

# MOVEMENT IN AESTHETIC FORM CREATION

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## ABSTRACT

This paper presents the good practice based experiences found when movement is used to strengthen form creation and to create flow in the process of artistic education. Faced with the design engineering students' problems with creating forms with aesthetic statements, the experiences with movement inspired the thesis that the design engineers' training in aesthetic form creation can be improved by integrating the movement potential into their education. The paper documents the on-going work on developing a model for embodied creation of form called 'Somatechne model'. The study also identifies a lens to assess the students' development of mind-body skills, known as 'The Three Soma'. The Somatechne model also helps to identify the activity that gives the students the opportunity to develop their sensibility and thus aesthetic attention.

*Keywords: Embodiment, form creation, movement potential, Somatechne model, The Three Soma.*

## 1 INTRODUCTION

This paper seeks to contribute to the solution of the fundamental problem, which was described by Kieran Egan<sup>1</sup> in 2004: "Somatic understanding precedes all others, and persists while our symbolic forms of understanding develop, and it shapes those symbolic forms of understanding in profound and subtle ways. Understanding human cognition, then, requires our careful attentiveness to the body that is their foundation. We have attended to the body's role in our cultural lives and especially in education far too little." [1] Only ten years later, the Danish Ministry of Education implemented a primary school reform with emphasis on the embodiment of teaching subjects such as mathematics and language. Simultaneously, several studies have shown that varied physical movement will cause nerve cells to make new links that strengthen the communications between brain cells and thereby amplify alertness, attention and motivation. And physical movements also encourage the development of new nerve cells from stem cells in the area of the brain called the hippocampus [2]. These studies have been based on human adults up to the age of 64 and rodents. Integration of motion in teaching is referred to as embodiment [3]. The recognition of a need for embodiment in university education has far-reaching implications for how the education is organized and how the study facilities will be selected. In addition, it has consequences for the choice of materials for the form-creating processes, because the form must invoke reactions against the creating force. There will also be a critical need to examine which sort of somatic attention that can be sharpened in order to refine the reflection. In addition, the curriculum and the training should be structured so that it supports the "culturally established ways of paying attention and with one's body in surroundings that include the embodied presence of others" [4], [5]. Due to the limited format of this paper the ethical theme 'bodily interaction with others', which is closely related, will not be considered. The school reform has also been a motivation for this study given that its implementation probably will give rise to future students having a hard time adjusting to the university environment, where teaching will increasingly be based on lectures and stilled seated in groups or at computers.

The present study is delimited to the problem of design engineering educations that do not focus on embodiment and how this is linked to the students' problems with aesthetic form creation. It has inspired a thesis on how the design engineers' training in aesthetic form creation can be improved by integrating the movement potential into their education. The idea is to identify the first activities in a

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case study of the Billedskolen in Nørrebro<sup>2</sup>'s didactic principle, where movement was included as a key element, especially in the form-generating activities. The purpose is to highlight other facets than those usually offered by design engineering educations, in order to find new movement potentials. Form creating activities containing physical movement also have the potential to generate flow, which refers to a condition where a person is fully immersed in the activity, "because this activity hogs all the approximately 114 bits psychic energy / attention that is available per second, given that the activity is optimal challenging" [6]. It is typically activities where participants contribute to defining the goals and generating clarity about what to do and thus realise to which extent it is possible to solve the task, with the given skills.

The concept of flow is known among designers who work to transform the latest technological progression to entirely new product categories. For example, the Norwegian multi-artist Pia Myrvold who, in connection with the project 'Flow - a work in motion', explained how she took advantage of flow. For Myrvold flow is to be so inspired that the activities, movements and thoughts merge. Myrvold says that she worked in flow during both the planning and the solution of the artistic, technical and practical problems connected with integrating digital media with mobile technical installations, in order to offer unique experiences [7]. Therefore this study will also focus on phenomenological elements that characterize the flow.

## 2 THE EDUCATIONAL PRACTICE AROUND MOVEMENT IN CREATION

The separation of mind and body has long been dominant in universities but René Descartes (1596-1650) prepared a way for the recognition "of human beings as necessarily 'embodied' or 'incarnate'" [8]. Friedrich Nietzsche (1844-1900) said: "Contrasting two views; one maintaining 'I am body and soul,' and the other, more enlightened view, which maintains 'I am body entirely, and nothing else beside; and soul is only a word for something in the body'." He elaborates this position further in the following paragraph: "But greater than this - although you will not believe in it - is your body and its great intelligence, which does not say 'I' but performs 'I'" [8].

