

Chapter 3

Learning Outcomes and Competences Related to the Research in Architecture

Research is one of the main pillars of the European Higher Education Area. Research is not only developed into the framework of postgraduate studies but increasingly becomes, through different forms and practices, part of the undergraduate curricula. Which are the desired learning outcomes and competences including skills, abilities, knowledge and content of the profile of the academic researcher in architecture? What is this academic profile? How can the above competences be 'translated' into contents of the undergraduate curriculum (topics to be covered) and into structure of this curriculum (modules and credits)? What are the strategies and objectives for such a translation? Which priorities, which ethics of the learning outcome? Which approaches to teaching and learning are appropriate to ensure those learning outcomes and competences (types of teaching methods, techniques and formats)? Which methods of assessment can we apply to evaluate the achievement of those competences (when required, which kind of teaching material must be produced)? Which educational units and activities must be created to achieve the defined learning outcomes?

Interventions of Session 3

Panel

Lorraine Farrelly, Portsmouth, United Kingdom

Elzbieta Leszczynska Trocka, Wroclaw, Poland

Rainer Mahlamaki, Oulu, Finland

Selahattin Önür, Ankara, Turkey

Françoise Schatz, Nancy, France

Leen Van Duin, Delft, The Netherlands

Chair

Kees Doevendans, Eindhoven, The Netherlands

Questions for Session 3: "Learning Outcomes and Competences Related to the Research in Architecture"

Question 1 (5 minutes)

Does your school claim to educate researchers? If yes, in what way does your new school curriculum do this?

Question 2 (5 minutes)

What are the five fundamental competences and skills that your new school curriculum ensures to your graduate in order to enable them to be researchers?

For your help we propose to you to use the following (open ended) list

1. Awareness of the ongoing nature of architectural research and debate
2. Critical awareness of the relationship between current architectural discourse and practice and the architecture of the past
3. Awareness of the highest standards of achievement in architecture, in design, in built work and in scholarship
4. Awareness of the moral and ethical issues of investigation and the need for professional codes of conduct in research (eg. appropriate acknowledgements of contributions, etc.)
5. Ability to define research topics which will contribute to knowledge and debate within architecture
6. Ability to formulate research questions
7. Ability to identify and use paradigms, theories concepts and methods of enquiry appropriate to the discipline and the topic of enquiry
8. Ability to identify and use appropriately sources of relevant information and to identify and use relevant retrieval tools (bibliographical sources, archival inventories, etc.)
9. Ability to prepare, process, interpret and present data using appropriate qualitative and quantitative techniques
10. Ability to work with a high degree of autonomy (eg. Accept responsibility for research project planning)
11. Ability to communicate appropriately in written, oral and graphic forms
12. Awareness of and ability to use appropriate tools of other human and physical sciences (eg. Literary criticism, art history, philosophy, studies in constructional analysis, etc.)
13. Ability to use IT and Internet resources (statistical, cartographical methods, database creation, etc.)
14. Ability to collect and integrate several lines of evidence to formulate and test hypotheses
15. Ability to plan, conduct and report on investigations

16. Ability to write in one's own language, using correctly the various types of architectural literature
17. Ability to reference sources accurately and appropriately
18. Ability to evaluate evidence and draw appropriate conclusions
19. Other...

Question 3

How does your new school curriculum ensure these competences and skills in terms of:

- Related subject areas (what subject areas can ensure these five characteristics of the profile of researcher)
- Positioning, timing and weight in the structure of the curriculum (in which years of studies are the five characteristics ensured, in what relation with other subjects, and what is the importance of these subject related areas compared to other subjects in the overall school curriculum).

Schools' Engagement in research

Kees DOEVENDANS

Technical University of Eindhoven, Faculty of Architecture, Eindhoven, The Netherlands

Introduction

The questionnaire of which I will present you the results was not focused on competences and did not include a list of competences, but on school engagement in research. Then we will have contributions from the members of the panel who were asked to reflect upon and to answer the questions that are on the paper in your package. Contributions will be made by the University of Technology of Delft, the School of Architecture of Nancy, the School of Architecture of Portsmouth and the School of Architecture of Oulu, and also from the Universities of Wroclaw, Poland and Ankara, Turkey, so you see we cover quite a geographical spread. These people will be asked to speak for about 5 -10 minutes on the questions that are on the paper, and unlike yesterday we want them to deal with all three questions in one intervention and to conclude with some kind of statement. Then we will begin the debate, which we are calling a workshop to imply that you are expected to do some work. After that we will try to see whether we can make a first selection of competences through a process of hand-raising and voting, which I hope will work. At the end I hope that Loughlin will assist me in doing the counting and then, hopefully, we will give you the results of the jury, and conclude the session. So this is what we have in mind, and I hope it works.

I will begin with an introduction to this session. In Hania 2003, the curriculum group report concluded that "the Meeting of Heads of Schools is not yet in a position to engage in fruitful discussion about the place of research in the architectural curriculum", and that "at present we are simply aware of the variety of situations regarding research and the fact that a variety of research paradigms are being utilized". Then, at the meeting in Antwerp in February, the main object of the working group on research was to clarify what we mean by research. This resulted in the questionnaire I showed you, which has been circulated. We had 26 responses to this questionnaire, and in a few minutes I will give you the results of this first set of answers, which will perhaps give you a rough idea of what we mean by research. The other questionnaire that was drawn up, the one that Constantin showed you, was focused on competences; it too has been sent around, and we are waiting for your answers. So this is the next stage, and we hope that this can be finalized very soon.

Speaking about research, a lot of us complain that it is difficult to do research in architecture, but James Horan spoke about all the events of the EAAE and there are so many conferences that I think we are entitled to be very optimistic about it. There was, for instance, the European Conference on Research in Architecture and Urban Design, in May, in Marseille, with 250 participants from 23 countries. I read in the newsheet that the conference dealt with the strength and the quality of architectural research and debate, but there was also an observation from the United States, that the American model is trying to drive through a hierarchy between a super-academic doctorate and a sub-professional doctorate or design doctorate. The expectation is that there will be

a unique PhD that can include design, creating something between a super-academic doctorate and a sub-professional doctorate. Then there was the conference in Dublin, in June, entitled *Between Research and Practice*, which attracted over 100 participants who presented 40 review papers. In October, there will be the conference in Delft on *The European City*, which also includes a unit on research by design. In April, there is the conference *The Unthinkable Doctorate*, and one of the questions is whether the PhD design in architecture is possible. In May, in Leuven, there will be a very theoretical conference on public space, organized by Leuven in co-operation with Eindhoven. So there are many, many scientific events. And then I was asked if I could also direct you towards a new possibility, that of becoming a scientific publisher. There is to be a new magazine and Urs Hirschberg already told us something about it very briefly. This is obviously a very good magazine.

One of the items on the agenda for this session and this meeting is learning outcomes; and I think that in the case of research we have to ask ourselves who we want to teach. For in research we do not only teach students, whether graduates or undergraduates – although perhaps in teaching research we can limit ourselves to graduate students. Research should also lead to learning outcomes for ourselves, for staff members, and also for society, because research has to lead to new knowledge. So I think it is important in the case of research to distinguish between at least three target groups: graduate students, staff members and researchers, and also society in general, including the profession.

This point was also made by the speaker from the Thematic Networks, who stressed that society had to be included in all networks. We have to bear in mind, then, that research should also lead to learning outcomes for society. And in this last case, for instance, we might ask what we can contribute to the knowledge-based society and to a society with a greying population. This also means that in the case of research the learning outcomes will have different forms: competences for students, but also new knowledge insights for society and for researchers. And that also means that in the case of research scientific output, such as articles published in your peer review magazine, has to be considered as a learning outcome.

