The power of communication in architectural education

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ABSTRACT: This article is about communication as a tool for architectural education, as well as an important part of the pedagogical strategy. Proper communication creates, in a democratic way, a shared, objective opinion, which respects individual points of view as a lasting value of the creativity process. Due to the fact that the education system in Slovakia is limited by insufficient investments, communication is a strong impulse for pedagogical direction. The goal of this article is to assess the different implementation approaches and strategies in the field of architectural teaching, in order to improve the level of educational processes with an emphasis on exchange of information - communication. A partial goal is to evaluate the different strategies of teaching in relation to the participants by means of communication.

INTRODUCTION

One may define communication as *…the process of information exchange between two social interaction parties, the one who sends the information (sender) and the one who receives the information (recipient)* [1].

Communication in the educational process of the university is a type of social interaction, which results in the exchange of information between teachers and students, and also includes exchanges at the international, inter-organisational and interdisciplinary levels. The methods and means of communication are influenced by the advancement of multimedia and other technologies.

According to the Czech architects' memorandum:

> *Education in architecture (in the cultural environment) leads us to grasp the complexity of the relationship between man and environment, respectively, leads us to understand the importance of sustainable development and responsibility for individual achievements and participation in shaping of the cultural environment* [2].

An integral part of the cultural environment is a public space, which enables communication between people and greatly affects their behaviour and conditions for social, cultural and economic activity.

The first study approach analyses international cooperation with foreign universities in Brno, Ostrava, Gliwice, Lisbon and Vienna, in the field of education (workshops, exhibitions) and research (conferences, publications); thus, creating an important basis for gaining new pedagogical knowledge.

Supporting student mobility, organising exchange exhibitions of students´ projects and contemporary architectural excursions, all have a significant impact on the motivation and open-mindedness of students. The studios, which facilitate common projects allow both teachers and students to compare their national differences and create a more open-minded view on a solution to a common problem. Cooperation between local and foreign teachers supports, then, the creation of new exchange mobility and workshops.

The second study approach investigates cooperation between organisations and local governments and determines its importance in the field of implementation and education. The urban and architectural topics of regions may be incorporated into the projects, studios and international grants. The result would, then, provide an implementation platform for students and provide specific research outcomes for regional development authorities. It can also enable students to work on projects that have a real use in practice.

The last study approach investigates the effect of interdisciplinary cooperation and integration of foreign students with local students, their collaboration, opinions and influences. This article analyses and compares the progressive pedagogical strategies for architectural education and determines its positive contribution. It takes into account the diversity of the architectural environment, which is related to a preference for visual perception.

INTERNATIONAL COOPERATION

The universities' reputation is particularly reflected in international communication at two levels: academic exchange and research. The educational process may be highly enriched by the integration of foreign groups of students and teachers with domestic groups. Working on common projects allows for both groups to compare their countries' differences and generates a more objective point of view on solved problems. Cooperation between local and foreign teachers then supports the creation of new exchange mobility and workshops.

The Faculty of Architecture at Slovak University of Technology in Bratislava (FA-SUT), Slovakia, acquired 46-active Erasmus contracts in May 2015. Cooperation between architectural universities is of great importance in the field of architectural education. In this context, the mobility can be considered to be a great benefit for diligent and hardworking students with good academic results. It is also an effective mechanism for the formation of social ties at the international level. Students' mobility has a comparative importance in the field of different pedagogical approaches, cultural and social interactions. In addition, it supports the personal growth of students, which represents added value for university education.

According to Prof. R. Špaček:

> *International studies have gained a certain kind of equality dimension in our country. In principle our students study abroad in English, German, French and foreign students are educated in our country in the same languages. That's one of the things that we have to somehow swallow, the Slovak language will never be lingua franca, but architectural communication doesn't depend only on its verbal form* [3].

