

EDUCATING THE CRITICAL URBAN PLANNER AND DESIGNER: A DIDACTICAL EXPERIENCE IN AN AREA OF PRACTICE

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Abstract

The stretched scope of urbanism, with its large range of inputs drawn from various disciplines, seems to create confusion about the nature and the form of an education in urbanism at university level. We verify the existence of several communities of practice who value practice and theory differently. Assessing the work of students becomes an arduous task, because different communities of practice value different things and seem to see little relevance in aspects that do not comply with their own views. In this way, practitioners seem to see less value in textual expression, while academics seem to struggle to value a practice-oriented education and spatial strategies outside a structured discourse that grounds the design. This paper presents an experience in the MSc program in urbanism where we believe the desired academic standards are attained. It describes on the one hand the aspirations we have for the urbanism program with respect to academic standards, and on the other hand the concrete outcomes of the methodological and R&D project programs. This paper describes how the education program tackles the relationship between research, planning and design by acknowledging that *there are* different value systems in the different fields of urbanism, and the way we have dealt with this issue in our MSc program.

Keywords - Masters program, Research and Practice, Didactic experience, Planning and Design, Urbanism.

1 INTRODUCTION

In the Department of Urbanism of the Faculty of Architecture of the TU Delft, the Netherlands, both the academic staff and the students acknowledge the importance of upholding high academic standards in the educational program. However, because Urbanism is not a **pure** discipline, but one that draws inputs from a myriad of other disciplines, i.e. the social sciences, the physical sciences, and very particularly, design practice, a debate arises about the nature of the education offered.

This paper presents an experience in the MSc program in Urbanism where we believe high academic standards are attained. The MSc program offers a specific methodological program during the whole MSc program, which is closely connected to the project-based education program, in the form of Research and Design (R&D) Studios.

The **aim** of this paper is to describe on the one hand the aspirations we have for the Urbanism program with respect to those academic standards, and on the other hand the concrete outcomes of the methodological and R&D project program. We describe the academic skills students develop and the products they deliver. Therefore, this paper tackles (i) the relationship between research, planning and design by acknowledging that there are different value systems in the different fields of Urbanism, and (ii) the way we dealt with this fact in our MSc program.

In the introduction, we describe the nature of the discipline today and present the structure of the course in the TU Delft. In section two, the problem of different worldviews in different communities of practice is explained and the necessity of academicisation of a predominantly practical area is introduced. A response to this necessity in the form of research by design is introduced and its limitations and boundaries discussed. In section three we describe the actions taken to answer the necessity of academicisation and discuss the solutions we found to promote awareness and appreciation of the different research paradigms in operation in the department of urbanism of the TU Delft. We briefly discuss responses to the program implemented and the challenges to be tackled. In section four we discuss the next steps in trying to achieve a functional relationship between a practical and professional education and the requirements of an academic environment.

1.1 The field of Urbanism

Urbanism is a highly relevant discipline today. Because the world is urbanizing quickly, there is a high demand for professionals who can deal with the planning and design of cities, taking into account a multitude of problems that are interconnected. Because of the increasing complexity of the urban phenomenon, urbanism has evolved into an inter-disciplinary field of studies. It draws inputs from a variety of disciplines in the physical sciences, the social and behavioural sciences and the applied sciences. The nature of urbanism is thus understood at the TU Delft:

“The world faces unprecedented challenges from urban development. The anticipated doubling of the world’s population between 2000 and 2030 will predominantly take place in cities. In developing countries this will be mostly experienced through the explosive growth of ‘megacities’. In developed countries there is likely to be polarisation of urban development with parallel growth and shrinkage of cities, urban sprawl into accessible rural areas, and economic dispersion. Understanding and managing these processes is critical for environmental sustainability, social cohesion and economic prosperity. Urban growth threatens critical environmental capital and may contribute to climate change, air pollution, water scarcity and the depletion of natural resources. The pattern of urban development can create greater disparities in communities’ access to social and economic opportunities, damage local culture and identity, and fragment social and family structures.