Maurice Merleau-Ponty (1908-1961) "emphasises embodied perception and the notion of "lived experience". Furthermore, Merleau-Ponty talks of the "body-subject" and emphasises the primacy of perception in our relations with the world" [8]. The spatial perception Merleau-Ponty talks about, was also a key element in Billedskolen's didactic model. Bjørn Bråten<sup>3</sup> describes it as learning through an exchange between susceptibility, reflection and power of expression. In practice, the susceptibility is trained through challenge of both sensory apparatus as motor and balance apparatus [9]. See Figure 1. The theoretical side of susceptibility was trained through research, analysis and discussion. The power of expression would, with Descartes and Nietzsche's words, be the same as the embodied or performed 'I', while partly the movement and partly the generated image set marks in the world.

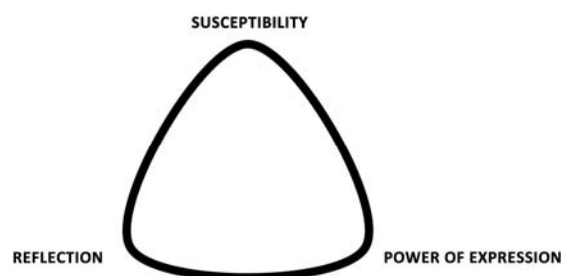


Figure 1. Billedskolen's didactic model

Both the experience from susceptibility and reactions from the power of expression establish a basis for reflection on the form and the creation process. The reflection worked back on susceptibility and power of expression in the form of increased alertness and inspiration. The context and the interaction with others will influence the process and so will feedback from for instance presentations to colleague and to manufacturers or at exhibitions.

<sup>2</sup> Billedskolen on Nørrebro (1971-2011) subsequently it changed name to the Copenhagen School of Arts and its educational profile to a more art-theoretical approach at the expense of the technical disciplines.

<sup>3</sup> Billedskolen's founder and leader from 1971 to 2011.

## 2.1 A Proposal for a Model for Utilization of Movement in Aesthetic Form Creation

Judith Davidsons<sup>4</sup> notes that “the learning of an art form is always a balancing act between technique and expression. Technique being the knowledge of skills, materials, history, and usage in the context of practice, and expression the context of evaluation, meaning, and significance in which technique is displayed. Expression is a highly narrative act, embedded in stores and cases that comprise meaning. Technique and expression are interwoven through activity that unfolds in time and space.” [10] Art forms are an aesthetics matter and a matter for analyse, which also analyses the techniques behind the creation of art; but all objects that are institutionally categorized as art are not aesthetic and many technical products that offer aesthetic experience are not institutionally categorized as art. Design engineers focus on creating technical products that meet Alexander Baumgarten's aesthetics considerations, therefore the model has to centre on creating forms that either immediately allow for sensory experiences or through interaction with the form [11]. For example, dumper drivers may feel that they have supernatural powers, when they move dirt. The concept of technique involves movement in two meanings of the word:

- The force that masters a tool or leaves traces directly in materials.
- A form with a textured surface i.e. a relic which make up a readable trace.

In line with other people, movement can transform a technology from an experienced to a novice and the rhythm can generate flow in the process. A model for the use of movement in aesthetic creation can be made on the basis of the didactic model and techniques that train motor skills and balance, as well as these senses:

- Susceptibility increases through the study of traces of techniques and practice in the techniques with reflection on perceptions and the importance of techniques for the creation and, if possible traces that make sense in relation to an aesthetic statement.
- Power of expression increases in practice through materialization of the leading feature while the stepwise development is documented and evaluated.
- In relation to the movement aspect, the reflection focuses on the embodied part of the process and the obstacles sought to overcome.

The model is called ‘Somatechne’ as it is develop by crystallization of embodiment and technical elements from the didactic model. A bit of research shows that the word construction soma-techne is not new; but has been used both to describe body-technique to control technology and technical control the body's functions. The concept soma means the recipient, executive and reflective ‘I’. The somatechne model is used as a basis for discussion in following section where I explore the ways the model's three instances appear in form creation in Billedskolen’s practice.

## 3 DEVELOPMENT OF THE THEORETICAL BASIS

Somaesthetics provides a way to “correct the actual functional performance of our senses by an improved direction of one's body, since the senses belong to and are conditioned by the soma. Socrates long ago insisted that the body be kept fit and healthy in order to augment the accuracy and range of our perceptions. ‘The body is valuable for all human activities, and in all its uses it is very important that it should be as fit as possiblex’” [12]. Somaesthetics is defined as “a discipline devoted to the critical, ameliorative study of the experience and use of the body as a locus of sensory-aesthetic appreciation (*aisthesis*) and creative self-fashioning” [12]. Self-fashioning is not directly an issue that concerns design engineers, but many of the tools that are used for self-fashioning are. The body’s development is then the indirect goal for the effect of such tools. With somaesthetics Richard Shusterman<sup>5</sup> point out that the body is a readable mirror of our mental reactions. For example, a tension can be an expression of a discomfort caused by using a tool.

