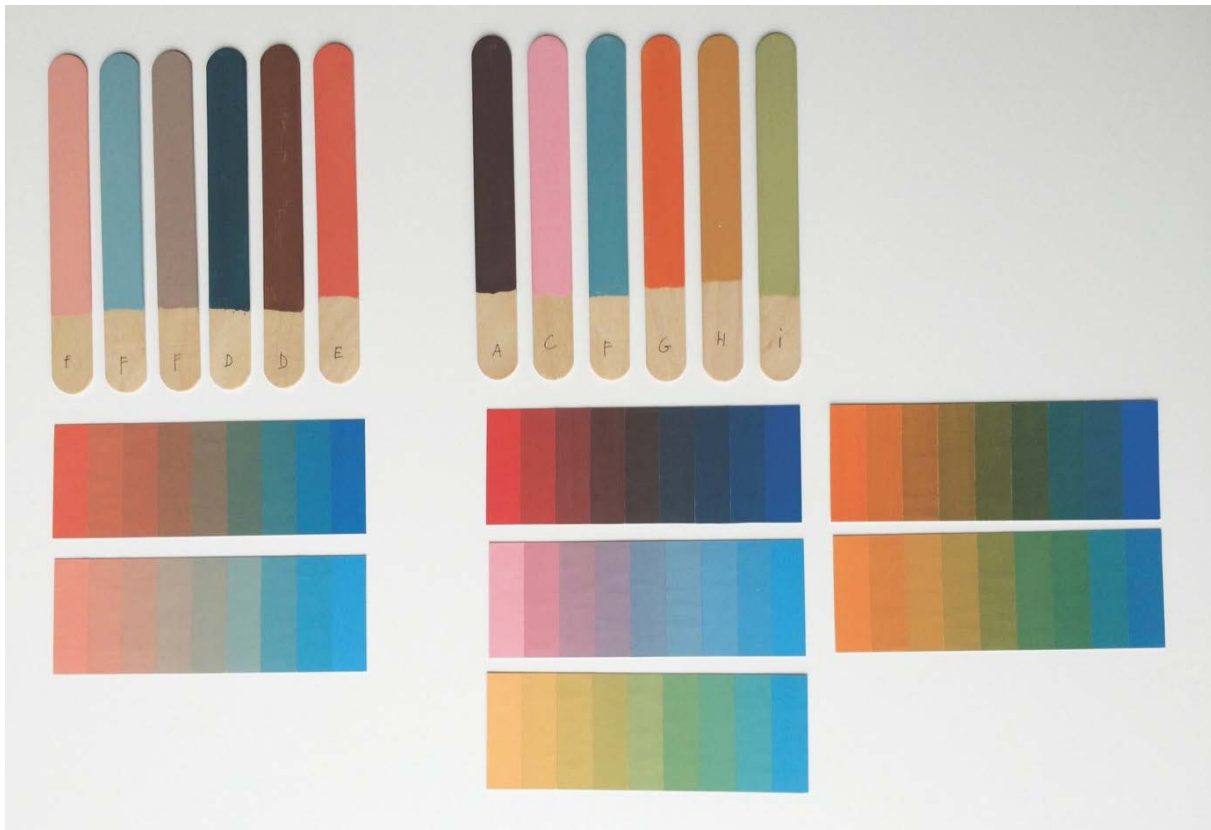**Colour Combos. Methods in design education** | Maria Kirk MIKKELSEN

125

Figure 2. Experiments with the Create method: Complementary. Created and photographed by M. Kirk Mikkelsen, 2015

The photo shows work with the *Create method: Complementary* where the method has been extended with several related complementary scales. The study is based on the scale from blue to orange. Three scales are created with high colour intensity, respectively blue to yellow-orange, blue to orange and blue to red-orange. These three scales are repeated twice mixed with white in various amounts to obtain a light value and the lower colour intensities. Thus, there are a total of nine variations of the scale blue to orange. The colour palette on the left consists of colours selected from three of the scales and the palette on the right consists of colours selected from six of the scales. In its pure form it can seem a bit predictable, but the composite palettes are surprising.