One final thing, before we start the presentations on the results of the research questionnaire, is that in the first keynote speech Professor Anderson made what seems to me a very interesting distinction between the profession and the discipline. The relation between the profession and discipline is a very difficult subject; we generally associate the profession with practice, but it also has a scientific side. This distinction leads, respectively, to two types of output: on the one hand, diagrams and models, and on the other, papers and articles. This is a distinction, I think, that could be of some importance in the areas of research and curriculum.

Results of Questionnaire on School Engagement in research

All schools are doing research

A first outcome is, that all schools indicate that research is carried out in their schools. This means, even the smaller schools are able to do research, and combine education and research.

Who carries out the research?

Schools indicate that most of the research is carried out by staff and students together (44.5%)

We do not exactly know what this means, for the students are in the questionnaire are not distinguished in bachelor, master of (post-)doctoral-students.

37% of the research is carried out by staff members only.

18,5 % of the research is carried out by students only. Also in this case, we do not know which students are meant. It is assumable that only graduate-students are meant.

Types of research

Four categories were distinguished:

- Investigation for studio projects leading to a design outcome
- Research by design leading to optimal solutions
- Supervised structured enquiry leading to a thesis of dissertation
- Investigation commissioned by sponsor

Although all categories have almost the same score (resp. 21%, 20 %, 32 %, 27 %), some remarks can be made:

The main category of research has a thesis of dissertation as its outcome. This could refer to scientific research.

'Investigations leading to a design outcome', and 'Research by design leading to optimal solutions' make 41 % of the total research. Probably we have to distinguish this from the 'scientific research', and consider this to be a kind of practical design research, 'applied research', or 'professional research'?

The fourth category is based on the financial aspect, and could in principle overlap with the other categories.

If we leave this category out, we have the following results:

- Investigation for studio projects leading to a design outcome, 29 %
- Research by design leading to optimal solutions, 27 %
- Supervised structured enquiry leading to a thesis of dissertation, 46 %

Most of the research carried out leads to a thesis or dissertation!

At what level in the curriculum is research carried out?

The largest part of the research is carried out on the level of doctoral and post-doctoral. If we take these levels together: 61 % of the research.

Only 10 % is carried out on the Bachelor-level.

Taking in account the Bologna-system of Undergraduate (Bachelor) and Graduate (Master –Doctoral): 90 % of the research in the curriculum is carried out in the (Post)-Graduate-stage.

Specialised Research Groups

Specialized research groups seem to be of great importance: 80% of the research is executed by this type of groups.

Organisation

However, if we ask how research is organised, schools indicate that only 30% is organised by Specialised Research groups. The main category of research (34 %) is organised in an 'Individual-one-to-one supervision'.

36 % of the research is organised as studio work, individual or in groups

Teaching of research methods

Schools indicate that 84 % have the teaching of research methods as part of the curriculum, especially on the (Post-)Graduate level: 92%. Does this indeed mean that students are hardly confronted with research methods in the bachelor stage?

It is also notable that 'Qualitative methods' of research are dominating the 'Quantitative methods', resp. 55, 5 % and 45.5%

Completion of Graduate research

In the graduate stage most of the research degree are completed with a Major thesis or dissertation: 72 %, against 28 % with a minor thesis or examination.

Of course, there is some difference at the master and doctoral stage. In the doctoral stage 80 % of the students complete their degree with a major thesis, in the master stage 61 % of the students.

Financing of the research

For the financing of research will always be done by means of a mixture of funding sources.

We distinguished:

- Schools own resources, 18 %
- Project sponsorship, 18 %
- Commissioned Research, 64 %

The category 'Commissioned Research' was further distinguished as follows:

- By appointment, private report: 13 %
- By appointment, public report: 18 %
- By national/regional/local competition: 18 %
- By international competition, eg. EU 6th Framework: 15%

This financing of the research carried out at architectural schools should still be focussed on. Is it really true that 15 % of the research is financed by 6th Framework of EU? This is unbelievable!

Output of research

Respondents could tick the following categories:

- Externally-sponsored exhibitions/catalogues or externally published projects 11 %
- Peer-reviewed papers (international journals): 14.5%
- Peer-reviewed papers (international conferences) 15.5 %
- Peer reviewed papers (national journals): 12 %
- Peer-reviewed papers (national conferences): 14 %
- Books: 17 %
- Published Research reports: 18 %.

This is no information on the types of produced output, we have just information on the recognition of types of output.

Many schools should be very happy, that most of the types of papers are recognised as research output. If we have to meet scientific standards only the category of peer-reviewed papers in international journals will be recognised. Of course the category 'dissertations' on the doctoral level is missing, and should be added.

Support of the research

Respondents indicate, that most schools offer support for research, 88 %.

The type of support is as follows:

- Financial support: 18 %
- Special awards for research-active staff: 15.5 %
- Share of research overheads for responsible staff: 13 %
- Administrative support for research bids: 15.5 %
- Structured leave of absence for research-active staff: 10 %
- Specialised equipment: 18 %
- Specialised technical support staff: 7 %

38.5 % of the support consists of incentives for research staff (awards, leave, shares of overhead).

Assessment

Finally we asked how research is evaluated by research assessments. 84 % of the schools indicate that assessments are carried out, mostly by National Assessment Committees, namely 57 %. The other types of assessment are by peer reviews, international as well as international, both of them score 21,5 %.

Evaluation / findings

In Master and Doctoral- phase: Thesis or dissertation must be the outcome

In Bachelor-phase: no research, there is almost no education in research, never optional. How do we introduce research into the bachelor or undergraduate stage?

Specialised research groups: Thesis and dissertation must fit into the framework of the

fields of specialised research groups. Master- and doctoral-students function as members of these research groups.

Output-categories: a distinction between professional and scientific output is necessary. Scientific output has to be restricted to refereed articles in international magazines and dissertations. Another type of research is applied research..

It is necessary to distinguish between types of competences, for instance:

- Competences Research & Design
- Competences Doing Research

Issues for discussion

Some of the points we could discuss here are: What are the competences for research and design in the graduate curriculum in studio work and in-course research methods, and the competences for scientific research, as specialized competences optional in the postgraduate phase? Do we agree that a major thesis or dissertation is the outcome of research and design, plus scientific research? Are research-driven education, research-led teaching and research by design worthwhile approaches, or are they just concepts to mask a problem in the relationship between education and research? And, finally, can we specify research competences? It was in order to do this that we had this questionnaire sent to you; and we will now ask the representatives that are here to make contributions on this topic by answering the following questions: Firstly, does your school claim to educate researchers and, if so, how does your new school curriculum do this? Secondly, what are the five fundamental competences and skills that your new school curriculum ensures your graduates in order to enable them to be researchers? And finally, how does your new school curriculum ensure these competences and skills in terms of related subject areas, positioning, timing and weight in the structure of the curriculum? Well, these were the questions that were addressed to the panel members that will now take their places behind this table. They will not give detailed answers, but will just outline the position of their schools in terms of research and how it is carried out at their school and what specific forms they have developed to do so. I would now like to invite the members of the panel join me at the table, and then they can make their contributions.

Research in Architecture Curriculum at **Nancy** School of Architecture

Françoise SCHATZ

Nancy School of Architecture, France

We do educate research students in our school in Nancy, but it concerns only a very few students at the end of the cursus. Actually, since 68, research has been at the 'center' of a switch in teaching, a way of « escaping » from the Beaux-Arts traditional teaching approach. At that time we began to build relationships with universities and the so-called 'grandes écoles' and to set up research laboratories. Nowadays 50% of full time teachers are practioners, while researcher - teachers make up 50% of the other half, though there is no researcher - teacher status in French schools of architecture.