Bergit Arends has collected a catalogue of the connections between mental reactions and body language, which design engineers use in their usability studies [13]. Søren Kirkegaard also had an eye for the body’s movement (human action) as a mirror for mind’s movement, as he describes the analytical approach as follows: "I look only at the movements. But I do indeed look at them, and I do not let myself be fooled, either by myself or by anyone else." Design engineer use the same approach

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<sup>4</sup> Associate Professor, Educational Technology & Qualitative Research Methods UMass-Loweils Graduate School of Education

<sup>5</sup> Dorothy F. Schmidt Eminent Scholar in the Humanities, Professor of Philosophy, and Director of the Center for Body, Mind, and Culture at Florida Atlantic University

in order to clarify the true behaviour of the users. The observation of what users do carries with it more weight than what they say they do. For this study Kirkegaard's discussions is interesting because they put the aesthetic reasons for moving above the ethical reasons.

Analytical somaesthetics forms a whole array of interesting knowledge about bodily forms, norms, practices and techniques. Nietzsche observed that man: "does not say 'I' but performs 'I'." This observation is relevant for analysing product handling in connection with documenting a ritual which involves a product. For example, when determining if the ritual of brewing coffee including the roasting and grinding of the beans adds such pleasure to the user's experience that capsule coffee makers will not survive. Somaesthetics also opens up for the aesthetic angle on movement itself and thus on the behaviour pattern in the technique or the body's interaction with the tool. Somaesthetics practice that deals with the active body's physical training in reflective process also maintains and develops the inner sensibility. Somaesthetics' central argument for the embodiment and thus for the movement's impact on form creation is: In order to learn to think "it is necessary to exercise our limbs, our senses, our organs, which are the instruments of our intelligence." And "Somaesthetics (as the term *aesthesis* implies) is concerned with educating the bodily senses (including our kinaesthetic and proprioceptive senses) that are needed to properly direct the bodily powers we deploy"[12]. Design engineers deal with how humans perceive the limbs' location in relation to the body in ergonomics and the body's interaction with machines under the theme: 'human machines interaction' with, at best, considerations of wellbeing. These somaesthetics considerations make it clear that both movement and sensation must be a key element in the somatechne model, if it is to contribute to the aesthetic angle on form creation, while Kirkegaard reminds us of the ethical angle.

### **3.1 Looking at Movement Potential in the Billedskolen's Practice**

The training at Billedskolen was theme based with material and technology testing in combination with form experiments. The program was based building a repertoire through testing and understanding of the impact of the various initiatives to develop form. The students worked with both 2D and 3D sketching while walking or standing by easels instead of sitting or lying with easel plates. A 3D sketch is a physical object in a different material than the final form. Sketching represents both training in techniques, in registering and in exploring the solution frame and the development of form. Because computers can still only interact with the body to a limited degree, they are currently used almost exclusively as an independent visual medium. During 2D sketching the motion gives direction and rhythm to the image while the movement responds back to the body, so that the movement can be felt in the image. In the work with 3D sketches and forms, the student uses the power of movement to create the form and the reaction relays the feeling of the form to the body. The students must constantly move around the form and change the visual angle to reflect on each addition or reduction of it and to counterbalance it. The movement and the resulting power of expression can be observed directly in the process and in the form development. A mental image is not capable of maintaining the experiences of the form as a basis for evaluating its development compared to earlier stages, and give a basis for choosing new initiatives. Therefore 2D sketching or photographing from all angles was used as process documentation along with the creation of new 3D sketches. The documentation also makes visible the student's reflection and together with 3D sketches establishes a basis for discussion. The students also move around in the room when they, on the one hand, reflect upon the impact of the form in the given context and, on the other hand, study the movement of other students' bodies in their form creation. The body's relative movement in space around the form is a prerequisite for the spatial perception during form creation, while, at the same time, the shifts between techniques and materials challenge the senses. The assessment of the student's knowledge and competences was not based on specified levels for each semester, but relative in relation to the student's proficiency at the latest assessment. The development of susceptibility can only indirectly be assessed in the meeting with the student, for as Shusterman writes: "The inner sensibility, that one here generates through one's reflections is harmful. Analysts easily get sick.... One must be self conscious in observing one's own representations and sensations (one feels oneself completely)"[6].

### **3.2 Looking at the Mind-body Skills Development**

Judith Davidson's use of 'the lens' in her method 'The Three Bodies' and Richard Shusterman's somaesthetics raise three important questions for examining that part of design engineer's curriculum, which revolves around the creation of aesthetic form [10] [12].