From the *Plan* card the *Adjust method: Overtone* could be chosen. The reverse of the card states:
Method: This method can be used to unite a diverse colour scheme. Select a colour that you want as the tone and mix a bit of it in all colours in the palette. Try with both light and dark colours, with different hues and in different amounts.
Pros and cons: The method is simple and therefore easy to use. If the palette is added too much of the overtone it can become uniform and monotonous.
Reference: David Hornung has described the method.[9]

The photo shows work with the *Adjust method: Overtone.* The work has been carried out as hatching with markers. The colour scheme in the middle shows the original colours. Adding a layer of hatching with cyan has toned the one to the left. Adding a layer of hatching with yellow has toned the one to the right.
The final colour palette must always be evaluated up against the intensions of the design project. The method cards provide no guidelines for the evaluation at this stage, so the process will be based on judgements from the student, tutor and the potential user.

Figure 3. Experiments with the Adjust method: Overtone. Created and photographed by M. Kirk Mikkelsen, 2015

Conclusion

A group of students have followed the project from idea to result and have tried several of the methods. Based on the response received from these students the colour methodology will be applied in colour classes in the autumn semester 2016 at DSKD. There has been great interest among the students. Those with little or no previous experience with colour have used the method cards as concrete tool for making colour schemes as well as a navigator in the vast field of colour theory.

The methods will be introduced to the students of our basic colour class on the first semester. Here they will serve as a didactic tool for the teachers both through theory and when students work in practice. Furthermore, it is expected that the methodology can be a tool for the students when they create and adjust colour palettes later in their education.

Discussion

Applying design method card as for example the IDEO cards[10] or the 5C model[11] in a design process can be a rewarding way to manage and inspire the process. It can conversely also be prescriptive and retardant for intuitive workflows. Therefore, this colour methodology must be regarded partly as a didactic tool and as an inspiration to work with colours.

The project also raises the question on how to evaluate the colour work done by students after the implementation of the methodology in colour classes at DSKD. Both colour theoretical and didactic approaches must be considered and it might be executed by comparing the result of previous years colour classes. However the long-term effect on the students approach to colour work must also be taken into consideration.

Colour Combos. Methods in design education | Maria Kirk MIKKELSEN

127

References

1. Itten, J. 1973. *The Art of Color: the subjective experience and objective rationale of color*. New York: Van Nostrand Reinhold.

2. Maxwell, J. C. 1857. *XVIII.—Experiments on Colour, as perceived by the Eye, with Remarks on Colour-Blindness.* Transactions of the Royal Society of Edinburgh. Royal Society of Edinburgh

3. Albers, J. 1975. *Interaction of Color*. New Haven: Yale University Press.

4. Dewey, J. 1938. *Experience and Education*. New York: Collier Books.

5. Dolin, J. 2015. Teaching for learning. In: L. Rienecker, P.S. Jørgensen, J. Dolin and G.H. Ingerslev (eds.) *University Teaching and Learning*, Samfundslitteratur, pp. 65–91.

6. Goethe, J. 1997. *Goethes farvelære*, 2nd edition. Copenhagen: Hernov. First edition: 1810. *Theory of Colours*, John Murray Publishing.

7. Turner, D. W. 2010. Qualitative Interview Design: A Practical Guide for Novice Investigators. *The Qualitative Report*, vol. 15, No 3, pp. 754–760.

8. Heiberg, K. 1975. *Den europæiske palet*. Copenhagen: Bergs Forlag.

9. Hornung, D. 2005. *Colour. A workshop for artists and designers*, London: Laurence King Publishing

10. IDEO Method Cards: 51 Ways to Inspire Design 2003. William Stout Architectural Books.

11. Friis, S.A.K. & Gelting, A.K.G. 2014. THE 5C MODEL. Presented at the DesignEd Asia Conference, Hong Kong, www.designedasia.com/proceedings.php.