Ever since, and because of that, the theoretical aspect of knowledge has been of great importance in our curriculum even if our main objective is to produce practioners. That is why we have a tradition of written and orally tested dissertations, in various fields of investigation, based on '*using appropriate sources of relevant information*' etc. Since 98, due to the regulated curriculum of French schools of architecture, one part of a student's work has been a compulsory research-type dissertation both in the second and third cycles. We also continue to ask the students to do the « old » long dissertation supporting the 'statutory' final project ('small' thesis, case-studies, etc.).

Since 91, I think, we have had a special curriculum called Diplôme d'Etudes Approfondies in the 5th year which is a requisite – however insufficient, as we'll see later on – for doctorates, a path towards the 8 of the 3/5/8. During their 5th year of studies, students must choose two items from a list of 5 or 6 so-called seminars on different topics. One of these is the research-oriented DEA, called « Modélisations et Simulations des Espaces Bâtis ». An admissions' board selects between 15 and 20 candidates from around France (including a few from our school, usually 2 or 3) and from abroad, most of whom have been trained as architects or engineers.

Compulsory core modules and optional modules are followed by a 5-month internship in a research laboratory, which is the subject of a written report and a viva voce presentation. In addition to the necessary tools, knowledge and competences to be gained, the subjects range from the most applied approaches to the field of cognitive sciences, as the whole curriculum is aimed at finding out if a student is capable of doing research.

Then follows the very narrow path of the doctorate, very narrow because the architectural school of Nancy is part of a university structure called Institut National Polytechnique de Lorraine in which, if you want to carry on to the 8th year, that is, if at the end of the 5th year, having passed your DEA with excellent marks and an admissions board, you are interested in research and want to obtain a doctorate in « sciences de l'architecture », you absolutely need a scholarship for the whole of the next 3 years. And that means a lot of money ! And above all scholarships are scarce : we can only get one per year - or less than one a year - through the INPL, and the spring should dry up next year. So we have to find other means to get interesting and interested students up to a doctorate. It is very difficult to

find scholarships because, as we come under the Ministère de la Culture and not the Ministère de l'Éducation Nationale, we are out of the university system.

That's the first issue I wanted to stress, the lack of scholarships i.e. of money. The second point concerns the content of the doctorate thesis : in my view and in that of all the researcher- teachers in my school and many from other French schools, a project in itself cannot be a doctorate ; scientific research has nothing to do with the 'search' for a project on a drawing board. This does not mean that projects and designs – or design- cannot be used as subjects of, or cannot be the focus of, investigation from any constructed point of view, but, as I said before, the result of a 3 year thesis cannot be a project.

Kees Doevendans, Eindhoven, The Netherlands

You said a scholarship from their own country: does this mean that there are a lot of students from abroad?

Françoise Schatz, Nancy, France

We have approximately 50 students at the DEA, and roughly half of these are foreign students.

Kees Doevendans, Eindhoven, The Netherlands

You said it is a passport to a doctoral degree?

Françoise Schatz, Nancy, France

Yes.

Kees Doevendans, Eindhoven, The Netherlands

Do this mean that you have certain specific competences as selection criteria?

Françoise Schatz, Nancy, France

In my opinion, they are very generic competences, generic for research; for example, the writing of hypotheses or the finding of basic sources or the planning of research time, and so on. For me, these are generic research competences

Kees Doevendans, Eindhoven, The Netherlands

And you would distinguish this type of research competences from those required for research in design projects?

Françoise Schatz, Nancy, France

It depends. I don't think that a project can be research. You can do research on design, for example, one can researched on how architects think, and things like that; and while

these could certainly be topics for research, I don't believe that a research by project could be a Doctoral thesis.

Kees Doevendans, Eindhoven, The Netherlands

OK. Thank you for your presentation. I would like to limit the questions, but maybe, if there are only one or two, we could hear them now?

Christian Huetz, Regensburg, Germany

Francoise, I just have one question, how many students do you have altogether in the school?

Françoise Schatz, Nancy, France

600 students

Truus Ophuysen, Amsterdam, The Netherlands

Is that a general opinion in most or all French schools, or is there a variety of ideas about this?

Françoise Schatz, Nancy, France

No, I think it depends on the school and on the individual.

Kees Doevendans, Eindhoven, The Netherlands

OK. We will limit the questions to important informative questions. Thank you, Francoise, for your contribution. The next contribution is from the United Kingdom, from the Portsmouth University School of Architecture. Lorraine Farrelly is here: would you please tell us how you view the issue of research, how it is integrated into your school and how it is organized.

Research in Architecture Curriculum at **Portsmouth** School of Architecture

Lorraine FARRELLY

University of Portsmouth, School of Architecture, United Kingdom

1. Our School does Educate Architects to be Researchers

There is a connection back to the main area of undergraduate teaching in the school of architecture where there is a tradition for learning through Paradigm/case study.

The University also encourages the idea of Knowledge Transfer. This is a national education initiative to encourage partnership with business/practice at Masters level.

The main Intention at Portsmouth, is the Integration of architecture and research through teaching and where appropriate design projects into the curriculum.

We have three specific areas of research including landscape, environment and architecture, and urban design. There are real urban problems that students are using to generate ideas. It is the process of the urban design problem that is being considered and investigated, how to create large scale urban change in the city.

A Generic unit "Research Methodologies" exists within our faculty of environment and introduces general issues of research such as referencing, research and writing.

In the most formal sense this takes place in three units of the 4th year of studies on the post graduate/ masters course:

1.1 Architecture & Culture

A lecture based unit approximately 12 x 2 hour lectures

Invited speakers talk about different themes of architecture and culture:

Including : Film, Urbanism, Landscape

Assessed through student seminars run by students and a written report.

One of the intentions is to assist students to become familiar and proficient in the reading and production of academic texts – the language of research.

Texts are considered and compared in seminar.

1.2 Dissertation

In addition to being an opportunity to implement the lessons from (1) in a major piece of written work, this unit also introduces through lectures and/or workshops, the variety of approaches to research, and some of the methods.

References:

Director of research

- a) McCartney, K. (2001) Research Training for Designers: Diagrams & Conceptualisation, in Research by Design, Delft University Science, Delft, NL, p222-228.

- b) McCartney, K. (2004) Role of Diagrams in Research, presented to EURAU (European Research in Architecture & Urban Design), Luminy, Marseille, April 2004.

1.3 Architectural Technology

A fundamental function of this unit is to develop skills in using Case Studies as a research method, which is of particular value to architects and other designers. A different building is chosen each year, and students are required to work in small teams to gather and analyse both secondary and primary information about the design, construction and operation of a significant example of contemporary architecture. In order to facilitate peer group learning, the case studies are produced using a common template, inspired by the analysis of the contemporary workspace by our former Visiting Professor, Frank Duffy of DEGW, working together with the Building Research Establishment. This use of case studies focuses on specific areas such as environmental control or use of innovative materials and technology for comparison.

references:

Portsmouth School of Architecture web site: Student Information, Diploma 1, Unit 410 for briefs and examples of student work
www.port.ac.uk/architecture/studentinformation

2. Five Fundamental Competences:

reference to enumeration used in Questionnaire:

- 5 - Ability to define research topics
- 6 - Ability to formulate research questions
- 9 - Ability to prepare, process, interpret and present data ...
- 11 - Ability to communicate appropriately ...
- 17 - Ability to reference sources appropriately

3. How are the Five Fundamental Competences Achieved?

- | | |
|---|--|
| 5 - Ability to define research topics | tutorials & workshops
Dissertation (1.2 above) |
| 6 - Ability to formulate research questions: | tutorials & workshops
Dissertation (1.2 above) |
| 9 - Ability to prepare, process, interpret and present data | Template and examples
Architectural technology (1.3 above) |
| 11 - Ability to communicate appropriately | one-to-one tutorial feedback on student's own texts and web-based presentations by students to peer group
Dissertation / Architecture and culture/ Architectural technology (1.1/ 1.2/1.3 above) |
| 17 - Ability to reference sources appropriately | one-to-one tutorial feedback on student's own texts
Architecture and culture. (1.1above) |

Kees Doevendans, Eindhoven, The Netherlands

Thank you very much. Before we go on, I have one question. You spoke about case studies: do you think that research can be based on case studies? Because that has always been a matter for methodological debate, and many people believe that case studies are not scientific.

