

Creative Colour Education

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ABSTRACT

The colour science is a part of many different educational fields. This means that it is treated from many different aspects and according to different disciplines. If one considers the interdisciplinary features of colour science and the different angles of approach and the different facets of colour which exist, unexpected opportunities open up for the treatment of colour in an education context. The purpose of this paper is to show how the colour education can develop creative environments where creation, communication and exchanges of experiences between different disciplines are the central point and also to show the role of the AIC Study Group on Colour Education in this matter.

Keywords: colour education, colour studies, AIC Study Group

1. INTRODUCTION

What does Creative Colour Education mean? Creativity is the ability of a person to solve problems by new methods or to create new products in art or technology, for instance. Creativity has been the subject of intensive research in psychology and pedagogy since the mid-1950s. I found this in my encyclopaedia. The act of creation is an important factor in colour science, and this is what we must develop in order to stimulate the interest in colour and in the importance of colour. Without inspiring and interesting colour education, there can be no good breeding ground for colour research. I want to do my best to give a few angles of approach to how more creative colour education could be achieved.

2. TRADITIONAL COLOUR EDUCATION OF TODAY

2.1 Traditional Colour Theories

What first comes to mind when discussing creative colour education are these three colour theories:

- Goethe's colour theory in which several of his experiments on the influence of colours can be made in colour education. The experiments are not aimed at proving anything, but are merely a way of becoming acquainted with colours and making one's own observations as regards light and the perceptions of colours (Sällström 1966).
- Itten's theory of colour harmony in which harmonious combinations of three and four colours are created in a colour circle designed for this purpose. The geometrical figures can be turned to any initial position. Itten does not define his colours other than by colour words and printed pictures. Analysis of these will reveal that yellow corresponds to Y20R, orange to Y58R, red to Y96R, violet to R55B, blue to R72B, blue green to B13G, green to G18Y and yellow green to G40Y. Itten's colour harmony system is expanded here so that one mixing series with white and one with black accompany every chromatic colour. The colours of the arms of the star give harmonious combinations if they are arranged symmetrically in accordance with Itten (Sisefsky 1995).
- "Interaction of Color" by Josef Albers is a description of an experimental way of studying colour and of teaching about colour. The objective of his colour theory is to employ practical colour experiments in order to develop a sense for colour and learn to recognize the influence of colours on each other, and about the variability of colour impressions. They are aimed at opening our eyes and making us better able to see. It is only what you see that is correct (KG. Nilsson, 1981).

These three colour theories are obviously important in developing our attitude to colours, to seeing colours, to being inquisitive, to being fascinated by colours and choosing to go further. But is this enough? There are great opportunities for developing colour education further.

2.2 A Study on Colour Research in Architectural Education

In a study carried out by Janssens & Mikellides (1998) the knowledge of architectural students about perceptual and psycho-physiological aspects of colour, colour nomenclature, existing myths and beliefs, and how colour is used in their everyday work in studios was investigated. A comparison was made between five schools of architecture, three in Sweden and two in

United Kingdom. Colour is considered by all involved to be an important subject matter in the education of environmental designers. This point of view seems nevertheless to have little influence on the educational situation in most architectural schools.

The success of education is dependant on many factors: the overall goals, methods, and resources; the engagement and competence of the lecturers; the quality of the teaching materials and other educational media; as well as the students' own personal resourcefulness, interest, and motivation; all these factors combine to play a decisive role in pedagogical accomplishments. Most of the students complained about the lack of coverage of the subject area in lectures, seminars, or studio work, with very little theory and only few practical exercises. Because students perceive colour design as their own future responsibility and basic design education seems to be the main source of colour information, the problem of this deficient knowledge should be seriously addressed by researchers and educators.

From the Swedish part of the study you could find out that schools educating interior designers spent more time on colour related subjects, as compared to schools of architecture. They treated colour more as individual subject with their own teachers, giving opportunity to a both broader and deeper penetration of the subject. In schools of architecture, at the initial stage, the departments of theoretical and applied aesthetics were responsible for colour education. Here, due to time scarcity, colour was often integrated into other related subjects, thus obstructing a more thorough treatment of the colour subject itself. Student projects at architecture schools were only seldom presented with careful colour accounts, more often at schools for interior designers. Interior design students also dealt with colour questions during the entire project work, from start to finish, while architecture students often tended to skip colour problems until the final stage of the design process. However the design process should be reversed; you should start with the colour and form together.

