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UNIVERSAL DILETTANTES AND BLINKERED SPECIALISTS: HISTORIC MODELS AND FUTURE POTENTIAL OF INTERDISCIPLINARY DESIGN EDUCATION

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ABSTRACT
Interdisciplinarity in design education has been a controversial discussion topic for decades. The discourse on the risks and chances of interdisciplinarity has often been headed by strong terms such as 'blinkered specialists' or 'universal dilettantes'. Today, after the digital revolution, the product and media world changes more rapidly than academic structures and design education. A possible response to emerging areas of expertise and novel job profiles could be the flexibilisation of curricular structures to clear the path for disciplinary mixtures. For the purpose of this discussion, two precursors and one contemporary model of interdisciplinary and integrated design in Germany are to be analysed and described. Based on the hypothesis that pioneering design institutions have always employed holistic, universal, or interdisciplinary approaches, an appeal for more open and flexible interdisciplinary curricula is made. The practicality of novel disciplinary combinations will be demonstrated by a combinatory experiment based on combinations of seven design and design-related disciplines. The results are then examined to verify if these interdisciplinary mixes can lead to promising new professional profiles.

Keywords: Interdisciplinarity, integrated design, Bauhaus, HfG Ulm, KISD, curricular development

1 INTRODUCTION

Openness, delimitation, and intersections towards and with other disciplines have always been contentious issues in design discourse. While it is considered a matter of course that design project teams in practice include multi-disciplinary team members, in design *education* itself interdisciplinary approaches remain quite seldom. One of the rather rare books on that topic is 'Interdisciplinary design in practice'. Although it treats design only in an architectural and building context, some of its arguments can be applied to non-architectural design. According to the authors, traditional customs and practices, and institutional frameworks have hindered the emergence of new approaches functioning instead as protectors of traditional skills maintaining standards through professional training and education programmes. [1] Of course, there is nothing wrong with traditional skills, as long as this insistence on tradition does not impede a vital disciplinary development. Due to 'the overlapping nature of technological change', [2] universities should feel compelled to offer integrated courses that reflect the new reality in industrial practice.

2 HISTORIC MODELS OF HOLISM AND UNIVERSALITY

In this chapter, two historic German design schools are introduced that are predecessors of interdisciplinary approaches. They were both founded in a post war 20th century environment, each of which believed its task to be to rebuild society both materially and mentally: the *Bauhaus* opened in 1919 and the *Hochschule für Gestaltung Ulm* (HfG, Ulm School of Design) in 1953. The Bauhaus developed from an initially romantic, and in a sense esoteric understanding of art towards a more rational and science-influenced approach in its later years. This concept was taken up and developed further by the Ulm School of Design, and became the pivotal point around which the discussion on German design methods of the 1950s and 1960s rotated.

2.1 Bauhaus

The Bauhaus is renowned for integrating a variety of arts into one school and particularly for its combination of art and technology. However, especially in the early years (recalling the 19th century British arts and crafts movement) its exhortations toward integration were at least partially founded in a backward-looking, somewhat romantic notion of holism—the unity of all artistic disciplines and crafts, congregated in architecture to form 'total works of art' (*Gesamtkunstwerk*). [3] The paradigm to which it referred was the 'Bauhütte', the medieval guild of cathedral builders and stonemasons. Such romantic impetus is evidenced by Gropius' heroic language in the 1919 Bauhaus Manifest, the cover of which features a woodcut illustration by Lyonel Feininger: a cathedral (!) surrounded by futuristic structures:

> *[The new building of the future] will combine architecture, sculpture, and painting in a single form, and will one day rise towards the heavens from the hands of a million workers as the crystalline symbol of a new and coming faith.* [4]

The 'medieval cult' [6] and the quasi-religious worship of basic form and basic colour, made way for a more pragmatic and phenomenology-oriented approach when Làszlò Moholy-Nagy took over the foundation course replacing the esoteric-inclined Johannes Itten in 1923. [6] Later, Hannes Mayer, who headed the Dessau Bauhaus between 1928 and 1930, called for an even greater integration of the sciences. His plans (not to be implemented) for the 1930/31 winter foundation course scheduled in the subjects gestalt-psychology, sociology, and socio-economics. Following his dismissal on the grounds of socialist conviction, he criticised the early Bauhaus style:

