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QUALITY OF ARCHITECTURAL EDUCATION AT THE FACULTY OF ARCHITECTURE OF THE UNIVERSITY OF LJUBLJANA

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Abstract. The paper presents a study on the quality of architectural education at the Faculty of Architecture (FA) of the University of Ljubljana (UL) and the changes as a result of adopting the new rules, criteria and evaluation systems. In order to improve the quality of education at FA, we look at the indicators related to the data on student learning outcomes and the education as a whole. The formal data and the comparison of performance (quality) indicators between 2006 and 2012 are shown. Additionally, the basic scope of the Long-cycle Master's Study Programme in Architecture (MSPA) is presented in terms of content and mobility. The focus of architectural education at the UL FA, which includes practical, artistic and research work, and simulates work in the architectural studio, is on Design Studio course, which is directly complemented by the Architectural Workshop course. The work that includes both the individual approach and team work promotes connections among foreign and Slovenian students. Four cases in point are presented, confirming the significance of creative work within the courses of Design Studio, Architectural Workshop and Master Thesis.

Keywords: quality, design, design studio, architectural workshop, mobility, cooperation with the local community, Faculty of Architecture (FA) of the University of Ljubljana (UL), Slovenian Quality Assurance Agency for Higher Education (SQAA).

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Introduction

The focus of the study presented here is the quality of architectural education at the Faculty of Architecture (FA) of the University of Ljubljana (UL) and the changes occurring over the recent eight years as a result of adjusting to the new rules, criteria and study evaluation systems. The implementation of new study programmes, which were created as a consequence of the Bologna Declaration (1999), unfortunately closed off the Slovenian university space to the frames of individual faculties and thus kept the interdisciplinary[1] studies at a predominantly declarative level (Zavodnik Lamovšek, Foški 2012: 63). Similar to the term of interdisciplinarity whose contents reach into all fields of knowledge[2], quality is assessed by the elements that are becoming normatively determined and which have almost no relation with the notion of 'quality'. According to the

[1] From the Berlin Communiqué (2003): "Ministers are conscious of the need to promote closer links between the European Higher Education (EHEA) and the Research Area (ERA) in a Europe of Knowledge, and of the importance of research as an integral part of higher education across Europe /.../. The Ministers emphasise the importance of research and research training and the promotion of interdisciplinarity in maintaining and improving the quality of higher education and in enhancing the competitiveness of European higher education more generally."

[2] "Exceptionally interdisciplinary content, which is such by its nature, is found in spatial management /…/. In this field of work, the paradigm of sustainable development is embedded in its concept, and for this reason it is one of the most suitable interdisciplinary study approaches /…/. The contents of sustainable development, spatial management and spatial planning are namely closely connected to the knowledge and skills of numerous fields and areas, which are more or less closely connected with space. The areas related to space, its characteristics and development, as the main interest, are spatial planning, architecture, landscape architecture, geography, geology, civil engineering (a structural engineer, a civil engineer, a municipal engineer, water management engineer ...) and geodesy." (Zavodnik Lamovšek, Foški 2012: 63).

rules of the Slovenian Quality Assurance Agency for Higher Education (SQAA) "quality assurance in higher education means the entirety of policies, procedures and practices required for achieving, preserving and constant promotion of the development of quality in higher education system, higher education institutions and study programmes and higher vocational colleges" (Širok, Debevec 2013: 3). However, what is on paper easily understandable and clearly directed into promoting better and advanced study programmes is in practice, i.e. in the education process, causing many problems. Mainly, this is not because of the 'quality' of content – as the content is, in fact, left to the self-evaluation of the institution, i.e. to the faculty and its actors – but due to the rules of assessment, procedures[3] of coordination, restrictions to flexible implementation and mobility, introduction of change and contemporary ideas that should be very responsive and adapted to modern times and society, while often, in practice, they die out or are replaced by new ones while the validation by relevant bodies is still on-going. The assessment of the quality of education at the Faculty of Architecture is time and again facing the problem that the existing criteria in higher education – which, generally, emphasize scientific and research work – are not necessarily suitable in architecture (Vodopivec, Gabrijelčič 2013: 4).