These threats focus the attention of academics and practitioners in urbanism onto the relations between patterns of urban development, social, economic and environmental conditions, and the means by which governments and communities can influence change. In the context of the overriding goal of more sustainable development there is a need for a better understanding of these relationships and of the impacts of urbanisation on water-management, accessibility and mobility, land and air quality, the use of natural resources, and the urban spatial conditions required for social cohesion and economic competitiveness.

The great challenges of rapid urbanisation are creating worldwide demand for the education of academics and practitioners in the field of urbanism.” [1].

This trans-disciplinary approach puts very different research and study paradigms side-by-side, creating some uncertainty about the nature of the education offered. Diverse communities of practice co-exist in the Department of Urbanism, each with their own worldviews and different research paradigms. We have identified a dysfunctional relationship between the actions being taken (the methodological question) and the beliefs being claimed (the ontological and epistemological questions). The nature of the questions being asked by different research communities within urbanism seems to vary considerably. This is not a problem in itself. However, when differences are not made explicit, there is room for misunderstanding and dissatisfaction over research and study actions that might seem out of context for a particular audience.

One of the points of discontent concerns the apparent opposition between a professional education and an academic education. In Delft, this opposition can be partly explained by the history of how the department of urbanism originated. Eleven different chairs currently compose the Department of Urbanism, each lead by a full professor who conducts a specific line of research. The chairs are Urban Composition, Urban Design, Metropolitan and Regional Design, Spatial Planning and strategy, Landscape Architecture, Technical ecology and methodology, Environmental Design, Cultural History and Design. The chairs of Urban

Design and Landscape Architecture originated from architectural design, whereas the chair of Spatial Planning has its origins in a chair named Urban Research ('Stedebouwkundig Onderzoek') in the 1970-80's. Different worldviews were present at the very beginning of the department organisation.

1.2 The Urbanism MSc program

The 2-year (120ects) Urbanism MSc program at the Delft University of Technology addresses the urban question(s) from the point of view of urban and regional design, landscape architecture and spatial planning and strategy. One ect (European credit transfer system) is the equivalent to 28 hours of study. The didactic fundament of the program (80ects) consists of a Research and Design project education (Fig. 1): the R&D studios and the Graduation Lab. A second (relatively) big part is the 9ects Methodology program: 5ects in MSc2 and 4ects in MSc3. A third part is the 8ects Theory (and History) program: 4ects in MSc1 and 4ects in MSc3. The program is completed with courses focusing on technology and practice in first Master's year, and a graduation project start up course in MSc3.