Lorraine Farrelly, Portsmouth, United Kingdom

I think that a case study can be a starting point to investigate and to understand. I don't think that it can be a complete area for research on its own.

Kees Doevendans, Eindhoven, The Netherlands

OK. If there are one or two informative questions we can hear them now; if not, we can go on to the third lady on the panel, Elzbieta Trocka, who is from the Technical University of Wroclaw, in Poland.

Research in Architecture Curriculum at **Wroclaw** School of Architecture

Elzbieta TROCKA - LESZCZYNSKA

Wroclaw Technical University, Faculty of Architecture, Poland

I would like to begin by presenting our school. It has twelve departments, one of which is the architecture department with 1700 students, and is a part of the University of Technology, which has a total of 35,000 students. We have a five-year programme of studies, leading to a Master's degree; we do not have a two-step programme, only a Master's degree. A few years ago we also instituted a four-year doctoral programme. Every year we hold a competition, which is open to Master's graduates from our and other schools and also to practicing architects and choose 30 students that have had some kind of practical experience, with research, with conferences, with publications. This means that the whole programme has almost 150 students. Every year we have five or six scholarships from our faculty and a few from the university, so that we have thirty scholarships for the entire doctoral programme. Sometimes we look for financial support from the Ministry of Science, and some students that have a sponsor or tutor can also receive special grants for research purposes. As a part of this PhD school, as you might call it, we have outside researchers as well as faculty members. There are researchers that are working towards a professorship, who are completing a book or some papers or publications or who attend conferences, and then there are researchers who are paid by the city and who are studying together with the professors and students, and in this

way we can start to show the students what research is and how it is done. In addition, as part of these research programmes we also have scientific groups, and we hold special scientific seminars where the faculty and the students from the Master's and doctoral programmes can discuss the results of various kinds of research projects. We also have research groups made up of professors that come together to do research in spatial planning, in monument conservation, in architecture and town planning, and in theory and history of architecture.

Kees Doevendans, Eindhoven, The Netherlands

The issue of this conference is competences, and I see you make a kind of selection: you referred to students that have attended conferences, had material published, and so on. That is similar to what Françoise said about some types of competences, like being adept in scientific communication and things like that. Is that a criterion for you?

Elzbieta Leszczynska Trocka, Wroclaw, Poland

Yes

Kees Doevendans, Eindhoven, The Netherlands

Thank you for your contribution. I see there is a question. Yes, please.

Heiner Krumlinde, Bochum, Germany

I'm not sure I understand what sort of research is being done in your school. We always hear the same basic topics talked about, whereas in Poland the focus seems to be on history, design history and conservation – I know you are masters at conservation in Poland. Can you give us an example of a specific research topic that you have done?

Elzbieta Leszczynska Trocka, Wroclaw, Poland

One example might be spatial planning. We have a lot of scientific problems in the area of spatial planning because it entails a lot of mathematics and a lot of communications problems, but from a scientific point of view, not only from the design side: there is a lot of theory as well. This is one problem. Another has to do with theory in architecture and the history of architecture, because we in Poland are somewhat specialized in the history of architecture. This is particularly true of our school, which is in southern Poland, in a very interesting district, so there are a lot of dissertations on topics such as history of architecture in relation to special cities, or to special kinds of architecture, or to special kinds of design, and so on.

Kees Doevendans, Eindhoven, The Netherlands

Thank you very much. If students are selected, for instance, for a subject on history of architecture would they be chosen from the field of architecture or art history?

Elzbieta Leszczynska Trocka, Wroclaw, Poland

We have a special time for choosing professors, since every professor at our school has his own topics.

Kees Doevendans, Eindhoven, The Netherlands

There are no research programmes, in other words, they are individually based.

Elzbieta Leszczynska Trocka, Wroclaw, Poland

Yes, and it is based on e-communication. Students visit the professors' web-sites and choose the field they are interested in, and then during the competition for study they can specify which particular topic they are interested in and with which professor, and over the four years it will become more specialized.

Kees Doevendans, Eindhoven, The Netherlands

This is a fairly student-oriented system?

Elzbieta Leszczynska Trocka, Wroclaw, Poland

Yes, from one aspect, but there is also research led by the professors, sometimes separately from the student.

Kees Doevendans, Eindhoven, The Netherlands

OK. Thank you. Our next speaker is Leen Van Duin, Head of the Architecture Department at the University of Technology in Delft. Leen, perhaps you could also mention research programmes.

Research in Architecture Curriculum at **Delft** School of Architecture

Leen VAN DUIN

Delft University of Technology, Faculty of Architecture, Delft, Netherlands

In the 1930s, the leading lights of the Modern Movement gathered on a cruise on the Mediterranean set down their common aims in the famed Charte d'Athènes. This utopian document, which would have far-reaching influence on the extension of European cities, would also mark one of the last attempts to formulate a comprehensive architectural programme. In the ensuing decades, architecture has been increasingly characterised by the absence of a programme. Due to the rise of the free market and the flexibilisation of professions, architects explored the limits of architecture and exceeded these, by drawing on current intellectual and artistic developments – from philosophy to video clips –, at times disregarding all conventions in a frenzy of total freedom.

The city as a configuration of spaces – streets, squares, parks – and buildings – residential neighbourhoods and public buildings – mutated into a disparate collection of buildings, explainable from a overwhelming commercialisation of architecture and the need for an easy reach of accessibility – a global network – but without an idea of the city as an architectural artefact.

The Faculty of Architecture of the Delft University of Technology developed in 2002 a research programme for a period of seven years.

One of the research programmes, 'Urban Architecture', proposes the city synonymous to architecture.. Description, analysis and composition of forms, structures and functions are seen as principles for reception and design of urban artefacts. Notions as typology and morphology are related to designs that are no longer indifferent, but spatial characterized by continuity, clarity and precision, and that are capable of being used for a variety of purposes.

In the period 2002-2008 the research is focussed on the architecture of the Dutch city. The need to explore the durable development of our cities is greater than ever. Such a research project should be included in Schools of Architecture, because only there students and professionals can work free from the pressure of the market, and search for a new role for the profession by moving with caution between historical knowledge and today's questions.

With a concept of a permanent architecture in a European tradition one could free architecture from a chaotic and rapidly changing society, as well as from any utopian visions. We think that vital architectural knowledge can not be invented, but has to be transmitted through practice, in concrete historical situations with specific demands. In the oncoming years, architectural Metamorphoses, Interventions and Transformations (MIT) of the city will be our domain. It is this approach we want to explore here in this conference, together with colleagues from abroad who are interested in a clear and self evident architecture of the city.

I want to stress the open an international character of our programme. Research in architecture and architectural design is nowadays all over Europe seen as extremely important. The council of the European Association for Architectural Education (EAAE) emphasizes the importance of research programmes in schools for architecture as much as they can:

1. of course to develop the discipline;
2. but also for the content of the curricula;
3. or to define one's position in the very different points of view within the discipline;
4. and last but not least, to explore the possibilities left to architecture as an autonomous discipline.