Quality and education at the Faculty of Architecture of the University of Ljubljana

At the UL FA, the improvement of quality is achieved using the mechanisms that are in line with Articles 3 and 4 of the Rules on the system of quality monitoring and assurance of the University of Ljubljana (2008) and the Rules on assessment and quality assurance at the University of Ljubljana (2000), which is achieved with the following activities: annual planning and reporting, annual self-evaluation[4], accreditation of study programmes, training of teaching and professional staff for quality work, tutoring system, library information system, extracurricular activities, quality assurance of research work, transfer of knowledge into practice, survey among students, international cooperation, international connections, university awards and other awards etc. For improvement of quality of architectural education at the UL FA, we are looking at the indicators that are expressed as the data on student learning outcomes and the education as a whole (Table 1, selection of indicators).

Table 1 gives some formal data on the implementation of the relevant items and a comparison of performance (quality) indicators between 2006 and 2012 (the analyses look at the year of study, student generation and the entire study programme once each year within the self-evaluation report). The most relevant data were captured for the two periods, i.e. when the accreditation of the study programme in architecture was completed (Long-cycle Master's Study Programme in Architecture, MSPA; the data refer to undergraduate studies of architecture only) according to the Bologna system (in academic year 2005/2006), while in 2012 the re-accreditation process of the same study programme was launched (academic year 2011/2012). The comparison shows a gradual rise in almost all indicators. In the teaching process, the factor "integration with the environment" saw the greatest rise, which is, after all, very significant and encouraging for architectural education. Notably, this leap is the result of the activities of individual teachers and their volunteer work reaching beyond the normative framework of education (more on this in section 'Case examples showing a direct connection between creative, experiential work and interdisciplinarity'). In international activities and mobility, the number of incoming international students continues to grow, while the number of FA outbound students has levelled off. In relation to international activities, it should be noted that international research projects were most abundant in the two years that were

[3] Since the founding of SQAA, the first accreditation of a study programme formally takes 6–7 months after submitting a complete application. In practice, this means approximately 2 years after the initial preparations to formalize the format, i.e. from the moment when the content of the study programme is clear. According to a SQAA assessment, the extension of accreditation takes more than 8 months. In practice, if there are no special problems to be addressed, this takes 16 months. The procedure of confirmation of changes or amendments (minor changes, Criteria for accreditation ... SQAA 2010, Article 54) of a study programme until 2012 (obligatory confirmation at SQAA) took 6 months. Since 2012, the confirmation of minor changes has been the responsibility of the University, and the changes are communicated to the SQAA; thus, the procedures take about 2 months if there are no particularities). Significant changes are considered as a form of re-accreditation of the study programme. The syllabus for the next academic year is announced in May of each year. This means that in case of novelties of formal significance, the affirmation procedure of these changes should be finalised at the Faculty (Senate) no later than in March. This also means that the initial idea about "novelties" (if they formally do not surpass the framework of small changes) for the next academic year should be proposed one year in advance.

[4] UL and its members have monitored their activities and analysed the efficiency of the studies for more than 30 years. After 2000, quality assurance reports included educational and research activities, issues of organisation, basic work conditions, infrastructure, research and teaching staff, student activities, cooperation with users and international cooperation and, separately, they addressed the issue of quality assurance. In 2007, the Quality Assurance Commission of the UL proposed the merging of previously separate reports on quality and the annual (business) report. In its 2006–2009 strategy, UL set out the goal to connect the "quality system with the system of planning, reporting, awarding and management".

Table 1. Quality and monitoring of basic indicators at the UL FA, comparison between academic years 2005/2006 and 2011/2012