> *One sat and slept on the coloured geometry of the furniture. One lived in coloured sculptures of houses. The mental complexes of young girls laid on the floor in the shape of carpets. Life was strangled by art everywhere. […]*
> *My aim was design to be justified by science.* [5]

As the director of the New Bauhaus in Chicago, Moholy-Nagy extended his approach for the integrating of technology, art, and science. In his 'intellectual integration' programme, he engaged scholars across several scientific disciplines to deliver guest lectures in his design programme. Charles Morris, for instance, was invited to the programme, where he introduced the discipline of semiotics in a design context for the very first time. In his 1947 publication 'Vision in Motion', Moholy-Nagy emphasised the difference between mere vocational training and education, a distinction taken on later by the Ulm School:

> *'With growing industrial opportunities the entire educational system attained a vocational aspect. Schools lost sight of their best potential quality: universality.'* [7]

2.2 Ulm School of Design

Planned shortly after World War II, the Ulm School was conceived initially as a universal school with a strong focus on politics, with the purpose of creating a new democratic elite [8]. After the Nazis' deification of technical progress and their industrialisation of even war and death, many post-war German intellectuals could only consider technology and culture as incompatible or even antagonistic, thus set their sights on the pre-industrial, pre-Nazi culture of 'Goethe-Schiller-Beethoven'. By contrast, 'the Ulmers […] were attempting to rescue the concept of 'Industriekultur' from Nazi corruption by regrounding it with humanist tradition of social responsibility and moral education' [9]. Consequently an early programme for the Ulm School lists these seven major teaching subjects: Politics, journalism, broadcasting, photography, advertising, industrial design, and city planning. It also promoted a universal approach, that today would be referred to as 'holistic' or 'interdisciplinary':

> *'The time for exclusive professional specialization is over. Politics, science, art, and economics must be viewed in their integral relationship. Education for knowledge must be replaced by education towards unprejudiced universal thinking.'* [10]

Seckendorff ascribes the significance of universal education in the early Ulm School programmes directly to the—at that time very recent—German history:

'The central point of the education programme was 'universality': according to the authors, a specialization merely oriented towards practical needs, lacking universal education, led to the mental desolation of fascism.' [11]

When Max Bill, a graduate of the Dessau Bauhaus, joined the school's planning team, the focus was shifted more and more towards a 'New Bauhaus'—a school of design rather than political and universal education. But the universal and political aspect of the school was not completely abandoned. Political and social sciences were to be taught as subsidiary subjects in a so-called 'cultural integration' programme. In addition, and in distinction to the Bauhaus, the Ulm school also covered verbal communication (see figure 1).

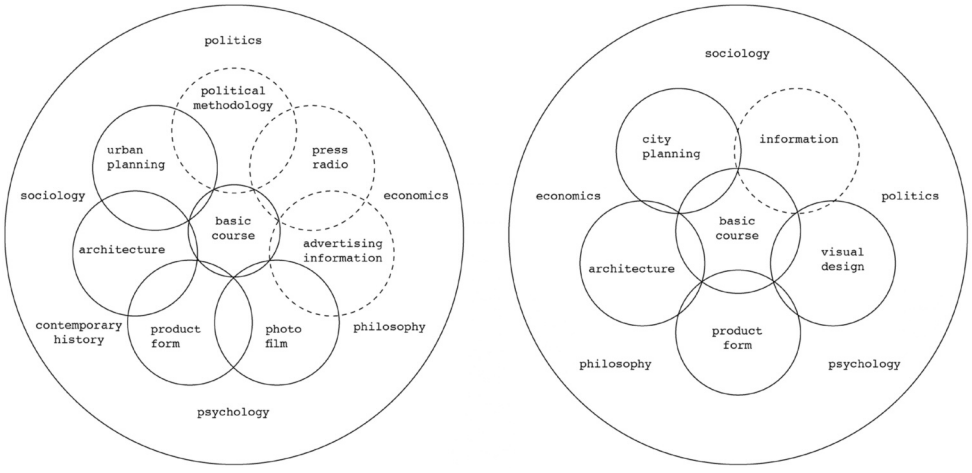

Figure 1. The Ulm School's political and universal approach in early 1950 (left), and with political and media-related areas condensed to 'Information' in 1951 (right)