The aim of our programme on 'Urban Architecture' is:

- a. to contribute to the understanding and development of the European city, especially architectural projects in European cities;
- b. improvement of design methods. In Delft we explored till the sixties/seventies a severe functionalistic approach to design tasks. Under influence of the Italian morphological research we got interested in a more rationalistic approach, which we explored in so called plan analyses. We tried to link this type of studies to the debate on rationalism

in the eighties and nineties, and to continue this line in the programme 'Urban Architecture'.

- c. We do not believe in one overall theory. We see typological and morphological research as a way to discover the meaning and logic in architecture. But it takes time and effort to discover the mastery in the most ordinary things. We believe, within the continuity of the discipline, in the personal vision. Only through a free and virtuoso treatment of certain characters, one can come to satisfying, clear and bright designs.

In this light, we want to know under which conditions a design can be seen as scientific output. The Delft University of Technology recognizes a design as a doctorate if:

- x. It is accompanied by a written analysis that includes the various steps in the design process.
- y. It indicates a solution for a class of problems and generates new knowledge, or show how existing knowledge can be applied into new designs.
- z. It meets the formal standards as:
 1. relevance of the subject
 2. importance and definition of the problem
 3. originality of the approach
 4. the arrangement, analysis and processing of the material in relation to the quality of the design
 5. creativity in the field
 6. critical confrontation of the design with the state of the art
 7. balance, clarity and brightness of the design.

As I mentioned before, in our research programme we also laid down content-based principles for monitoring the quality of our MS-c programme, which expresses the view that the content of curricula must not be exclusively determined by the demands of professional practice, but, as well, by the innovative insights of research programmes at schools all over Europe. In this connection, the need to explore the possibilities left to architecture as an autonomous discipline is greater than ever before.

Kees Doevendans, Eindhoven, The Netherlands

That is, of course, important. This is also in the Berlin Declaration, which says that "Networks at Doctoral levels should be given support to stimulate the development of excellence and to become one of the hallmarks of the European Higher Education Area". So I think that perhaps you are saying that the EAAE could also provide support. Now, I have a question concerning your contribution: I understand that, in principle, there is no distinction between competences for research and design; competences for design are competences for research, and vice versa. Is that your opinion, then, that there are no specific research competences? You also emphasized that there is a research programme and a separate teaching programme. Of course, traditionally, in the faculties of chemistry and engineering, the research programme always was the education programme – there was no education as such: education was the spin-off of research.

Leen Van Duin, Delft, The Netherlands

This is something that I wanted to add, that in the Master's course the student does not choose his own project: this is decided by the staff. The staff have their own research programmes, and the students work within those programmes.

Kees Doevendans, Eindhoven, The Netherlands

The projects are taken from the research programme, so they are not entirely separate. Well, I am from the corresponding Department in Eindhoven and the situation is the same there. We have a research programme only at the Master's level at the moment, and we call it 'research-driven education' because, since under the Bologna system education is no longer funded at the Master's stage, there is only funding for research. Even the Director of Education now says: "Please, do not educate students, do research".

So, thank you, Leen, for your contribution. Before we continue, there is a question from Roger.

Roger Liberloo, Diepenbeek, Belgium

Do the other universities agree with your view that design is research – for instance, the University of Leuven?

Leen Van Duin, Delft, The Netherlands

I am just speaking for the University of Delft.

Roger Liberloo, Diepenbeek, Belgium

Yes, but have you discussed this with other universities?

Leen Van Duin, Delft, The Netherlands

Not yet. This is a task for the EAAE. My statement does not only relate to architecture, but also to the other technical disciplines at our university – we have aeronautical and civil engineering departments, for example – and all these faculties agree with what I have said.

Kees Doevendans, Eindhoven, The Netherlands

OK. So let us go on to our next speaker, Rainer Mahlamaki, Head of Department of Architecture of the University of Oulu, in Finland. Please proceed.

Research in Architecture Curriculum at **Oulu** School of Architecture

Rainer MAHLAMAKI

University of Oulu Department of Architecture, Oulu, Finland

Good afternoon and greetings from the northernmost school of architecture in the world! To begin with, I have to say that we do not have a finished programme or profile in research or studies in our school today, but this process is going on at present and I hope I can take some wise suggestions back with me when I return. In my opinion, research in architecture today should be considered from three different angles. Firstly, the history of research is very short, at least in Finland, and is concentrated on the research of the past. This means that we have books or research on topics such as the meaning of the Dutch Art Nouveau to the Finnish architecture or how the locality and the international intertwine in architecture – every country has its own examples. Typically, topics are the idea of a single researcher, or in this case, of a single architect, and the results are books or doctoral theses aimed mainly at professors, and secondarily at people who are interested in art. So, typically, in this kind of research the researcher is like a modern day translator of history and, in my opinion, we still need this kind of research today and in the future as well. Secondly, we need theoretical studies that gives material for Bachelor's and Master's level education, like science, environment, sociology, science of human behavior, theory of planning, etc., and this type of research should be organized and directed, and the results also, books and doctoral theses, should be directed primarily towards education. Thirdly, I would like to say that the newest area today is clearly the results achieved by outside funding or, in other words, commissioned research, which is focused on immediate benefit. The results could be a written presentation, or a building, or an industrial product – in our school, industrial design is a part of education on both Bachelor's and Master's level. We already have quite interesting examples in the area of Oulu; we have concentrated on wooden or timber architecture and today we have a group of about ten researchers and teachers and we try to create some kind of bridge between design and research, and this, on our scale, is almost revolutionary. We have concentrated mostly on wooden housing, but we also have one interesting example of a small wooden church. However, the important thing is that besides the design we can finish the doctoral thesis, theoretical documents, so in a way it is a combination of theory and practical design.

Kees Doevendans, Eindhoven, The Netherlands

What do you mean by the doctoral thesis? Is that at the end of the Doctoral stage, in the eighth year?

Rainer Mahlamaki, Oulu, Finland

Yes.

Research in Architecture Curriculum at **Ankara** School of Architecture

Selahattin ÖNÜR

Middle East Technical University , Department of Architecture, Ankara, Turkey

Prologue

Higher education in Turkey is already two-cycle (bachelor's and master's) plus the PhD level. The difference from EHEA (European Higher Education Area), in this respect, is that the first cycle is four years. Thus, while it has taken steps to implement the adjustments (e.g., for ECTS, diploma supplement, and assessment) regarding the EHEA, the Turkish Higher Educational Council appears not to have been satisfied with a three-year bachelor's cycle for the undergraduate education in the universities and wants to continue with the four year.

At present, architectural schools in Turkey, after four years of the undergraduate study, give a professional bachelor's degree which authorizes the graduate as an architect with all the rights issued thereunto. There is also no required internship period upon graduation. This existing situation is not in keeping with the criteria and proposals of the EAEA (European Architectural Education Area, - the "Chania Statement"). Recently a process for necessary changes to be made in architectural education has started, as a consequence of the European Council directive (07.03.2002/0061 - COD -) regarding the recognition of professional qualifications necessitated for the free mobility of professional services in EU and affiliated countries. The draft prepared for these changes proposes (4+2) (bachelor's and master's cycles) whereby the bachelor's will no more be a professional degree; thus, the duration of education for the title of architect will amount to six years, except the two-year internship that will also be demanded. The present master's programs other than the architectural design (e.g., restoration and conservation, architectural history, building science) will continue with new ones added to be accessible after the bachelor's.

Question 1: Does your school claim to educate researchers? If yes, in what way does your new school curriculum do this?