	academic year 2005/2006	academic year 2011/2012	notes:
1 TEACHING PROCESS IN UNDERGRADUATE PROGRAMMES – LONG-CYCLE MASTER'S PROGRAMME OF ARCHITECTURE			
1.1 Number of students	928 full-time + 44 part-time	1105 full-time + 114 part-time	increase in enrolment
1.2 Proportion of foreign students enrolled	2%	2%	proportion of enrolment places available for foreign students remains the same, while demand continues to increase
1.3 Retention rate	88%	90%; retention from year 4 to year 5: 65%	retention rate is high due to part-time students
1.4 Duration of studies	8.72 years on average	8.00 years	full-time studies take 5 years (10 semesters) + additional graduation year (Slovene: absolventski staž)
1.5 Number of graduates	100 in University Studies	102 in University Studies and 54 in Long-cycle Master's Studies	data provided for calendar year (2011), not for academic year
1.6 Integration with the environment	no data available, 30 different activities estimated	more than 80 different activities	workshops, competitions, projects, consultation sessions, meetings, excursions, conferences, newsletters, journals ...
2 INTERNATIONAL ACTIVITIES and MOBILITY			
2.1 Agreements and contracts	30 bilateral Erasmus agreements	62 bilateral Erasmus agreements	despite the increase in agreements with foreign institutions, the number of outbound FA students has levelled off
2.2 Outbound FA students	41	46 + 6 practice placement	
2.3 Incoming students to FA	21	54	interest in completion of studies at FA (particularly from SE European Countries)
2.4 Proportion of teachers and researchers in the Erasmus exchange programme	7	7 + 7 guest teachers/researchers at FA	the number of guest teachers/researchers has increased due to participation in other, non-formal types of cooperation
2.5 Courses held in a foreign language	90% of the study programme	90% of the study programme	the EMŠ in Architecture has been accredited as a Slovenian programme
3 HUMAN RESOURCES			
3.1 Changes in indicators of human resources	no changes	9 retirements, 3 new teachers	retirement scheme according to ZUJF
3.2 Average evaluation of teachers in student surveys	no data available	+2.3 (evaluation from –3 to +3)	changed assessment scale; survey results are not publicly available
3.3 Promotions	4	12	data by calendar year (2006, 2012), not by academic year
3.4 Proportion of teaching performed by practising professionals	no data available	6.6%	inclusion of the industry/economy into the teaching process
4 RESEARCH			
4.1 Number of international research projects	6	8	ties with enterprises and other institutions; contact with advancement of innovations
4.2 Number of scientific papers in registered databases	52 in Slovenia and 6 abroad	53 in Slovenia and 19 abroad	connection of practice and research
4.3 Number of scientific monographs per teacher or scientist	9 in Slovene, 1 in a foreign language	3 in Slovene, 1 in a foreign language	younger staff who are introduced into research work
5 LIBRARY AND PUBLISHING ACTIVITIES			
5.1 Total number of library users	1,649 active members	1,700 active members	after the completion of studies, library membership is no longer active
5.2 Common library stock	20,091 items	20,615 items	continuous additions of new stock
5.3 Interlibrary loan service	81 items of library stock forwarded	53 items of library stock forwarded	–
5.4 Management of bibliographies	413 entries to the COBISS database	812 entries to the COBISS database	monographs, papers, conference articles and executed works
5.5 Publishing activities	no data available	28 new publications	encouragement of electronic publishing
6 INFORMATION SYSTEM			
6.1 FA website	complete redesign of the website in 2005	start of FA website redesign	redesign of the shape, image and way of operation as a web office; first FA website created in 1998
6.2 Moodle virtual classroom	web-hosting at FGG	independent classroom on the FA server	support to the educational process and record keeping: ŠIS – electronic student's transcript (Slovene: indeks)
6.3 Business and human resources information management	operation of relevant systems	operation of relevant systems	continuous upgrading of systems
6.4 Connectivity of information systems	no connections	direct exchange between FRS, ŠR and the library	continuous upgrading of systems
7 STUDENT SERVICES			
7.1 Tutoring	student/tutor coordinator	teacher (tutor) coordinator	reorganised tutoring
7.2 Student board	no data available	10 council members	–
7.3 Extra-curricular activities	excursions, visits, workshops	excursions, visits, workshops	continuous increase of activities; a week of field exercises and excursions
7.4 Presence in FA organisation bodies	in 70% of FA management bodies	in all FA management bodies	in the Senate, UO, Quality Committee, KŠZ and other work bodies
7.5 Status of students with a disability	no data available	5 students	adjustments during lectures and exercises and/or the way of testing and assessment

