RULES AND COMPLEX THINKING IN DESIGN EDUCATION

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ABSTRACT
This article seeks to reformulate the notion of basics as rules within the context of design education. The typical design education curriculum introduces *design methods* as a pedagogical approach. This includes concepts for how to approach goals and the means for how to solve problems or disclose possibilities. Such methods are comparable to the qualities of rules found in games and play, which in turn influence behaviour and mentality. We analyzed introductory course descriptions in design education as they relate to theories on play and game, phenomenology and pragmatist aesthetics. This exploration showed that there is a tendency to define basic knowledge and skills in the very first course in design education. We interpreted this to represent a belief in rules, as in truths, following a possible unconscious establishment of a tradition for the acceptance of certain rights and wrongs as well as automatic behaviour. We argue that such a recognition of rules as a pedagogical platform may transfer to students and represent a subsequent type of culture wherein the students follow instructions rather than think for themselves.

Keywords: Rules and education, play, basics, design pedagogy.

1   INTRODUCTION
Educators both experience and acknowledge that society has problems that relate directly to consumption and subsequently to design. Therefore, they frequently become involved in societal and environmental issues. These interests are often translated later into specialization courses in design education. Hence, handling complex thinking, social change and the global environment have become standard terminology in the learning outcomes in course descriptions formulated by educators who often have a design or art background. This implies that the educators are confident that designers can create benign solutions for indigenous people, malnourishment, for example, in social, cultural, psychological and biological contexts, among others, by acquiring what is believed to represent *basic* skills and knowledge, such as manufacturing, design methodology, and form giving. This in itself represents an interesting discussion. However, an even more interesting discussion that emerges from this setting concerns the pedagogical perspective that embraces the idea of something being basic. The so-called basic courses are built upon an ideology, and prepared with contexts and facts ready for the student to explore. Thus, they serve as an extension of the belief in rules and certainties as a pedagogical approach. Nonetheless, it is possible that in their effort to bring more meaning into design education curriculums, the educators are not aware of this positivistic stance as a fundament of their own teaching.

Designers, artists and engineers typically develop and operate the design education programs in Europe. Therefore, the pedagogical stance and educational content emerge from these disciplines. Accordingly, courses are developed and frequently inspired by traditions from early modernism and Bauhaus, which involves an emphasis on practical training in workshops with materials similar to the ones used in manufacturing as well as formal studies in colour, form, composition, etc. For the most part, these courses focus on what is believed to be basic knowledge and therefore often come in the very beginning of a design education program. Thus, without consideration of a context for the work, since this is given, non-existent, or not questioned, the students, for example, exercise to attain skills in drawing, the use of workshop machines, and routines with various design techniques. With these considerations, we formulated the following research question to explore how such an objectivistic pedagogical stance influences the work of students in design education: How can the idea of *basics* in design education influence the students' understanding of their own profession and its role in society.

2   METHOD

We performed a manual context mapping of study plans from Northern Europe to explore how rules, as a facet of teaching the *basics* within design education, potentially influence learning. Introductory courses were the object of this analysis. The empirical data were visualized using word cloud mappings, done with the web-based program *Word-it-Out,* in search of repeated words. This was done to establish a possible core pedagogical stance that these descriptions might contain. Because of the obvious weaknesses in the use of automatically generated word clouds as a method, the word clouds are used to both supplement and to visualize the research performed in this study. We analyzed the findings from the perspective of theories on game and play, phenomenology and pragmatist aesthetics.

3   FINDINGS

We analyzed the introductory course descriptions at five different universities in Europe. We found that they had a common emphasis on basic skills and knowledge. All of the descriptions of the introductory courses present the idea of basics for design education. Design basics are described as

Figure 1. Word clouds illustrating introductory course descriptions at five different universities in Europe

something that exists or that are fixed and furthermore needed in order to practice and learn, not something that the student attains. Therefore, the understanding of basics presented in these course descriptions involves the recognition of rights and wrongs in design education. The course descriptions contain several statements about basics for design education such as; 'The ability to be creative is basic for an industrial designer' [1]. Furthermore, a learning outcome formulation presents the idea of the possibility to attain 'basic skills in the development of ideas for a given context' and 'basic understanding of form and idea development' [2]. It is noteworthy that the introductory courses have limited curriculum materials with books or articles for the students to peruse. In general, none of the introductory courses refers to theory or literature to inform about the relevance or origin for the course.