METU on the whole claims to reinforce its status as an international research university:

- More emphasis has been given to the already existing master's and Ph.D programs. Through these programs METU has also undertaken a role of educating young researchers for academic careers in new universities in Turkey.
- Curricula and each specific course in all the cycles (undergraduate, master's, and Ph.D) emphasize and encourage the development of research mindedness and learning to learn.
- Relatedness and continuity between all the three cycles (bachelor's, master's and Ph.D) have been facilitated.
- Master's and Ph.D theses studies can be formulated and run by the student under the

supervision of the advisor/tutor as a "Scientific Research Project" which, in that case, is funded by the University.

- Graduate options are encouraged to be established in the existing programs by staff who have related areas of specialization. Research projects and networking can help develop the research dimension in these options.
- A center for research, design, planning, and implementation has recently been established in the Faculty of Architecture. It is expected to function in generically defined areas in specific units of this center ("product design and identity", "Anatolian settlements", "materials conservation and laboratory", "universal design", "design and information technologies", "steel structures", "regional and urban research", "design", and "urban design"). The development of research units in this center is expected to reinforce research based education, especially in the graduate programs.
- C.I.B. Student Chapter has been founded upon approval by the C.I.B. Board in September, 2004. One main intention is for students to have access to worldwide networks and knowledge related with their research interests.
- During the 3rd and 4th years in the bachelor's program there are ten elective courses. Students are expected to choose at least one from each area of: "technology"; "environmental control"; "design and representation"; "architectural history"; "urban and city planning". The other five courses can be focused on any area that the student may be thinking of as a future area of study and research.

Question 2: What are the five fundamental competences and skills that your new school curriculum ensures to your graduate in order to enable them to be researchers?

From the given list:

- 1) Awareness of the ongoing nature of architectural research and debate
- 4) Awareness of the moral and ethical issues of investigation and the need for professional codes of conduct in research (e.g. appropriate acknowledgements of contributions, etc.)
- 5) Ability to define research topics which will contribute to knowledge and debate within architecture
- 8) Ability to identify and use appropriately sources of relevant information and to identify and use relevant retrieval tools (bibliographical sources, archival inventories, etc.)
- 15) Ability to plan, conduct and report on investigations

Question 3: How does your school curriculum ensure these competences and skills...?

"Undergraduate Program" / related subject areas:

1st Year: "Design"; "Introduction to Architecture"; "Graphic Communication"

- 4) Awareness of the moral and ethical issues of investigation and the need for professional codes of conduct in research (e.g. appropriate acknowledgements of contributions, etc.)
- 8) Ability to identify and use appropriately sources of relevant information and to identify and use relevant retrieval tools (bibliographical sources, archival inventories, etc.)

15) Ability to plan, conduct and report on investigations

2nd Year: *"Architectural Design"; "Landscape Design"*

- 1) Awareness of the ongoing nature of architectural research and debate
- 8) Ability to identify and use appropriately sources of relevant information and to identify and use relevant retrieval tools (bibliographical sources, archival inventories, etc.)
- 15) Ability to plan, conduct and report on investigations

3rd Year: *"Architectural Design"; "Principles of City Planning and Urban Design"*

- 1) Awareness of the ongoing nature of architectural research and debate
- 8) Ability to identify and use appropriately sources of relevant information and to identify and use relevant retrieval tools (bibliographical sources, archival inventories, etc.)
- 15) Ability to plan, conduct and report on investigations

4th Year: *"Architectural Design"; "Professional Practice"*

- 1) Awareness of the ongoing nature of architectural research and debate
- 4) Awareness of the moral and ethical issues of investigation and the need for professional codes of conduct in research (e.g. appropriate acknowledgements of contributions, etc.)
- 8) Ability to identify and use appropriately sources of relevant information and to identify and use relevant retrieval tools (bibliographical sources, archival inventories, etc.)
- 15) Ability to plan, conduct and report on investigations

"Master's Programs" and related subject areas:

(Architectural Design: "Introduction to Architectural Research";

(Building Science: "Building Science Workshop")

(Restoration and Conservation: "Sources and Methods of Research in Restoration")

(History of Architecture: "Research Methods")

- 1) Awareness of the ongoing nature of architectural research and debate
- 4) Awareness of the moral and ethical issues of investigation and the need for professional codes of conduct in research (e.g. appropriate acknowledgements of contributions, etc.)
- 5) Ability to define research topics which will contribute to knowledge and debate within architecture
- 8) Ability to identify and use appropriately sources of relevant information and to identify and use relevant retrieval tools (bibliographical sources, archival inventories, etc.)
- 15) Ability to plan, conduct and report on investigations

"Ph.D Programs" and related subject areas:

(Architectural Design: "Architectural Research I-II")

(Building Science: "Architectural Research I")

(Restoration and Conservation: "Architectural Research I")

(History of Architecture: "Research in Architectural History")

- 1) Awareness of the ongoing nature of architectural research and debate

- 4) Awareness of the moral and ethical issues of investigation and the need for professional codes of conduct in research (e.g. appropriate acknowledgements of contributions, etc.)
- 5) Ability to define research topics which will contribute to knowledge and debate within architecture
- 8) Ability to identify and use appropriately sources of relevant information and to identify and use relevant retrieval tools (bibliographical sources, archival inventories, etc.)
- 15) Ability to plan, conduct and report on investigations

There are in the Architectural Design Graduate Programs several theoretical and design elective courses that are important in terms of learning outcomes and competences related to research:

- Advanced Themes in Architecture and Urban Design
- Advanced Architectural Design Research
- Advanced Topics in Digital Constructivism
- Housing Research and Design Studio

In the Bachelor's Program there is the "Digital Design Studio", which is a design research studio intentionally started at that level, but will continue into the graduate levels.

Kees Doevendans, Eindhoven, The Netherlands

Thank you very much. You have given an exemplary presentation. Are there any questions from the audience? Yes, Roger.

Roger Liberloo, Diepenbeek, Belgium

How many students are there and how many researchers?

Selahattin Önür, Ankara, Turkey

Altogether the department has about 550 students: around 310 undergraduates, 165 Master's students, of whom 88 are architecture students, and 52 Doctoral students. Of course the Master's and doctoral theses and dissertations constitute the major research areas and research activities. The research is still mostly student-centered, but we academics are, both generally and individually, opting for more of a group kind of research to be instituted and promoted. For the moment, however, the research work is more open and individual, with publications and so forth, which are also encouraged.

Kees Doevendans, Eindhoven, The Netherlands

Thank you very much. I see that there are no more questions from the floor, but I do have something for the panel to think about: if we decide to create a doctoral network of staff co-operation, which of the other panelists could you work with best? Which system do you feel more comfortable with?

To turn to the debate, it is clear that one of the main themes for discussion is the relation of research and design; and I think that we should try to see whether we have to distinguish between certain competences related to design and science on the one hand and research on the other hand, or whether this is not necessary. Thank you.

Discussion

Coordination by

Kees Doevendans, Eindhoven, The Netherlands

Kees Doevendans, Eindhoven, The Netherlands

Members of the panel, I think we should start the debate now. The idea is that we have a debate for 20 minutes or so, and then, before closing this session, we can do the competence exercise I proposed. And there will be a keynote lecture later this evening. We have heard the presentations from the schools, and I think that some important issues were raised: funding was a recurring issue, as was the system – that is, the place of different competences and research focuses in the system. I think we do not need to discuss this item here this afternoon, because it has already discussed at great length. Nor should we talk about funding, because I know that you do enough of that at home, what with budget cuts, financial cuts, and so on.