An interesting educational experience at the Faculty of Architecture in Bratislava is the education of Greek students, which commenced in 2009. Great cultural differences and the language barrier were reflected in inconclusive results in the early years of the study, but the different *Mediterranean* views and approaches were translated into exceptional results in architectural studios in later years of the study - unmistakable *esprit* easily distinguishable from the Slovak students' projects. An effective method for architectural studio work is a workshop. International workshops often solve controversial topics. In 2013, such a workshop in Katowice, Poland was attended by FA-SUT students. They worked on various alternatives of converting an old burnt-out glass factory in a space, which was part of that factory complex, temporarily cleaned up for this purpose.

During March 2015, the Department of Public Building at the Faculty of Architecture organised an international workshop *Burnt SNG*. A controversy was based on an incongruity topic about the ability of function and space conversion. This approach made the workshop attractive from the students' point of view. A not very effective experiment was the on-line workshop with the Polytechnic University called *The Supermarket of Health - Outpatients Centres for Afghanistan Requirements*. The workshop was held as a videoconference, and was focused on the critical safety situation in Afghanistan. It was finished after three lectures and some consultations. The workshop failed on personal communication, which was not clear for foreign students and for specific regions was indispensable.

Interesting activities were teachers' mobility for professors from the University in Kabul; this project was led by Assoc. Prof. Veronika Kotrádyová [4]. Within the scope of the project, foreign professors participated in teaching Slovak students and compared different methods. In this context, it is worth mentioning the close cooperation with the Faculty of Architecture at the Silesian University of Technology in Gliwice. Work exhibitions for some students were held with the kind assistance of these partners. In the field of research, the Faculty an important cooperation with foreign universities in Brno, Ostrava, Gliwice, Lisbon and Vienna, realised through scientific conferences and publication activities. It makes a solid base for the generation of new knowledge in education.

This international involvement supports multidisciplinary fields, contacts, sources and inspirations. The creations of international scientific collectives and research grants stimulate impulses for teaching processes. At present time, it represents an important source of financing for the Slovak education system, which is suffering from insufficient investments.

INTER-ORGANISATIONAL COOPERATION

A second important point in cooperation for a university is contract with local government. The extent of this cooperation is determined by the implementation of scholarship and real educational submissions for students. According the memorandum of Czech architects: *Universities focused on architecture and urban planning do not interpose accent for attaching to and sharing knowledge with the public. Solution solving this problem is efficient cooperation with local government* [2].

Submissions prepared according to local governments' requirements should be involved in the pedagogic process and international grants tasks. This type of submission provides a platform for international projects. The results of special developments are highly important for local governments. The great advantage for students in this process is the real application of their work in practice. For example, a successful international project pursued at the Faculty of Architecture was the Regiogoes project [5]. It was a project of international cooperation on *creating the future*, which integrated local governments' requirements from Slovak and Austrian regions.

City mayors choose specific devastated areas, which need to be rebuilt according to the inhabitants' requirements. Such submissions are linked to the real ambient environment, which allow sufficient feedback from inhabitants. The student work results are available in print or electronic forms, therefore, fully reflect the university and local governments' requirements.

INTERDISCIPLINARY COOPERATION (BY USING MEDIA AND TECHNOLOGY)

Nowadays, architectural education is trying to expand its disciplinary limits into the fields of social, environmental, economic or technological point of interest. The pursuit of multimedia use in teaching supports the so-called *technological education theory*, which according to Bertrand is characterised by communication, computerised environment, interactive laboratories, hypermedia and individualised teaching [6].

The process of teaching and learning has been transformed by the Internet and communication technology, e-learning, virtual learning networks and the media. These new media inventions have changed the traditional schools into independent organisations; it diminishes political and geographical boundaries [7]. These IT benefits have been used especially for enhancement of the Erasmus programme, leading to project consultations and the final presentation with Prof. Lizon from the USA. Distance learning challenges the professional education of teachers, as well as the nature of their appointments and even the concept of schools, but it cannot substitute for the personal approach of teachers.