3. THE INTERDISCIPLINARY NATURE OF COLOUR SCIENCE

Because of its interdisciplinary nature, colour science has no natural home and is therefore part of many different educational fields. This means that it is treated from many different angles and according to different disciplines. Colour science is dealt with in phenomenology, physiology, physics, psychophysics, psychology, philosophy and aesthetics. It is therefore treated from a variety of different angles and by different disciplines, which need not be disadvantage. On the contrary, it can create exciting meetings since, to many people, colour gives rise to many different notions of what it can be. Physicists think in terms of radiation and wavelengths, the chemist thinks in terms of pigment and material mixtures, the physiologist thinks in terms of anatomy of the eye and the behaviour of receptors, nerve cells and brain centres. The psychologist thinks of colour as perception of the senses and human influence, and the painter thinks of his palette or the expression of the colour. The architect and designer think of colour as a property and experience related to objects and their function in the environment.

If one considers the interdisciplinary features of colour science and the different angles of approach and the different facets of colour which exist, unexpected opportunities open up for the treatment of colour in an education context. It is possible to develop creative environments where creation, communication and the exchange of experiences between different disciplines are the central point. In this respect, colour science is unique in the field of education. There is no other branch of science which concerns so many and which can create so much involvement from the students.

Colour science often falls within an artistic subject and it is often the artist who teaches about the colour in the picture. This education often deals with how to mix a colour, the practical details of how to paint and how to use colour in the creation of a picture. This type of education does not, however, give any practical instrument or unambiguous way of communicating colour.

It is important for the colourist with a sensitivity for small differences in nuance to choose colours with great care. It is therefore important to have an unambiguous colour language from idea to result. A perceptual colour description system which describes colour as we see it, can lead to different proposals for experimenting with colour compositions. Trials in which colour combinations corresponding to the concept of beautiful have been investigated (Hård & Sivik 1989) have suggested that similarities and relationships between colours are aesthetically highly valued.

A colour system does not necessarily give pretty colour combinations, but it does provide a tool for experimenting with different colour harmonies. It is possible to test the effects of different colour compositions and colour combinations and then perhaps to build on this. Colour compositions can be analysed and documented with the help of the colour system.

Starting from a given colour, it is possible to investigate possible combinations with other colours. This gives an overview of the possible choices, which exist. It is possible to see which choices lead to a new content and which choices are less important. It must be reasonable to be able to develop one's colour concept by observing what the colours look like and how they relate to each other.

4. SOME EXAMPLES .

4.1 Metamorphoses – a study in colour compositions

The purpose of the Metamorphoses study by Jörgren Lindgren (1993) is intended to demonstrate in a simple and lucid manner how the form characteristics of a composition can be changed by consciously playing on the various properties of colours and, on the basis of the same formal basic pattern – or the same colour range – compositions can be created with entirely different expression values. Jörgren Lindgren was professor at the School of Art and Design at Gothenburg University. He used the NCS system as an analysis instrument in studies of different types of colour compositions, for which it proved to be very useful. In Metamorphoses – a study of the formation properties of colours – he reports on two different series of colour compositions, one of which is based on the same form structure and the expression of the composition is changed by different colour choices. The second series is based on a certain range of colours comprising five recurrent colours, but where the form structure is changed and gives the various expressions. It can be observed spontaneously in the two series how the form and expression changes take place when the colour relations are changed from composition to composition. In most cases, we should perhaps be content with the “immediate” experience through the senses, but a “tool” is needed in other cases for analyzing our experience. What means has an artist used for achieving the expression values that we, as observers, take in through our eyes? This may apply, for example, in an educational situation, artist education, art science studies, etc.