Davidson's lens was used to record embodied knowledge in art education - in music, visual arts, dance and drama - at grade school level. The lens is a good starting point because while visual arts may include form creation, sound design can also be an integrate part of product design. In addition product design is often staged in connection with presentations. It is necessary to sharpen the lens on design educations and adjust it in relation to the somatechne model. The adjusted lens is called 'The Three Somas' to avoid confusion. The lens three focus points and questions are:

- The individual and physical soma: an instrument to construction and presentation of knowledge through objects. How can the body be used as an instrument for the student's communication of and experience with aesthetic statements?
- Social soma: an instrument to construct the patterns of movement and present persona and interpret other people's knowledge about such personas and movement patterns associated with social structures or groupings. How can students learn to stage aesthetic movement patterns or personas and decode other people's bodily experience of the same?
- The institutional soma: an instrument for the institution's discipline and surveillance – specifically the design profession's regulations and ethical rules. How do the students learn to discipline their bodies' movement in form creation in relation to the educational institution's workshop rules, while maintaining an experimental approach?

The bodily ethical rules also restrict the students' behaviour in the case of field studies, study trips and when presenting product proposals to the client.

Courses in form creation and design projects will form the basis for exploring the ways in which these three instruments have been used in our design engineer education. Also I will investigate to what extent the institution's facilities and rules allow for the exploitation of the movement potential.

#### 4 INTEGRATION OF MOVEMENT IN A DESIGN ENGINEER EDUCATION

modules in the design engineering curriculum was chosen for the study in order to articulate where movement potential can be embedded either directly or with minor changes to the courses in the form creation of the courses: 'Form and Technique,' 'Form and Surfaces' and the elective courses 'Communication between Collaborators and Contractors', 'Organic Design', 'Exhibition Design and Production of Prototypes'. A similar investigation is made of the mini-project 'Product Design' and the projects 'Analysis of Works and Transformation' and 'Re-Design' and also 'Program and Concept'. It is a special challenge for design engineer students to incorporate usefulness in the product, but that also gives them an opportunity to create aesthetic experiences.

##### 4.1 Individual and Physical Soma

The typical procedure is to analyse the piece of art or design – analysis of form creation with functions and production demands integrated – and presentation of the product with arguments for aesthetic qualities. The courses 'Form and Technique' and 'Form and Surfaces' are compared. The first course works with small 3D sketches in plasticine and the second course works with moulds in plaster and concrete products with a weight up to 50 kg. The three elective courses work with measuring and copy making in heavy craft paper, organically shaped products and prototyping of furniture in steel with weave poly-rattan, respectively. The mini-project needs, just like the course 'Form and Technique', movement potential, because the products are too small. However, they were completely or partly produced in the right wood material, thermoformed plastic or sand cast aluminium or brass. The handling of the product, however, contributes to the development of susceptibility. The projects were all suitable for embodiment when the products were of body size or to be used by the body as is the case for toilets or car seats. Both the course and project modules introduced techniques, just as the students themselves look for inspiration from external clients.

##### 4.2 The Social Soma

Both of the courses 'User-oriented Design' and 'Service Design Method and Theory' as well as the project module 'Service Design' work specifically with 'the social soma', but none of these modules have a direct focus on aesthetic form creation or somaesthetics as such. But the modules help with contribute with tools for recording movement patterns and personas and include work with staging of the service products.

### 4.3 The Institutional Soma

The institution's frame and very modest workshop facilities have put ever increasing limitations on the physical experiments. The institution's lack of understanding for the value of learning through physical form experiments with a wide range of materials is a challenge. In combination with that the student milieu has not developed a tradition for a self-financiers approach to form creation. Such an attitude could be broken down with inspiration from Polytechnical Association, a student organization at Technical University of Denmark. The association has established its own workshops - electronics, photo, ceramics, wood and metal workshop and a network of contacts to suppliers of material and equipment with discounts.

## 5 CONCLUSION AND FUTURE WORK

This paper has established a theoretical foundation for the practice-based experience where the movement forces the form creation and generates flow in the process. A model for the embodiment of the creation process has been developed and named Somatechne. 'The Three Somas', which is a further development of 'The Three Bodies', is used to explore the possibilities of embedding movement potential into a design engineer's training in aesthetic form creation. The study reveals that the pedagogical practice in design engineer programs based on problem-based project and group work requires only small changes in order to allow for the need for movement. Big design objects with modelling can take advantage of the fact that movement boosts the power of expression and contributes to inner peace and joy which again generates drive in the modelling process.

In the future 'The Three Somas' should be studied further as a model to ensure embodiment of form creation. Similarly, the 'Somatechne model' should be tested as process model for form creation, particular on the importance of the techniques, which in present study were just was taken for granted.

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