In this context, worth mentioning are the department of digital architecture experiments, led by Dr Vladimir Simkovic or experiments with 3D Oculus Rift used in APVV project (BCD Lab) Body Conscious Design Laboratory led by Dr Veronika Kotradyova. The architecture combining modern technology with traditions is disseminated in the academic and institutional context. The diversity of architectural approaches have transformed teaching, and schools' environment should respond to it.

The use of media in teacher education (positives and negatives of using virtual learning and communications):

- allows for interactive learning of large groups of students;
- allows for teaching at a distance;
- provides quick access to entirely new information;
- minimises repetitive mechanical and ineffective operations;
- results of student works can be accessed globally - feedback;
- digital processing, storage and transmission of information are readily transformable/alterable with respect to the progressive development in architecture;
- a wide range of education.

Risks:

- loss of identity of the student (in teaching through the media);
- students may become overwhelmed by the new knowledge.

New technologies, such as CNC milling cutter, 3D printer, allow students to present their architectural designs in the form of volumes from construction schemes to detailed models or their parts. In this way, students will acquire additional interdisciplinary knowledge and skills.

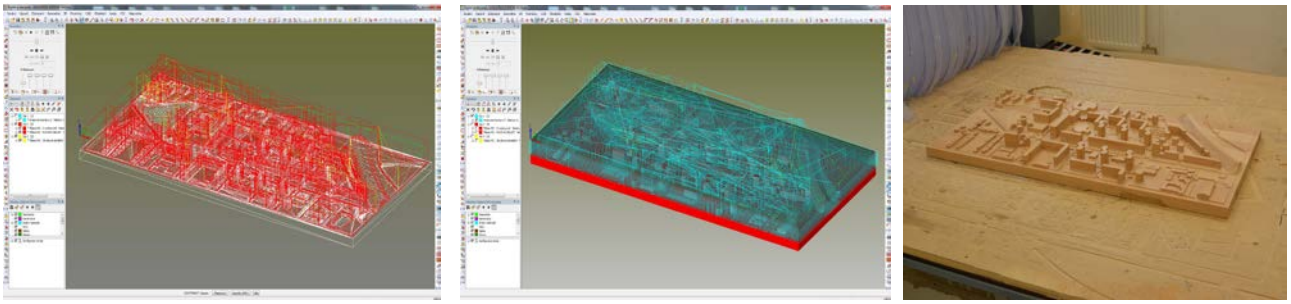

Figure 1: Photo of computer simulation and the resulting wooden model.

An interesting example was the cooperation of the Faculty of Architecture with the Academy of Fine Arts in Bratislava in the processing of an urban space model, which was a partial output of the mentioned Regiogoes grant. The Academy of Fine Arts held a process of CNC milling. With a multi-axis CNC milling cutter, objects may be prepared from various materials, including almost all kinds of plastics, polystyrene, lightweight metal and some wood species. The solution model was based on a computer simulation excise in oak wood (see Figure 1).

The use of new technologies in teacher education (requirements for teaching):

- needs appropriate technical and material background;
- requires the creation of organisational rules for the use of new technologies in the learning process (in terms of safety, durability of technology and machines);
- requires professional training of teachers to control the devices and technology (training); otherwise the classroom equipped with special technology becomes only the store space of equipment;
- requires technical staff (need for trained staff to operate the machine);
- requires cooperation with other professions, including knowledge of technology platforms and terminology;
- expert workshop mastering process, production models and prototypes, operation of digital devices, such as 3D printer, 3D scanner, CNC machines, etc.

CONCLUSIONS

Sharing of information and communication technologies, such as video presentations, computer simulations of urban environments, interactive presentation of architectural designs, requires systematic changes in teaching at universities. Visual media have also had an impact on changing the ways of communication and the ways of learning and thinking.

This article evaluates pedagogical strategies in teaching of studio work in terms of the social interaction methods at different levels (international, inter-organisational cooperation and interdisciplinary communication). The ways of communication ultimately shape the atmosphere at the university. As the Supplement to Domus document proclaims:

> *…The best schools connect with so many people, places and communities as they can do to provide an atmosphere where students encounter as many ideas and people as possible, often in unplanned and unpredictable ways* [8].

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