FA – Faculty of Architecture
FGG – Faculty of Civil and Geodetic Engineering
EMŠ – Long-cycle Master's Study Programme (5 + 0)
COBISS – Slovene Co-operative Online Bibliographic system and services
ŠR – Student Affairs Office
UO – Management Board
KŠZ – Academic Affairs Commission
ŠIS – Student Information System
ZUJF – Fiscal Balance Act

Note: in 2005/2006 some data were not yet monitored, while other data were not publicly available due to data protection, but were already being compiled, e.g. student surveys; depending on the indicator, some data were captured for the calendar year, not the academic year; most data are after Bonča *et al.* (2012), Vodopivec, Gabrijelčič (2013).

selected for comparison. As can be seen, the indicator of "Research" is the weakest link in the operation of the UL FA. The indicators of "Human resources" show considerable changes that were introduced at FA in 2012 and are related to the "lowering of the average age of staff". "Library and publishing activities" and "Information system" confirm the good support and stability of the modern-day adjustments to the environment and educational needs. The indicator "Student services" shows how the students are becoming a part of the faculty, helping to create its image and impact the changes and improvements of the study programme.

In the framework of its education, the UL FA has a clear vision of implementation and pursuit of quality, which is reflected in the achievements that the FA will continue to pursue in the future:

- Shortening the length of the studies (to prevent the students to lose contact with the faculty, study process and mentor/tutor) – as indicated by indicator 1.4 in Table 1.
- Additional education for architects (advanced education and an informal type of life-long learning) and connection with the studies – as indicated by indicator 1.6 in Table 1.
- Additional lectures of renowned architects (guest lectures, project presentations by project designers; field visits of new executed projects) – as indicated by indicators 1.6, 2.4 and 2.5 in Table 1.

The aforementioned achievements to be followed are best expressed in the following activities of architectural education, which have the most impact on the quality in the sense of learning to do "good architecture":

- final student exhibitions as part of Design Studio (overview of work in the course with different teachers and comparison of results),
- building of a school in the South African Republic (international recognisability of FA),
- establishment of a permanent constructive dialogue between teachers and students (continuation of student roundtables),
- successful connection with practice, each year supported by more than 20 successful urban planning and architectural workshops,
- student exchange at UL through elective courses (connecting the content of different professions among students),
- FA educators are successful professionally; they are continuously winning competition awards, and professional domestic and international awards. They also work as reviewers or board members for distinguished professional international awards in many European countries,
- student mobility within the Project Design course (mix of different forms of work and creation, critical assessment of foreign students),
- engagement of students in different international activities (comparison of study programme quality through student activities in different international competitions, workshops etc.),
- interest in, and applications to, Erasmus student placements (increase of student activities in the international environment in practice),
- one of the most important novelties is the tendency to connect the content of different courses during exercises. This is reflected in the form of a comprehensive approach and inclusion of interdisciplinary content where all knowledge is combined in a full-year project in the Design Studio course.

The educational focus of MSPA

In Slovenia, MSPA offers a relevant format of a multi-disciplinary educational approach in the field of architecture, connecting the fields of technical engineering, and design and art. Hence, it represents a good starting point for development of the profession and, as a result, an efficient solving of specific problems in the practice. Unfortunately, the Bologna reform closed off the Slovenian higher education to the domain of individual faculties, and thus kept the interdisciplinary approach to the studies at a predominantly declarative level; indeed, MSPA (Table 2) could suffer a similar fate. However, the system of studies at FA has been designed in a way to enable the connectivity with other institutions and study programmes, i.e. with the delivery of upgraded study courses (and elective courses) and through student and teacher mobility. Importantly, the changes have not remained at the declarative level – efficient formats of interdisciplinary[5] learning have been implemented, which are particularly evident in Design Studio in Architectural Workshop courses.

The focus of training in architectural education at the FA, which includes practical, artistic and research work, and simulates work in the architectural studio,

[5] The principles of interdisciplinarity are introduced through the following forms of work (Ivanitskaya *et al.* 2002; cf.: Marentič Požarnik 2010): Student group work, especially co-operative learning; Interactive classes which include dialogue, discussions and debates; Discussions in form of 'for and against', "brainstorming" and "aquarium"; Project study work; Role-play and simulation; Participative games; Indirect experience with active visits to different areas and spaces (also Richardson, Friend 2006); Conducting studies in connection with different environment and social groups (neighbours, local community, businesses, various associations and organisations etc.) and in connection with the faculties of other graduate schools (even internationally); Use of the information communication technology (ICT).