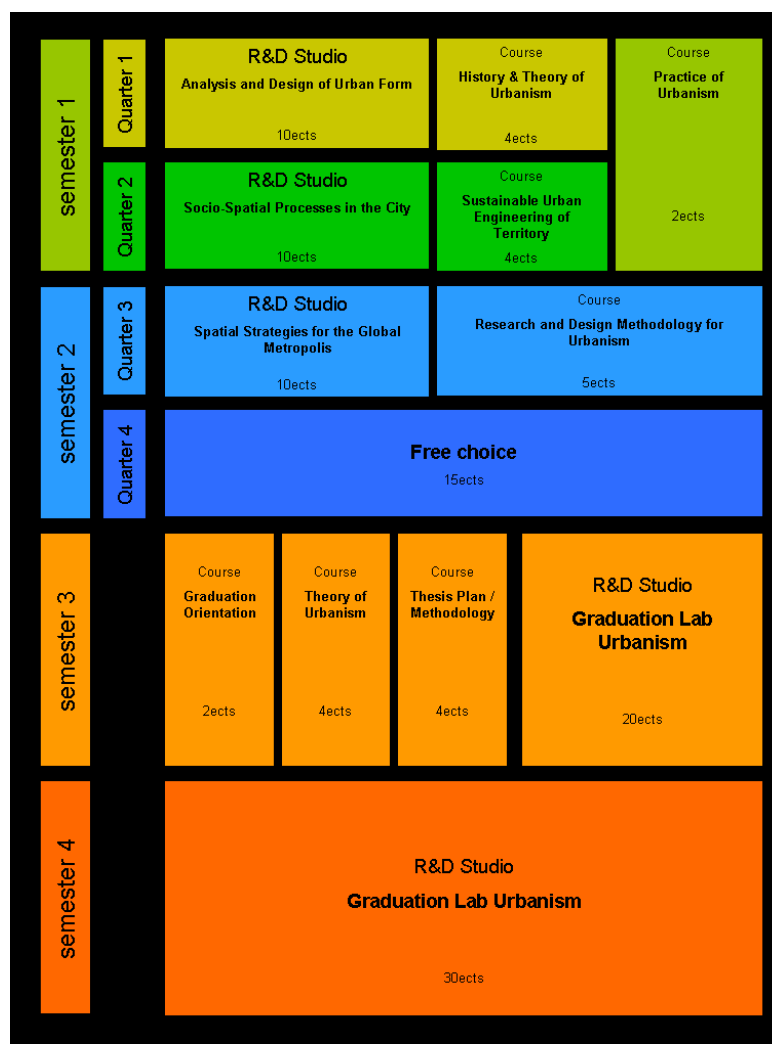


Figure 1 Overview Delft MSc Urbanism program

1.3 The problem of an education in Urbanism

When developing an MSc education program, a relevant question to be answered is: 'What kind of professional qualifications must be offered in order to fulfil its goals and achieve high professional and academic standards?' On close inspection, we learn that the Department of

Urbanism of the TU Delft offers a variety of qualifications in different areas that are relevant to the activity of spatial design and planning: urban design, landscape architecture, spatial planning and strategy, metropolitan and regional design, environmental design, technical ecology, cultural history, design & politics, to cite but a few [2].

Secondly, should an education in Urbanism dwell on traditional ways of study or should it incorporate elements of practice [3]? When it does so, how to evaluate the results? There is nothing new in offering an education with strong elements of practice: practice is an essential element in fields as varied as medicine, the performing arts and even teaching. In all these fields, strong communities of practice have built specific teaching tools and assessment criteria over the years. These communities of practice have established common grounds to educate practitioners and the level of dissatisfaction about a practical education in those areas seems to be low [3].

However, the stretched scope of urbanism, with its large range of inputs drawn from very different disciplines, seems to create confusion. We verify the existence of several communities of practice who value practice and theory differently. Assessing the work of students is an arduous task, because different communities of practice value different things and seem to see little value in aspects that do not comply with their own views. In this way, practitioners (designers) seem to see little value in textual expression, while academics (with whom planners seem to identify themselves) seem to struggle to value design outside a structured discourse that grounds the design and relates to an academic debate.

2 ACADEMIC STANDARDS OF MSC EDUCATION IN NON-TRADITIONAL FIELDS

2.1 Worldviews

Different communities of practice often have very different worldviews. A worldview is basically a set of beliefs that one holds about the nature of the world and one's place in it [3]. In philosophy of science, a worldview determines how one sees the world and the questions one asks about this world. In short, different worldviews determine different research questions and the activities one would undertake as a researcher to answer them. These different activities form different paradigms of inquiry.

We believe that the goal of articulating different paradigms of inquiry would be more easily met if meaningful relationships between the various disciplines that are part of an education in urbanism were analysed within this framework, making different research paradigms explicit.

The 'practical' (or applied) approach would normally have, in a technical university, affiliations with the paradigms in operation in the physical sciences (especially engineering, in the Dutch tradition). However, because the understanding of the nature of the problem has changed in the last few decades (namely, the spatial organisation of human activity over space), a purely technical approach based on the physical sciences is no longer possible or desirable.

Other research paradigms have been incorporated in order to comply with the complexity of the problem, constituting a network of knowledge that is permanently changing. The 'worldview' of Urbanism is multiple and in permanent transformation.

When the emphasis is put on design practice, elements of creativity, spontaneity and craftsmanship are valued. These elements are valued and sought after by students and teachers alike. When the emphasis is on research, Urbanism generally dialogues with disciplines that have functional research paradigms like human geography, economy, law, psychology and sociology.