Leen Van Duin mentioned that we need more information about content; and I think that, although we can also discuss system and all kinds of other things, we need more information on content – the themes and subjects of dissertations. This is something that could perhaps be included in the EAAE database. We can find out what the subjects of theses and dissertations at various stages are, and maybe pass this on to the board of the EAAE. Another issue that came up was case studies and project-based research, and I think that the question of whether case studies and projects can form a basis for scientific research is another subject we should discuss. There is also the notion that Leen Van Duin introduced, that research and design are closely related. I am not sure, Leen, whether you are talking about teaching or design or research, since you touch on all three. In my school, for example, there are clearly distinguished learning target areas, and designing is one type of competence and doing science is another and doing research is a third, and they are not mixed. Of course you can combine them, but they are separate learning target areas, separate competences.

So this is one of the questions I have after these presentations, but it is not up to me to decide what you want to talk about: it is up to you. Perhaps you have some questions, and then we can debate those issues. Is there someone who wants to start the discussion? Pierre Von Meiss will speak first.

Pierre Von Meiss, Lausanne, Switzerland

Well, we received the questionnaires about research, but the problem is that we get a questionnaire every six weeks or so, and not only from this institution. In Constantin's questionnaire, these areas of research are touched upon very clearly, but then again it leads only to statistics and not to ideas. The statistics you showed were quite similar, in terms of the fact that they show that you know how much of what is going on where. Then we have these presentations where everybody starts to talk about what is going on in his school, and that could go on for days.

In order to start moving ahead I would like to make a suggestion. In Constantin's questionnaire a distinction was made between what was going on at the Bachelor's, Master's and Doctoral levels. Why could we not agree, among schools, on some minimum requirements in the area of research for each level? This does not mean homogenization: it simply means guaranteeing some basic levels of research education. So, for example, I would say that at the Bachelor's level every student should be able at least to make a state-of-the-art study. I will explain later what I mean by this, because I believe that it is really the prerequisite to any research. There is no point in repeating research that has already been done. At the Master's level, while I don't think that we are really going to train researchers, it could perhaps be a minimum requirement in all schools that anyone who has studied architecture at that level should be able to formulate a research hypothesis very clearly. And then, for the PhD, he would have to work on that hypothesis. If you will allow me to tell you a story, I will give you an example of what I mean by a state-of-the-art study. When I started teaching in the United States, they asked me to teach graduate students how to go about research, and I had to admit that I didn't know, since I had never done any. So they got a scientist from the National Science Foundation to come up for one week. (He was not an architect.) He gave us some statistics on the size of the average American from 1860 to 1970, made a projection that showed that by 2040 the average American would be close to 3 meters tall, and told us to make a state-of-the-art study, saying that before you research a topic you have to find out what and how much is known about it. So we asked around, and no one could tell us anything, until finally at the end of the week we found that the only place where we could get any information was at the Pentagon, which had encountered a similar problem in 1951, when all the uniforms for the Korean War proved to be too small for the new generation of soldiers that was coming in. And since this was during the Cold War and they had to be ready at all times, they had therefore done this research. So I repeat, it is absolutely fundamental to know how to make a state-of-the-art study, and I think that this should be taught at the Bachelor's level. Thank you. I am sorry if I have taken up too much of your time with this story.

Kees Doevendans, Eindhoven, The Netherlands

No, no. Thank you for this story. Of course it is interesting to have concrete examples of how we do research. I agree with you, but I think that the idea is that competences could be a kind of first step to making things more concrete. But I agree that figures are not the most interesting part, although they do give some kind of idea of what we are talking about and of different conceptions. So, thank you again for this story.

Loughlin Kealy, Dublin, Ireland

I have two questions for Professor Françoise Schatz. The first is a very simple question: of the 600 students she said they had, how many are research students?

Françoise Schatz, Nancy, France

3 or 4.

Loughlin Kealy, Dublin, Ireland

OK. Thank you. The other question, which is slightly more difficult, is that I think you said, almost in the same sentence at the beginning of your remarks, that research was almost an escape from the beaux arts...

Françoise Schatz, Nancy, France

No, I didn't say that. What I said was that before 1968 there was a tradition of beaux arts teaching by osmosis: you know, when you worked in a studio together with the other students and from time to time a teacher came by and said that your work was good or not good, and that was all. So you learned by a kind of osmosis, without knowing exactly what or how you were learning: you simply had things explained to you or shown to you. After 1968, you had to do research to prepare subjects for courses, to construct lectures, and so on. That is why I said that research was the way of escaping the traditional beaux arts teaching, because as a teacher you need research to build a core so that you have a solid foundation for your teaching. It does not mean that we don't teach within the studio as well.

Kees Doevendans, Eindhoven, The Netherlands

OK. Somebody wants to enter the debate. Could you also mention your name please?

Eric Monin, Villeneuve d'Ascq, France

I am from the School of Architecture in Lille. I am a little bit upset because nobody has mentioned the role researchers play in schools, and especially in changing things in schools. We only discussed how schools should educate researchers, but we forgot to mention that researchers are people who generally work in networks and that sometimes schools can change and evolve thanks to the actions of researchers.

Kees Doevendans, Eindhoven, The Netherlands

What do you mean by networks?

Eric Monin, Villeneuve d'Ascq, France

I used the word networks to suggest how researchers work, publish, meet one another at conferences. This is a good way to meet people who are thinking or working on the same subject and to create strong relationships.

Kees Doevendans, Eindhoven, The Netherlands

Yes, I agree. You mean the usual scientific communication circuit, with conferences, and this kind of thing. Are there network conferences for research by design? Yes? Are you sure?

Eric Monin, Villeneuve d'Ascq, France

I am sure.

Leen Van Duin, Delft, The Netherlands

I have a question. One of the remarks I made, and you may or may not agree with this, is that there is a difference between universities, where you have to produce new knowledge by research (at least this is the case in Holland, but I think it is the same all over the world), and academies, or Fachhochschule, where the goal is simply to produce architects. And if the main focus is on producing architects, the question arises as to whether research is necessary in that type of school. I speak now of the difference in Germany between the Fachhochschule and the universities. You are from a Fachhochschule?

Heiner Krumlinde, Bochum, Germany

Yes, I am a professor at a Fachhochschule, a second-class university, if you like, in Germany. I want to speak of one aspect of research, which can be introduced even at the undergraduate level. I have considerable experience of international workshops, having done 20 or so of them. When German students, for instance, go to another country, to a specific region with its own specific problems, perhaps caused by a decline in industry, and see problem areas in the cities, perhaps along the waterfront, and work with other students in international groups, they become curious. And they are curious about the meaning of the particular region, its circumstances and its history. And the results of these initial acts of research may be unknown in the city itself, because the people who live there do not see these problems. So this may be one answer to the problem – and for me it is a problem – of how a school that has never had any experience of research can begin to approach this sphere of activity.

Kees Doevendans, Eindhoven, The Netherlands

Does anyone want to respond to this idea of research? Is this the beginning of research?

Joaquim Braizinha, Lisbon, Portugal

I would like to make a point about the recent evolution of the notion of research. Throughout my entire life in the university, research and teaching were two separate activities. Research was done in research institutes, and teaching was done in the universities. Recently, however, the two have become mixed. I think that what we have always done during our life in the university – preparing lessons to teach to the undergraduate students, teaching Master's, teaching PhD's, sitting on juries for Master's and PhD's, and so on, can certainly be called research. Our life in the universities is research, all the more so since in Portugal, for instance, teachers at public universities work 36 hours a week, of which 12 are for teaching, 12 are for research and 12 are for doing certain various other kinds of work for the school.

So, my question is, how is preparing lessons, supervising theses, teaching Master's and teaching PhD's different to researching?

Kees Doevendans, Eindhoven, The Netherlands

I see. But if this is your interpretation of research, what do you think of the idea expressed by your neighbour that you have to be part of a network, that you have to visit conferences

and present research results at conferences? Yes, you can say that we always do research in the university and in the studio, as you said; but surely by definition a researcher has to be part of a circuit, a communications circuit, a scientific circuit?