Table 2. Changes in education of architecture at UL FA and the key elements of the study programme

title of study programme	year of implementation	formal structure	content structure	introduction of novelties	non-formal novelty elements	key study courses	study practical training	mobility
University Study Programme in Architecture	amendments in 1989	4,5 years; compulsory contents: 180 ECTS, 67% elective contents: 90 ECTS, 33%	osnove: 1.–4. semester poglobitev: 5.–9. semester zaključno delo: absolvent	concentrations (majors) in year 4: architecture, urban planning, design	within the course of Design and Composition 4 (all concentrations) elaboration of architecture design projects	Design and Composition (1, 2, 3, 4, 5) and graduation work		mobility was not so usual; increase of it from the year 2000; mobility bettwen faculties of UL as a part of study programmes was not part of rules
Long-cycle Master's Study Programme in Architecture	initial accreditation in 2006 (academic year 2005/2006)	300 ECTS; 5 years; compulsory contents: 224 ECTS, 75% elective contents: 76 ECTS, 25%	osnove: 1.–4. semester poglobitev: 4.–9. semester zaključno delo: 10. semester	courses Architectural Workshop 1, 2 and 3	introduction of many elective courses	Design Studio (1, 2, 3, 4, 5), Architectural Workshop (1, 2, 3), Master's Thesis	8 ECTS – 3%	student can a semester (max 2) of study transferfrom any of the programmes from the fields of architecture; mobility is also required according to the rules of UL – 5% of elective subjects from different faculty
Long-cycle Master's Study Programme in Architecture	entry record (for SQAA) in April 2012	no changes	no changes	–	commission assessments of courses and projects in Design Studio; new work groups, connections with the industry	no changes	no changes	no changes
Long-cycle Master's Study Programme in Architecture	extension of accreditation in June 2013 (since April 2012)	no changes	no changes	–	no changes	no changes	no changes	no changes

Notes: Formally, the programme is similar to the one before the Bologna reform, i.e. no major formal changes have been introduced in the last 8 years due to the accreditation process (major changes are not allowed; SQAA, Article 54, Rules for accreditation and external evaluation of higher education institutions and study programs). Basically because the MSPA at FA is still organized as a unified programme (5 + 0).

is the Design Studio course (in study years 1–5). The work in the Design Studio course is highly influenced by the work outside school, i.e. professional and extracurricular, which builds a young person's point-of-view: field work, site visits, seminar excursions, visits of architecture projects, visits and cooperation in exhibitions, roundtables, professional meetings etc. The Design Studio course in the different study years is directly complemented by Architectural Workshop 1, 2 and 3, where the individual mentors typically arrange, directly with a potential client, a several-day visit at a site and field work. Next to the teaching process on the FA premises, the cooperation with local communities in the form of living and field experience and direct contact with inhabitants is important. The "local" mobility goes hand in hand with the mobility of foreign students, as all current Erasmus exchange students at the FA are included into this type of work.

Design Studio

The Design Studio course, commonly referred to as the "Seminar", represents the backbone, i.e. the realisation of architectural studies. Within the seminar, the students who are assisted by the mentor and assistants, technical collaborators and invited professionals get to know the principles and procedures of design, and project approach to planning and designing architecture and urban design. Using a methodological approach, they learn how to overcome the fear of the blank page, where to start and how to complete a task, how to identify and define problems and how to solve these problems using theoretical and practical knowledge.