We take the position that an emphasis on research should not exclude design practice because of the mutually complementary nature of drawing/image and text in urbanism. In other words, designs can communicate certain things that only the most skilled of writers could accomplish, and even then the time and effort employed might not make textual explanation the preferred tool to describe spatial relationships. On the other hand, text can convey messages that the design alone cannot convey. It is common practice in an education in urbanism to say, "designs do not talk by themselves" and have to be explained.

2.2 The necessity of academicisation

One of the conflicts between practice and academic research in the university arises from the necessity to academicise. The necessity of academicisation arises, in our context, from the perception that a practical education on design skills alone is insufficient to deal with the broader task at hand: understanding the context, the role and wishes of stakeholders and the socio-political, economy and technological developments that ultimately produce 'real world' space. But this perception stems from a particular understanding of urbanism at TU Delft.

Urbanism, as it is taught at the TU Delft, is about design craftsmanship, but also about communication, reflection and negotiation *through* design. At TU Delft, we believe that the variety of stakeholders and complexity of procedures involved in the planning and design process demands a different attitude towards educating future urban planners and designers. Not the least, one has to deal with issues of professional ethic, which involve social awareness and professional responsibility.

Different from architecture, where the assignment is generally given by a client, with clear spatial, functional and financial parameters, in urbanism the urban planner and designer must build up his or her own assignment. In fact, a large part of the activity of urban designer and planner is related to the definition of the problem to be tackled by a design or a strategy. Rather than merely being solution-oriented, urbanism seeks to understand what the problem is in order to ask the correct questions. Once these questions are asked, urban planners and designers might use a multitude of tools and actions to answer those questions. Design is one of the main tools at our disposal. However, as said, different communities of practice understand the role of design differently.

None withstanding, we identify a dysfunctional relationship between the claims and actions of our particular community, which is reflected in the courses and the evaluation of students' final works. This dysfunctional relationship occurs because various members of our specific community claim that urbanism, as a discipline related to the physical sciences, and by its own nature solution oriented, must deal with a research paradigm that is related to objective truth, where the knowable object (the external world) is independent of the knowing subject. Despite the fact that this position has been extensively criticised in philosophy as a kind of naïve realism, the positivist faith in technical solutions is still prevalent in the discourse of disciplines related to the physical sciences. This is particularly true for the academic environment of a technical university of the Dutch-German tradition.

The research actions derived from the belief in objective truth must be anchored on accurate observation and measurement of the world and on empirical and quantitative research. However, in design practice, other values operate. Creativity, inventiveness, originality come into play. Design practice is, to many effects, a highly subjective activity. Its validation is built upon peer appreciation, rather than truly objective (or technical) parameters. There are few objective parameters and technical tools to assess urban design before execution, apart from the parameters built on experience and practice, hence the dysfunctional relationship between claims and actions of the community of practice under scrutiny.

The need of objective assessment criteria requires that design decisions be explained within a logical discourse that supports those decisions. A craftily logic discourse is highly valued. However, there seems to be two ways in which this discourse can be shaped and justified: either through 'traditional' research and accurate observation or through rhetoric. In the latter, designs are explained and justified through persuasive language and compelling visual representation, rather than through accurate observation of socio-economic processes. Naturally, elements of rhetoric are found even in the most disinterested research. This is why explaining one's method to arrive at certain conclusions has become an essential part of the education, as we shall describe further.

2.3 Different views on research by design

The debate described above has in turn produced specific discourses that claim that it is possible to do 'research by design'. Research by design is not an original approach on

research in an area of design practice. It exists under various names in several research communities [4]. Extensive debate has taken place in TU Delft about the definition, the nature and the operationalisation of research by design.