4   BASICS

We disclosed three main understandings of the basics in the introductory courses. These included the ability to identify the basic differences within culture, theory, etc., to attain a foundation (basics) to perform a discussion and lastly to be informed about basic skills or knowledge, such as in composition. One main difference in these understandings of the basics is that the first two handle the basics as a dimension or object for analysis and further understanding, whereas with the latter, you are taught what basics are (as in a mathematical tradition).

5   PLAY

Rules are an important part of play. Play is defined in various disciplines; from evolutionary and psychological perspectives, it is frequently seen as a way of preparing for life [3]. These perspectives are typically oriented toward the consequences of play and the purposes that play serves, such as obtaining skills, and not what 'play is in itself' (Huizinga, 1955, p. 3). Within the boundaries of play or rules, a player would indeed ruin the game without serious intentions [4]. A high degree of seriousness involves the participants taking risks. Moreover, 'it is the risk that makes play attractive' [4]. Huizinga emphasizes play as a voluntary and 'free activity standing quite consciously outside ordinary life, as being not serious' and 'fun' [5]. Free, in this context, is understood as voluntary but not free from influence.

Caillois's work, which builds on Huizinga's *Homo Ludens,* categorizes four different dimensions within a game, see Figure 1 [6, 7].

Table 1. Caillois categorization of games

Games	Action	Condition	Main property
Agon	Challenge	Rivalry	Contest
Alea	Gamble	Tremor	Chance
Mimicry	Imitation	Simulation	Disguise
Ilnixx	Frolic	Vertigo	Balance

6   RULES

In this paper, we distinguish between a general understanding of the rules, which can be found in play and games, and rules as implemented traditions in education; and, as such, perhaps not acknowledged as *rules*.

Rules in education are frequently used as a context for confined and steered play to happen by, for example, narrow approaches, demands for open ended features, and forced relations to achieve 'guided reinvention' or enhanced and in depth creativity [8-12]. In this study, we understand such rules in education as pedagogical approaches or traditions within the design profession such as, for example, the Bauhaus approach. Furthermore, we understand these traditions to involve and not to question or change the skills they are believed to elicit. Accordingly, we understand them to represent the ideology of an educator, which one may assume are, to a large extent and possibly unconsciously, transferred to students.

The use of constraints as a technique to attain creative solutions and form giving is widely discussed and acknowledged in design research [10-13]. However, within this discussion, it is important to make a distinction between the maker perspective and the spectator perspective. Mikkel Tin, who explored rules from a maker perspective in his book *Spilleregler og Spillerom): tradisjonens estetikk (Rules and*

Play Space: The Aesthetics of Traditions), proposed that 'rules free the artist from responsibility' through limiting personal choices, which further 'makes a space for play' superior to the space that emerges by an autonomous process. John Dewey, who was interested in the spectator facet of experience, described resistance as a vital part of an experience for it to be whole; furthermore, that it can work as an 'invitation to reflection' [14] and further still lead to 'a higher complexity of thinking' [15]. Therefore, both describe a variation of emancipation. This distinction is to clarify our emphasis for the discussion in this article, which is at the intersection between education built on the recognition of basics, personal choice for students, and resistance as facets to reach a higher complexity of thinking as a design practitioner.

Dewey found it important to give people the possibility to make mistakes as part of their education and that restricted school activities hinders this. He also emphasized how one can learn to understand things more holistically and refuted the strategy of trying to 'make learning easier by breaking down something into separate parts and then assuming that the children will understand the whole' [12].

7 REFORMULATING THE NOTION OF RULES

Here, the discussion is oriented toward the research question: How can the idea of *basics* in education influence the students' understanding of one's own profession and its role in society. Based on the above definitions, it may appear that rules given by educators actually serve as *resistance* (Dewey) and make *space for play* (Tin). To discuss this concept, it is necessary to look deeper into the background for how introductory courses that present basic skills came into being. We do this by looking at theories on play, games and phenomenology.

7.1 Body and mind

The phenomenological view that the body and mind together is a source for experience and further understanding is similar to the processes initiated in today's study programs as well as to the Bauhaus pedagogy. As such, the statement by Descartes, 'I think therefore I am' is refuted and Edmund Husserl and later Merlot Ponty's 'I can before I know' or 'I can converse with the world through my sensing and vigorous body before "I think" world' [13-16] are embraced. Such a view emphasizes the importance of the body and senses as part of cognition and creation. This involves practicing skills until they are made 'automatic' to make space for play [14]. Nonetheless, it does not necessarily elicit situations of innovativeness, absorption, exploration, considering or playfulness if the context and goal for the work are given [14]. This might be one reason for the undisputed belief that basic skills and knowledge exists, which this research has revealed.