In working on a real project, the student deals with architectural, functional, technical, environmental, social and other issues of building. The subject is adapted to practical challenges and needs, thus substituting routine academic work with emergent new, vital and timely forms that are responsive to social and spatial issues. In the final project the student learns how to integrate essential building properties, such as mechanical resilience and stability, safeguarding hygiene and health, safety and energy preservation[6]. During

[6] The elements are in compliance with the principles of Construction Products Regulation (EU) No 305/2011 (CPR) which repeals the Construction Products Directive (EU) No 89/106/EEC (CPD).

the studies, the student work in the Design Studio course evolves with increasingly growing demands, and is upgraded and finalised in the Master Thesis. The Master Thesis includes the subject matters that help the student to reach the goals and competences of architectural studies: the theoretical and practical aspects of urban planning and design, mastering methods of planning and knowledge of basic legal aspects of spatial management, the basics of action planning and strategic evaluation, the basics of communal and housing economy, and an in-depth knowledge of the operation of the public sector, from the government level to local communities to corporate public services, knowledge and mastering of urban design techniques, planning and design, and knowledge of basic project management and quality control.

Architectural Workshop

At the UL FA, student urban design and architectural workshops have had a tradition of more than 40 years. First, the workshops were organised in the framework of study seminars at the local level with individual teachers at the Ljubljana School of Architecture. Already in the early 1980s, Professor Edo Ravnikar organised the first five international workshops in cooperation with the architecture schools in Trieste, Graz and Vienna (Gabrijelčič 2010). Organised by the UL FA, several hundred domestic and foreign students and many teachers from mostly western countries participated in these first international workshops. For the first time in Slovenia, next to the learning opportunity, the students had the opportunity to address real spatial problems and were offered the possibility of international exchange and comparison. Based on these positive experiences, the Slovenian ministry responsible for the environment and spatial planning paid great attention to these workshops.

Within the study programme, the students are each year included in different urban design and architectural workshops. Importantly, students of different years and study programmes (architecture, urban design, spatial planning, landscape architecture etc.) are included in the work and education. In this way, the work by the students of architecture is enriched by knowledge from other fields. The student workshops address real professional questions, set up dialogue between professions, expand contacts among domestic and foreign universities, transfer the knowledge of foreign experts to the domestic professional environment and, last but not least, establish durable professional and personal ties and, on this basis, shape a common cultural awareness about the meaning of a planned environment (Gabrijelčič 2010: 151). As a result of the many actions involving workshops, in 2012 the UL FA published a scientific monograph (Gabrijelčič, Fikfak 2012). Starting in 2013, based on the success of the monograph, the first issue of a new journal "Creativity game (CG) – Theory and Practice of Spatial Planning" will be published, representing the results of professional work, teaching and scientific research, which, by using creativity and abstract thinking, culminate in a continuous flow of experiential learning about spatial values and the related processes.

Mobility and Erasmus exchange

Within the Erasmus Programme, the UL FA has signed several agreements with universities abroad, and the number continues to grow. Within the capacity of FA operations and workload of teachers, we strive to give opportunity to anyone who wants to obtain architectural knowledge at our institution, and no candidate is rejected. In 2011/2012, there were 54 foreign students (see Table 1), and in 2012/2013 the following applied: winter semester: 64 students taking the Design Studio course, mostly study years 3 and 4; the Erasmus students cannot enrol in the Design Studio course in the summer semester, as this is a full-year course, except in year 5. We feel that with the current number of foreign students sustainability can still be kept; however, due to the specifics of working with foreign students, an uncontrolled increase in the number of foreign students could negatively affect the quality of the study process.

The nature of the Design Studio course enables an overlap with the work within the so-called seminars, along with a comparison of domestic and foreign work methods and exchange/confirmation of international experience. Each year, several guest teachers are included into the teaching process, while there are three foreign citizens on UL FA permanent staff.

The work, using both an individual approach and team work, encourages connections between foreign and Slovenian students, while at the same time this enables an organised exchange of information between students who have had experience with the exchange and those who are thinking about taking part. The exchange is realised through exhibitions and lectures given by students.

Case examples showing a direct connection between creative, experiential work and interdisciplinarity

In the continuation, four different cases are presented which confirm the significance of creative work within the courses Design Studio, Architectural Workshop and Master Thesis. The content of the course is important, but equally so the commitment of the lecturer

and how the course is taught. This is best illustrated on the case of building a school in the South African Republic (section 'Building a school in the South African Republic'), which doubtlessly goes beyond the education format prescribed in curricula and accreditation forms and norms; however, this type of work is necessary for constant advancement of education and knowledge in architecture and, most importantly, for continuous improvement of the quality of content of architectural education.