Its 'Information Department' taught a combination of journalism, linguistics, semiotics, information theory, and cybernetics. In spite of the small student numbers, the department and its staff had a great impact on the school's intellectual climate in general, and influenced the far better acknowledged departments of product design and visual communication. [12] It was the first design school to cover all material and communicative aspects of industrialized life: mass production in the 'Product Design' and 'Industrialized Building' departments, and mass media in the 'Visual Communication' and 'Information' (i.e. verbal communication) departments. [13]. Cooperation between these departments was encouraged and many examples of successful cross-departmental work exist, especially between Visual Communication and Product Design, and Visual Communication and the Information department. [14] However, cooperation between the departments depended on the lecturers' initiative. For students, there was no systematic or structural option to work interdisciplinarily on a regular basis; they had to opt for a department and then study within its given curriculum.

After the privately run Ulm School of Design closed in 1968, the state founded the short-lived 'Institute for Environmental Planning' (IUP) mainly to allow the remaining students to complete their studies. This institute established an interdisciplinary approach by simply not separating into departments. Problem-based projects and working groups were organized around topics such as 'planning theory', 'working space', or 'dense habitation'. [15] However, combined with the zeitgeist tendency to question and discuss everything profoundly, this led to a largely theory-based output of 'reports' with the result that design in practice was effectively depreciated. In stark contrast to the Ulm School of Design's attitude, designing artefacts was now considered irrelevant to societal change. [16]

3 INTERDISCIPLINARY AND INTEGRATED DESIGN TODAY

In the first part of this section the curricular concept of the Köln International School of Design is to be introduced to provide a radical example demonstrating the annulment of disciplinary borders in design. In the second part, a combinatory experiment is presented to demonstrate the potential of interdisciplinary combinations within sub-disciplines of design, and with neighbouring disciplines such as engineering, verbal communication, economy, and computer science.

3.1 Köln International School of Design

The most consequent non-disciplinary approach in design education can be found in the Köln International School of Design (KISD). Founded in 1991 by the Cologne University of Applied Science, it introduced no more than one single study programme simply called 'Design' [17]. In the 1990s, the dispute over this strictly anti-specialist 'Cologne Model' clearly dominated the design education discourse in Germany. [18] The school is organised into twelve 'areas of expertise', which are represented by individual teaching staff. One of the key features of the 'Cologne model of design education' is that students study across all of these areas without any curricular borders between the twelve classic and novel design sub-disciplines (see table 1) [19].

Table 1. The twelve 'areas of expertise' at KISD [19]

Product-related	Communication- and media-related	General and other areas
• Design Concepts	• Audio-Visual Media	• Design History and Theory
• Design for Manufacturing	• Corporate Identity	• Design Management
• Ecology and Design	• Interface Design	• Gender Issues in Design
• Production Technologies	• Typography and Layout	• Service Design

Approximately half of the curricular workload has to be accomplished in short, medium, and long-term projects. The remaining half is distributed between scientific and technical seminars, workshop training, and student work groups (for the school's archive, press, evaluation, website, etc.). However, at KISD it is not only *possible* to combine a large variety of topics, it is in fact *mandatory*. Attending too many projects in a specific area of expertise, and avoiding more than two areas completely, is actively prohibited. The examination regulations require a minimum of ten out of twelve different areas to be covered by projects throughout the study course. This 'compulsive versatility' seems to be contradictory at first glance, but as a typical course of study covers around 13 to 16 projects and it is permitted to cover less favoured areas with short-term projects of only two weeks, this (perhaps still questionable) restriction has but a moderate effect on students' liberty. [19] Increasing the horror from a conservative design scholars' point of view, the concept of foundation training, usually mandatory in the first year, was abandoned completely. Basic skills such as colour and proportion are to be learned within projects and seminars. Moreover, the generally team-oriented projects are open to students across all semesters. The succession of projects and seminars is left to the students to choose, resulting in completely individual curricular programmes. [20] It is this flexibility that allows the school and its students to pick up on emerging topics, trends, and technologies in a far more supple and agile way than in the stiff traditional academic structures.