One of the most prevalent views refers to the classification of types of design-related study put forward by De Jong and Van der Voordt [5] (Fig. 2):

		OBJECT	
		<i>Determined</i>	<i>Variable</i>
CONTEXT	<i>Determined</i>	Design research	Design study
	<i>Variable</i>	Typological research	Study by design

Figure 2 Type of design related study defined by De Jong and Van der Voordt [5]

In a University of Technology, designs are made not only intuitively, but based upon study (design study) and documented, examined and evaluated (design research). Design research concerns determined objects within determined contexts. 'Study by design', in a broad sense, varies either the object (design study) or the context (typological research) or even both (study by design). The terms from this matrix may be explained as follows:

Design research

Design research describes and analyses existing designs with a known context, often in the form of comparative study. For that reason it is evaluating study ex post. Not only their function is involved, but also their form, structure and the way they were made, the design tools employed in each stage and the way in which they were applied: the making proper.

Typological research

Whenever the identical architectural form, structure, technique, function or concept is recognised in different contexts the notion of a 'type' is involved. A type only becomes a consistent model if it has been elaborated for evaluation by design in a context. A type is a design tool, not yet a model. The study of such types, their use in the making of designs (a special kind of models) is called typological research.

Design study

Making a design in a relatively well-known context of potential users, investors, available techniques, building materials, political, ecological and spatial restrictions, entails many stages of a type of study termed in this book 'design study'. If, in the case of grand projects, parts it are sub-contracted, the parlance is 'study for the designing' or 'research driven design'.

Study by design

Characteristic for this type of study is generating knowledge and understanding by studying the effects of actively and systematically varying of both design solutions and their context [5]

This particular take on design related studies has been an important milestone in the discussion on research by design at TU Delft. However, the actions that constitute a research by design activity by students and professionals remain rather blurry and the concept is elusive for many outside our particular community. This makes it difficult to incorporate consistent views on the research actions related to research by design across different groups in the department of urbanism.

2.4 Terminology

A problem in terminology ought to be clarified before we can proceed with the discussion. The Masters course in spatial planning and design at TU Delft is delivered in English by the Department of Urbanism, in order to cope with the influx of international students to the university in the last decade. As a consequence, much of the documentation is written in English.

In the English language, 'Urbanism' is not synonymous with spatial planning and design. The former is used in English as referring to processes of urbanisation, or to city life, rather than the study of these processes and of the body of knowledge constituting disciplines related to spatial planning and urban design. In the Dutch tradition, spatial planning constitutes a different discipline altogether ('Planologie'), exclusively dedicated to understanding socio-economic trends in space and spatial planning policies.

'Urbanism', in the case of TU Delft, is a rough translation of the Dutch expression 'Stedenbouw' (literally, 'the construction of cities'), where the design of the built environment plays a central role. It is much related to the French expression 'urbanisme'. In fact, the Dutch tradition makes little distinction between spatial plan and the design of the built environment, as planning and designing must result in visual representations of the built environment. The emergence of 'research by design' in this context is a response to the tendency to academicise knowledge that is generated through an eminently practical tradition related to the design activity [6]. Despite the claim that the course offers a research by design track, the education outputs indicate either a prominence of research or a dual track of research AND design.

2.5 Relevant questions for assessment

This brings us to a number of relevant considerations. First, what is the actual contribution of design for an education in urbanism? If design wants to claim a special role in the education, it needs to clarify how it contributes to the outputs in the course and how it is part of a sound methodological trajectory. Basic requirements would have to be agreed upon. This contribution could be clarified by asking the question: What would you **not** be able to communicate if you did not **design**? Secondly, what is the contribution of written research for an education in urbanism? What -again- would you **not** be able to communicate if you did not **write**?

In our education, we aim to answer the following questions, which we discuss in the next section:

- How to **conciliate** a practical/professional education in urban design and planning with the requirements of academia?
- How to make students aware of the existing **body of knowledge** in the discipline in respect to their own research project?
- How can **different research methods** stemming from **different worldviews** in Urbanism be made explicit to students?

3 DELFT MSC URBANISM'S ACADEMIC STANDARDS

3.1 Tackling the relationship between academic research in an area of practice

In order to **conciliate** a practical education in urbanism with the requirements of academia, we have developed a program that gives room to both the practical approach (project oriented studios) and raise the question of the academic value of students' production (Theory and Methodology courses). The connection between theory and the practical assignments is constantly highlighted. We have developed a threefold approach to this question.