Building a school in the South African Republic

In 2010, the UL FA joined the international network for the construction of educational buildings in developing countries, initiated by the Austrian SARCH[7] foundation. Within the network, the students from various European schools of architecture – TU Wien, TU Graz, Kunstuni Linz, FH Kärnten, RWTH Aachen and TU München – have in the past decade designed and, together with the local population, built several school buildings and kindergartens in different parts of the South African Republic (http://www.saip.si/; see Fig. 1).

In autumn 2010, the students and mentors of the UL FA built a library with a classroom in the school complex Ithuba Skills College (school which places emphasis on teaching manual skills, founded by SARCH in 2006). The school is located outside the Magagula Heights Township, a poor shantytown for black population south of Johannesburg (Vodopivec *et al*. 2011). 20 senior students participated in the project, led by four mentors, over a period of the full academic year. In the first semester the students got to know the country, its history, culture, art and geographic, economic and social features, while in the second semester the focus was on project preparation, practical workshops and collection of funds for construction and the building itself. In mere eight weeks, the students and the local population built the building from foundation to the roof, including all equipment. The concept of the construction is an attempt of a contemporary interpretation of the traditional way of construction in Africa, with walls made of clay and straw. The team of mentors who supervised the work and execution of the projects is as follows: Prof. Aleš Vodopivec, Ph.D, Assocc. Prof. Tadej Glažar, MSc, Assist. Prof. Anja Planišček, MSc, and Assist. Josip Konstantinovič. A similar principle of preparation, planning, work and on-site construction was used when building a multi-purpose hall (2011).

Case of the international architectural and urban design workshop "Visions, scenarios and concept of spatial development of the Šmartinska Street corridor, with an emphasis on transport and architectural design of the Šmartinska Street as a city boulevard", 2006

During the construction of the Ljubljana northern by-pass and East motorway, great development opportunities emerged in East Ljubljana. However, the Ljubljana City Administration had no proper spatial development vision or policy in place that would help direct individual interests and activities. During the urban planning and architectural workshop, an opportunity arose to connect theoretical and practical knowledge of different professions (also with the help of participants from abroad) on the real case of making a sample project of a new city boulevard. This was also an opportunity for experts from different institutions to practically test or illustrate their working hypotheses (Gabrijelčič 2010).

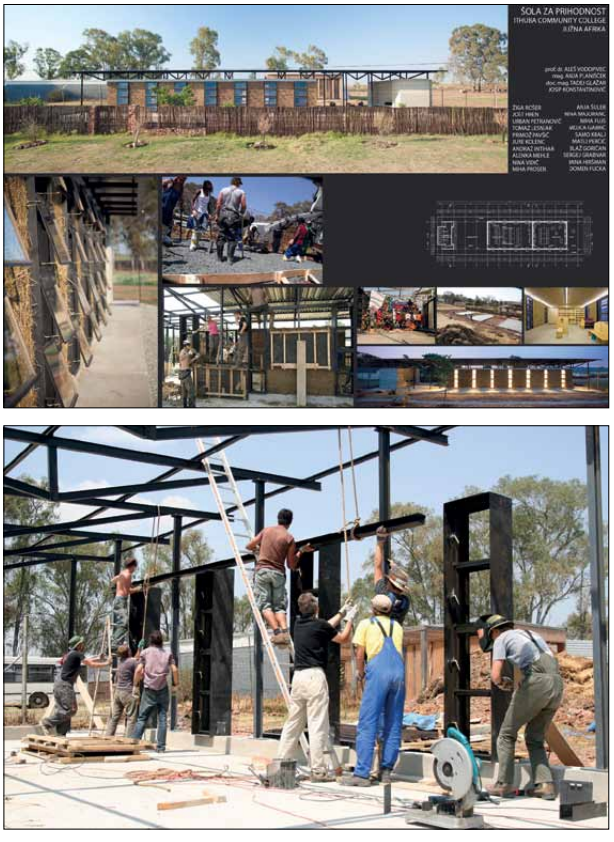

Fig. 1. A school for the future. Ithuba community college South Africa. *Source:* Vodopivec *et al*. 2011.