4 FUTURE POTENTIAL OF INTERDISCIPLINARY APPROACHES

Even if one does not believe in 'holisms' and doubts the necessity of mankind to be educated 'universally': reasonable arguments surface in the case for open, flexible, and interdisciplinary education. One inarguable fact is that academic structures today simply cannot change as fast as today's ever increasing dynamism of technology and economy. It stands to reason that a fixed construction of established disciplines is constantly running the risk of missing the emerging areas of economically needed expertise. One approach that can help minimize the danger of neglecting disciplinary trends is by simply combining existing disciplines.

4.1 A Combinatory Experiment

To test the potential and the assumed innovative power of open and flexible interdisciplinary curricula, a simple combinatory experiment of thought has been carried out, based on the following seven disciplinary domains:

1. Engineering
2. Product Design
3. Interaction and Interface Design
4. Graphic Design
5. Verbal Communication/Journalism
6. Business Management
7. Computer Science

From these domains, 21 unique pairs of two can be combined—and it is surprisingly easy to find fitting and useful labels for each of these combinations (see table 2).

Table 2. Unique combinations of seven subjects

	Engineering	Product Design	Interaction/Interface	Graphic Design	Verbal Communication /Journalism	Business Management	Computer Science
Engineering	Engineering						
Product Design	Product Design Engineering	Product Design					
Graphic Design	Technical Illustrator	Product Graphics, Fair&Exhibition Design, 3D Communication	Interaction/Interface				
Interaction /Interface	Physical Interface Engineering	Convergent Product Design (digital-physical)	Screenbased Reading Design (eBooks, Online Publishing)	Graphic Design			
Verbal Communication /Journalism	Technical Journalism, Technical Editor	Design Journalism	Content Development for Digital Media, Interface Wording	Visual-Verbal Communications	Verbal Communication /Journalism		
Business Management	Business and Engineering, Industrial Engineer	Product Management	eCommerce, Digital&Online Product Management	Visual Strategy, Corporate Design Management	Business Communication Management	Business Management	
Computer Science	Mechatronics, Computational Science and Engineering	Digital Product Design Engineering	Digital Product Design Engineering	Digital Publishing and Production	Digital Technology Editor, Technical Writer	Business Computing, Business Information Systems	Computer Science

Many of these combinations already exist as established bachelor or master study programmes:
Design Engineering, Technical Illustration, Technical Journalism (Technical Editor), Business and Engineering (Industrial Engineer), Computational Science and Engineering, Digital Publishing and Production, Business Communication Management, Business Computing, Business Information Systems.

All other combinations sound promising and realistic. Often they describe professional specializations already in existence: Fair and Exhibition Design/3D Communication, Convergent Product Design (digital-physical), Design Journalism, Product Management, Digital Product Design Engineering, Screen-based Reading Design (eBooks, Online Publishing), Content Development for Digital Media, eCommerce/Digital and Online Product Management, Digital Product Design Engineering, Visual-Verbal Communications, Visual Strategy and Corporate Design Management, Digital Publishing and Production, Digital Technology Editing (Technical Writer).

All these combinations result in practicable professional profiles, some of them probably desperately sought after by innovative businesses in the digitized world. Classic forms of semi-liberal curriculum designs also offer a choice between paths of specialisation. The popular Y-model offers two paths of specialisation after shared basic studies, the T-model offers a broad basis (horizontal) and several electable ensuing paths of specialisation (vertical). These are probably easier to handle in academic everyday life, but just like completely monolithic curricula, they are prefabricated in a fixed structure, based on the knowledge, assessments, and projections at the time of planning. Hence, they lack the facility to react quickly to emerging new fields.

5 CONCLUSION

There are many examples of scientific disciplines that have been hatched from the egg of traditional disciplines: at its outset, computer science was a multi-disciplinary mixture of mathematics, philosophical logic, and electrical engineering. Bionics is simply a combination of biology and

engineering. Last but not least: design has its ancestors in arts, crafts, technology, and social science—for decades, it has been a hybrid domain. The concern that interdisciplinary combinations of existing areas of expertise lead to universal dilettantes without any proper competence in anything appears to be unfounded. On the contrary, interdisciplinary qualifications actually meet the demands of today's pioneering professional practices. Hence, interdisciplinarity does make sense, and is surely appropriate to the current economic and technological dynamics that call for a flexible and pragmatic view on a volatile and changing job market. Interdisciplinarity, it has been shown, does not lead to a lack of competence—but simply shifts competencies to different domains. Even if the controversy still abounds today, the conclusion must surely be: give the students free choice.

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