7.2 Play and automatic behaviour

Huizinga states, 'as the opposite of aesthetics is not ugliness but apathy the opposite to play is not seriousness but the automatic' [5, 7]. Accordingly, playing within the understanding of Huizinga with something concrete and experiential stimulates understanding. However, to prevent automatic behaviour demands a certain autonomy in *how* one plays. Nevertheless, as Katya Mandoka argues, based on Lakoff and Johnsens, 'the cognitive function' of metaphors is a 'projection of something concrete and experiential to understand something more abstract, is closely related to play [7, 17]. Mandoka therefore suggested Peripatos (explorations) as a fifth classification to Caillois's categorization of games, which entails exploration, as in 'what if,' to be a central facet of games (table 2).

Table 2. Katya Mandoka's contribution to Caillois's categorization of games

Peripatos	Exploration	Adventure	Conjecture

Therefore, when the student is not given the opportunity to explore cognitive and practical dimensions in a holistic (complex) context, they are steered away from the opportunity to explorative play and thus from reaching a higher level of understanding [18]. Hence, when the rules set by an educator serve as defined and unquestioned *basics* for a discipline, the means to understand the problems and possibilities involved, the reasons and goal for the study, etc., the student is left with merely performing automatic skills to model the thoughts and goals of the educator. Consequently, the student does not develop beyond the level of the educator and is instead held back and perhaps even misguided.

In consideration of the findings of Mandoka and Huizinga, the idea of play, rules and basics as part of design education should therefore be questioned. This leads us to suggest that students can benefit by making their own rules for how and what to design. In doing so, they will not only create and modify within a certain play space but also propose *to* and *how* to alter and create the play space itself. Therefore, when the students no longer have to acquire skills or acknowledge the rights and wrongs, design might become a free activity liberated from the ideology of the educator. Given the opportunity to think by themselves, the students might be able to engage with serious intentions and take risks as well.

7.3 Rules and basics as a pedagogical stance

The tendency disclosed in the introductory courses in design education involves the belief in basics as a pedagogical stance. Basics lead to teaching rights and wrongs and is followed by drilling the students toward automatic behaviour (Figure 2). Such pedagogy represents an objectivistic epistemological perspective. Accordingly, when one, for example, presents the basics by formal form studies or workshop learning in introductory courses, the students will be supplied with specific skills, but they will also be supplied with ideology pertaining to design rules and facts.
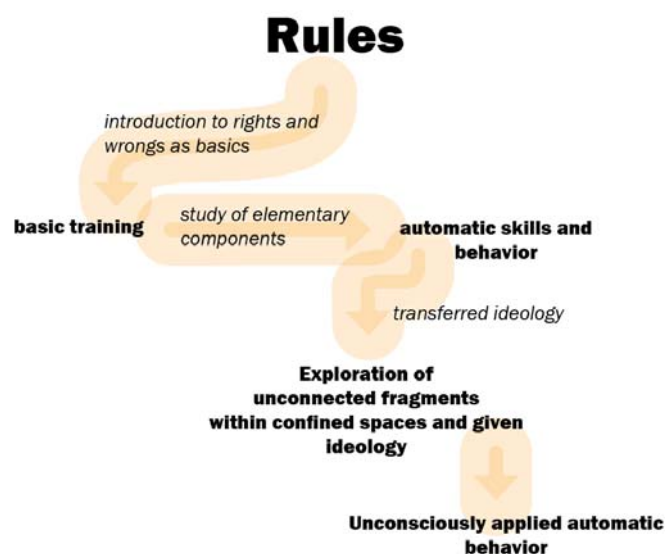

Figure 2. Rules and basics as a pedagogical stance

Thus, when the educator liberates the students from the possibility of making choices and performing critical thinking by drilling skills, design methods, discussions and goals, as unconnected fragments of a whole, the students must rely on the educators to be told what is interesting and important and how the presented problems must be solved by the rules. We question whether John Dewey's main emphasis with the concept of learning by doing is misunderstood with the embracement of basics and automatic skills by many educators. While Dewey emphasized learning from experience, this was not without further reflection after doing or experiencing [12].

If the primary goal is to have students who can acquire skills and knowledge to map, understand and design for complex situations in society, one should think that letting the students in on defining what is important and what rules to follow in a design project would enhance the ability of those students to think critically by themselves. Nonetheless, to prevent automatic behaviour demands a certain autonomy in *how* one plays.

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