4.2 The rich colours of Savannah

When Byron Mikellides from the Oxford School of Architecture was lecturing at the Savannah College of Art and Design he started a project which aimed was to record in a systematic way using both visual images and scientific notation, the rich colours of Savannah's natural and man-made environments. The students did notate the colours for certain points – for example, the different ways one can look at a building – and different contexts, such as the different seasons. The NCS notation was determined for each observed colour. They recorded the colour from roofs to floorscapes but also the colour of the native plants and trees. During one weekend almost 50 students were collecting “natural colour samples” in different materials. They collected stones, sand and earth. They took photos of wrought-iron goods and plaster facades. They picked up beautiful flowers like magnolias and azaleas. This “nature colour samples” were then analysed in NCS and the result was a fan deck of the colours of Savannah. A project like this can be the basis of several proposals not only in conservation but also in upgrading and revitalizing local areas. This kind of project can also be utilized in all disciplines in colour education like in architecture, interior design, textile design (folk costumes, fabrics) and graphic design (signs and symbols).

The students have to learn the basic systems to be able to communicate colours and they also have to have discipline and practise their technical skills so the result will be a clear and structured proposal or idea. Limitations activate student's creativity. Much would be gained if knowledge and creativity could be combined, but not at the cost of artistic quality and a feeling for colour. It is all about getting to know your means of expression. And this is the task of colour science: To train one's sensitivity for colours so that one can play with them like a skilled musician on his instrument, but you also need the musical notes, a colour language with which to communicate and document colours.

5. THE AIC STUDY GROUP ON COLOUR EDUCATION

The Study Group on Colour Education of the International Colour Association (AIC) is an international network of scientists, teachers within the field of colour (colour theory, colour design, colour psychology etc.) and other professionals like designers and architects with a specific interest in colour education.

5.1 Aims of the Study Group Colour Education

- Exchange of knowledge and experiences among its members.
- Stimulation of teaching and research.
- Inform about coming congresses, seminars, workshops and exhibitions
Which might be of interest for the members of the group.
- Share with other members news from congresses, seminars, workshops, publications and exhibitions.

5.2 Membership of the Study Group Colour Education

Membership is free, and is available for every person/organization who/which scientifically or practically deals with colour in colour education, contributes to the realization of the aims mentioned above to generally support the Study Group. The requisites for being incorporated as a new member of the Colour Education Study Group are:

- To subscribe and participate in the e-mail list
- To have presented a paper or poster at an AIC meeting

5.3 A worldwide network in colour

I think if this group shall be a good network we have to work together all of us. I also hope that you will mail me information, which is interesting for the whole group; if there is a colour seminar in your country, new colour studies, new methods of teaching colour or literature etc. This is also a very good network for different small projects. I have many "projects" in my mind. In the Study Group we have started the work with a list over literature and references used in colour education. I thought this would be of great help for all of us. The members mailed me different titles of literature used in colour education to me and I have compiled a list over this literature.

When we are all teaching we will meet a lot of students and we can in a very easy way affect some small studies with the students. We can for example carry through some small studies in colour preferences. Today we are 27 members but we have 16 nations represented in the group, and that's makes it very interesting. I also hope that we after this AIC meeting will grow bigger. It is a very good opportunity for some small cross culture studies where the results will be useful in the colour education.

5.4 Projects within the AIC Study Group on Colour Education

Except the project with a literature list we have also started a project within colour preferences. It is very common when it comes to colour analysis to talk about colours in names of different pigments like ultra marine blue, cinnabar red, emerald-green and so on or with more or less imaginative colour names, often colour names dependent on fashions, like heaven blue, lavender blue etc. You will soon find out that this way of describing colours gives you very grave limitations and it is not an unambiguous way of describing colours. If you want to penetrate the colours in a colour analyse it is better to complete the poetic or emotionally charged colour words with colour notations based on perceptual grounds, like a perceptual colour order system. In the Study Group I asked the members to carry through this small project: Ask your students to pick up a colour sample, which they associate with:

1. Old rose
2. Plum
3. Heaven blue

The results were notated in either Munsell or NCS notations.

How can the future be in this Study Group on Colour Education? It can be the unique network in colour education if we get more members and from even more countries. So, I wish you all working with colour education very welcome, just send me an e-mail swedish.colour.center@ncscolor.com and I will send you information. I also hope that the activities among its members will increase and then we will have an even better network for exchanging experiences. We really have good opportunities for that.

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