Joaquim Braizinha, Lisbon, Portugal

I think that this is the second part of the notion of research – it is applied research.

Kees Doevendans, Eindhoven, The Netherlands

No, it is the first.

Joaquim Braizinha, Lisbon, Portugal

It is applied research, it is a different thing.

Kees Doevendans, Eindhoven, The Netherlands

OK. Christos?

Christos Hadjichristos, Nicosia, Republic of Cyprus

When I hear all this use of the word research, like you, I am confused. I guess what we need to do first is to decide what research means to us, as architects. For us it means scientific research; and this is like a club, with very specific rules, and with a number of different disciplines and different areas of activity, and whose members, over the years, have managed through networking, through sharing, through trial and error, to find a way to communicate what they mean by what they do. So I believe that by either identifying ourselves totally with a very generic term like scientific research – architecture is scientific research – or by saying that design is research or teaching is research, we are missing an opportunity. I believe we need to find our own identity as researchers, and specifically as architects, and not by going to either extreme.

Kees Doevendans, Eindhoven, The Netherlands

This is one view, certainly. If you have a standard metre you can always make it one centimetre shorter.

Leen Van Duin, Delft, The Netherlands

I have a question for the audience. Imagine that in your school there are no students, but you do have your research programmes. What happens to your work then? Can you survive as an institution only by doing research? Can you make your contribution to society, to the profession and to the discipline, solely as researchers, without any students? And can you fulfil your research programme without any students? Because if you can, then what you are doing is research. My question is: if there were no students, what would your research be?

Joaquim Braizinha, Lisbon, Portugal

There would be no schools, no results. There would be nothing.

Leen Van Duin, Delft, The Netherlands

Yes, but there are research institutes where you can do research, and where there aren't any students to bother you and where you don't have to go to the studio. I will give you the example of a department in my university – I think it is the faculty of natural sciences – where all the professors (and there are 30 or 40 of them) are proud to have zero students in their faculty, because then they can put all their effort into doing research, to develop the discipline. And they do not want students.

Joaquim Braizinha, Lisbon, Portugal

Well so what do you call your early work in school, teaching in different levels, stimulating the students to find their own ways of thinking, what is this?

Leen Van Duin, Delft, The Netherlands

This is teaching, yes, of course.

Joaquim Braizinha, Lisbon, Portugal

What is teaching, now that this notion of research has been introduced into the universities? What we do is research, basic research perhaps, but it is research.

Kees Doevendans, Eindhoven, The Netherlands

Maybe a sabbatical is what we all need – no students, just typewriting.

Dimitris Kotsakis, Thessaloniki, Greece

Yes, maybe we do need a sabbatical to understand what we mean by the word research, because it has changed completely. If we start with the Berlin Statement, we have a European Higher Education Area and a European Research Area; in other words, between the two statements, Bologna and Berlin, these were two separate areas. Then we come to the spurious division between universities and polytechnics, and so on. Now, this distinction has become meaningless, because they both belong to the higher education area and neither belongs to the research area, so all this business about first and second level higher education belongs to the past. We have to redefine things from the beginning. To my mind, the concept of a university, no matter what it is called (for in different countries they give them different names) is an institution with both research and education. That is the way things were in the past, and may be in the future, but it is not for the present. It is up to us to understand how to go about doing it. So we have to start thinking again. That is my first comment.

Now if we start thinking again, then we find that we do not understand the concept of research anymore: that is the second problem. Because research has become a new profession, and the researcher is now a professional, but we don't know what kind of profession this is. They call it an innovation-producing profession, so that the researcher

is a 'producer of innovation'. But what is innovation? What is a 'producer of innovation'? What is his job definition? We do not know yet, so we have to define it. But do we really need to define it? Do we need this new professional known as a researcher, a researcher as opposed to a teacher, or a designer? The professions are proliferating: there are thousands of them now – well, not thousands, but last year I counted sixteen. I will not list them all, but they include "researcher" and "professional writer". Professional writers are not researchers, but they write books, articles, critiques, and so on; so this is a profession: the profession of "writer", on a par with the profession of "researcher" or "teacher", who in turn is not a researcher, or a writer, or a designer. Well, my plea is that we say 'enough is enough' with this proliferation of professions and I propose that we start putting these professions together.

Kees Doevendans, Eindhoven, The Netherlands

Any remarks?

Gunnar Porelius, Trondheim, Norway

I think that we need to start on a very basic level. There is some uncertainty about whether art, design, research, and science are all considered equally valuable activities as a basis for teaching. We talk about research-driven teaching, but not about art-driven teaching, although we should, I think, because in my opinion these two things are equally important. Art is searching for truth in some way, and we certainly need teachers who strive to find and fight for what is true both to art and to science. If we can agree on that, we do not need to talk about whether doing design or doing art is research or not, but we can just discuss them on equal terms as a valuable bases for teaching. And then, on the next level, you can have research based on true design, but that is pure research: it is not making art or producing valuable artefacts, but a means of gaining knowledge. That is a secondary question, however. What we first need to establish is that, as I said, science, research, art and design are all equally important to a good school.

Kees Doevendans, Eindhoven, The Netherlands

Thank you. Perhaps we can conclude our discussion with this, although I would like to respond to it, because when we talk about research we are not just talking about our schools. We are talking about research programmes, international programmes, networks, and not only about our schools. Of course our schools need art, design and research; but research is not just limited to the studio. Of course there is some research in the studio, but it is mainly for the purpose of teaching students, educating them in some generic skills to become academic professionals. And there is research in the schools, but it is not limited to the school. It is not concentrated in one person. I would like to be a researcher myself and take a sabbatical. So you cannot limit it to your school, I think.

Gunnar Porelius, Trondheim, Norway

Yes, but we are meeting here as Heads of European Schools.

Kees Doevendans, Eindhoven, The Netherlands

But a school is not isolated, it is not an island. We have to bring this session to a close now, so we will not do the exercise with the competences. In any case, we all have the questionnaires that have been distributed by e-mail, so we can work on them at home. Loughlin?

Loughlin Kealy, Dublin, Ireland

In a way, Kees, I think it covers to some extent what you were about to say. I would just like to take a step backwards in time and remind people that what we are engaged in here is an exercise of enquiry: it is not actually an attempt to define what research is and how we understand it. That is not the nature of the exercise we are engaged upon here. It is rather a process of trying to understand what research represents in the field of architecture, and for that reason we have created some questionnaires; but we need your responses if we are not going to keep on having the same conversation every year. So I just want to finish by asking people to please complete the questionnaires if they can, and let us try to move the discussion on one small step further.

Kees Doevendans, Eindhoven, The Netherlands

Thank you very much, Loughlin, for these wise words.

I started by speaking about the continuity. We started with Hania 2003, and how difficult it was to talk about research. We then we did some exercises, which may have improved things a little; but I want to stress this continuity, and the fact that it is also based on your filling out these questionnaires on competences, and then we can see if a working group, either the old group or a new one, can make a report on the results that can be sent to you. So please take Loughlin's wise words to heart and fill out the questionnaires, and send them to a lot of other teachers and ask them to fill them out also. Then we can try to make the discussion more precise in terms of competences; and, as Pierre Von Meiss suggested, we could also add some examples of how we teach these competences at the different levels, and in what type of courses. This could perhaps lead to a series of transactions, which would yield a kind of classification of competences, and within these transactions we could give examples of courses and projects where these competences are taught.

I would like to thank you all, and especially the members of the panel. Thank you very much, and I hope you enjoyed this session on research and that there have been some learning outcomes in it for you.