First, there are 'practical' studios¹ where students are asked to develop design proposals and to discuss theoretical approaches that support these assignments. Both the societal and the academic relevance need to be made explicit and students are asked to put their designs within the framework of an academic debate.

Secondly, four courses² instruct students in academic skills and parameters. These courses provide students with the skills and tools to operate in an academic environment and aim to develop their critical thinking skills as well as their skills to communicate results in academic terms. Subjects taught in these courses refer to academic writing skills, research methods (both traditional and non-traditional), and the development of the discipline of urbanism, with an emphasis on the history of urbanism in the Netherlands. While developing their academic skills and values, students are asked to explicitly present the significance and the consequences of this structured academic debate to their design practice.

Thirdly, one specific course (*Research and Design Methodology for Urbanism*) tackles the **relationship between research and design** or between theory and practice. The specific aim of this course is to promote a dialogue between different qualifications offered by the department of Urbanism of the TU Delft, by proposing a dialogue between different worldviews, with their different values, requirements and expectations. By acknowledging that there are different value systems in different fields of urbanism, we can start to address the specific requirements of each community. The objectives of this course towards the aims are:

1. To clarify what are accepted academic research practices in each community
2. To identify what are alternative research practices in fields of design practice
3. To define common and/or shared goals and evaluation criteria for students who are developing studies in urbanism
4. To broaden the spectrum of methods and approaches used to analyze and intervene in inhabited space.

In order to make students aware of the existing **body of knowledge** in the discipline, in the first year of the Masters program students are given (i) an overview on the development of the field of urbanism (*History and Theory of Urbanism*), (ii) a course on existing technical parameters to design and to assess designs (*Sustainable Urban Engineering of Territory*) and (iii) the state of the art of the professional activities and projects in The Netherlands (*Practice of Urbanism*). In the second year, we challenge students to develop their own theoretical and methodological framework to support their graduation projects (*Theory of Urbanism* and *Thesis Plan*).

Research groups within the department of urbanism operate with implicit assumptions about space and how to understand it. The **differences between research methods** stemming from different worldviews in Urbanism are made explicit in the Q3 Methodology course through a structured review of the methods that are presented in different study tracks offered to students in the different design studio quarters. The course enables students to develop a critical reflection on different research and design paradigms and assessment criteria.

3.2 The response so far

The program we have just described was formulated in 2008 and introduced in September 2009. The former program had come under internal criticism [7]. Among other aspects students and staff missed an explicit dialogue about the different requirements, expectations, values, and limitations of each sub-discipline.

¹ Q1 10ects *Analysis and Design of Urban Form*; Q2 10ects *Socio-Spatial Processes in the City*; Q3 10ects *Spatial Strategies for the Global Metropolis*; MSc3/4 20+30ects *Graduation Lab Urbanism*

² Q1 4ects *History and Theory of Urbanism*; Q3 5ects *Research and Design Methodology for Urbanism*; MSc3 4ects *Theory of Urbanism*; MSc3 4ects *Thesis Plan / Methodology*

Up to now, we have noticed that students with no previous academic training find it difficult to fulfil expectations related to formal academic requirements. Our students have a great variety of backgrounds. Approximately 50% of students in the department are foreign students (predominantly from Eastern Asia, Eastern Europe and Latin America), with various degrees of proficiency in English and different degrees of familiarity with accepted academic parameters. Most students have a bachelor degree in architecture or some related discipline. Dutch students coming from the bachelor in architecture (25%) are much more homogeneous. But although the Delft Architecture BSc program offers an introductory course on Philosophy of Science, there is not an explicit dialogue between academic activity and the practical assignments, i.e. design projects. The remaining 25% of students originate from the Dutch professional schools (*Hogere Beroepsopleiding*) and have had an eminently professional education.

Thresholds met

The expectations from our students concerning an education in urbanism are mostly connected to practical professional skills. According to a survey conducted among 50 MSc1 students (Sept 2009), they expect to learn professional skills related to drawing and the use of technical tools to map, model and design spatial interventions. However, approximately half of the students also mention critical thinking as one of the main skills they wish to develop during the course.

The **role models** for urban planners and designers are all from the practice and the Dutch educational system promotes a higher appreciation of professionals. This makes it more difficult to promote the importance of academic research and academic values.

The worldview of architects and urban designers privileges visual representation over words. The value of sound argumentation and reasoning is secondary in relation to the rhetoric of design, since design is able to convey information and ideas in an expressive way. Design can convey qualities and ideas that words cannot. Therefore, one of the greatest challenges is to achieve good academic writing skills, which include relatively simple operations, such as referencing, applying citation conventions and avoiding plagiarism. It also involves complex skills, like building logical arguments and developing skills of critical assessment.

The formulation of sound research questions occupies a large amount of time and energy by students and staff. This is a crucial aspect of the task at hand, because formulating relevant and operational research questions will ground all the subsequent steps and research actions. From the research question, the methods to answer that research question are derived and explained in relation to what we call 'research actions' (very specific actions one takes when carrying out a research project). In this way, the role of design within the research process (and not as a final product or a result of the research project) can be made explicit.

In general terms, we notice a lack of adequate appreciation of having a systematic approach to research and design. In other words, students seem to be unaware of the advantages of having a set of clear methods, which would make their work and research and study process more transparent, and thus criticisable and more easily assessed.

Cultural differences are also very evident when it comes to the appreciation of academic requirements and rules [8]. We are still learning how to deal with such diversity in an effective way.

4 CONCLUSION: HOW TO CONTINUE?

The steps we have taken contribute to raise awareness among staff and students about the nature of our education, to clarify and make explicit what the different worldviews are and how they contribute for the education. The aim is to make students aware of their trajectory in the university as part of a coherent but enormously varied landscape of ideas and values.

There is a great variety in worldviews and different ways to address the urban question. In fact, our main task so far has been to raise the awareness that there are very different

questions being asked by different research groups, all of them relevant. The challenge seems to be how to put them in a coherent whole for students and staff alike.

We have yet to find ways to develop students critical package of skills, values, tools and knowledge in a very short time, and dealing with very different cultural and educational backgrounds. We cannot introduce an unlimited number of approaches: we must select the more relevant approaches to build up a relevant whole for students of urbanism. Therefore, as an example, the compulsory first-year R&D studio program was carefully put together. In the first year, students have the following program:

- 3 different **themes / urban questions developed by three different groups**; form and composition of the city (Q1), urban transformation and regeneration (Q2), regional and metropolitan planning and design (Q3);
- 3 different **teams of disciplines** (with different worldviews) coordinate and teach: urban composition and landscape architecture (Q1), urban design and spatial planning (Q2), regional design and strategic planning (Q3);
- 3 different **scales**: the city (Q1), the district (Q2), the region (Q3);
- 3 different **project approaches**: intuitive design (Q1), research driven design (Q2), study by design (Q3)

More evaluation results are needed -from students, teaching staff, and coordinating staff- to find out if the **critical** skills, tools, knowledge and values have been indeed carefully addressed (as intended) in these R&D studios.

We explicitly encourage debate and critical thinking among students. We provide students with the opportunity and confidence to participate and be critical. Part of our system of values is that the debate of ideas and knowledge is highly valued. Constructive and respectful debate is welcome. It is a condition for a rich academic environment. Students are already encouraged to present and discuss their work intensively, but we need to extend this attitude to all components of the education.

In short, our main task concerns finding a way to make students develop values, tools, knowledge and skills into a meaningful whole, where research and practice are equally valued and where each contributes for a solid education in urbanism. In order to do so, we are developing several instruments to map and make different worldviews explicit. We believe that the steps and actions involved in design related study must be clearly described and exemplified by our staff. Feedback from students and staff is sought in explicit and implicit ways, through practical exercises and questionnaires.

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