[7] "In 2003, Christoph Chorherr, an environmental economist, politician and long-standing spokesperson of the Green Party in the Austrian State Council, founded the SARCH foundation (Social Sustainable Architecture), supported by the City of Vienna, aiding socially disadvantaged groups in South Africa. Many Schools of Architecture from Austria, Switzerland and Germany decided to participate. Under mentor supervision and in cooperation with local inhabitants, the students from the architecture schools have in recent years built several buildings for children, i.e. kindergartens, school classrooms, centres for disabled children etc. in the poor shantytowns (so-called townships) in the suburbs outside Johannesburg" (http://www.saip.si/).

Fig. 2. Modelling and searching of different ideas and visions. *Source:* Gabrijelčič, Fikfak (2012).

The first part of the workshop focused on the elaboration of different development scenarios related to the programme and spatial planning of the Šmartinska Street corridor (Fig. 2). The second part addressed the problem of transport and architectural design of the new city boulevard with a link to the east motorway. The mentors, i.e. professionals (project team leaders), and the students prepared four development scenarios. These were professionally elaborated using different methods, such as: projections, location theories, models and simulations of urban development, drawing up scenarios, urban games, SWOT analyses, Delphi method, brainstorming, roundtables etc.

The results of the workshop comprised a textual representation of the problem, description of the concept and graphic representation with relevant mapping. The work covered interdisciplinary aspects that were topically connected with the fields of spatial planning, transport, urban planning and architecture. Based on the conclusions of the international student workshop, an international competition entitled "Partnership – Šmartinska" was announced in 2008.

Awarded master work

The graduation work "Study of urban design of densification and gentrification of a residential neighbourhood – the case of Galjevica in Ljubljana" (Kušar 2012; see Fig. 3) is a result of architectural and urban design creativity. The paper is a mix of understanding and elaboration of the problems of different areas, including technical knowledge and knowledge of fine arts and aesthetics. The author's work is versatile and opens knowledge in different work areas: sociological, economic and spatial rules of the investigated area, connecting the said problems in a model of densification of freestanding single-apartment units with an accessible price range. The multi-layered thinking about the interventions into the built environment follows the principle: How should the symbiosis of benefits of the existing and new inhabitants work?

Based on the set goals, the executed cases help to design a model of densification that is adapted to Slovenia. The review of a simple theoretical spatial model was followed by a workshop simulating the planning process, in the framework of organized work with the inhabitants of a chosen street in Ljubljana. The urban and architectural concept of densification with wooden prefabricated modular units (Modeko system) follows the basic concept of street planning, in a way that it was designed by the participants at the workshop. Based on the architectural plans, a cost-effectiveness analysis was made.

The work was awarded the highest Slovenian university award, i.e. The Prešeren Award of the University of Ljubljana for students for 2011/2012. The work was

Fig. 3. Symbiosis of existing and new inhabitants. *Source:* Kušar (2012).

also presented at a scientific conference "Smart urban planning: innovative approaches to urban planning and design", on 14 June 2012 at the UL FA.

Installations at the FA halls

Creativity is considered more important than productivity, whereby the latter is the result of the former (Mulej *et al.* 1994). It is often confused with originality, which is not the same, nevertheless, it is its constituent part, (...) however, creative things are more than just original (...) (Guštin 2007). Creative and experiential learning and work help us to build values, skills and knowledge with everyday work and social experiences. Independent and creative experimental research work, intertwined with experience, is irreplaceably complementing complex and/or general knowledge.

Here, three "creative" experiences are briefly presented (Fig. 4). The first part of each workshop[8] was carried out in the form of an interactive information exchange via a social network, i.e. by e-mails between the students and the mentors. Initial preparations asked for an active collection and consideration of information, and an opinion about the information. In order to realize the idea of spatial composition, the key issue was to find the appropriate place (FA premises) and time (limitation to three days of active work). An additional restriction was manual work without the use of a computer, and minimum costs with the possibility of recycling the material already used.

Workshop 1 (December 2010): material – Kappa foam board; triangle as the chosen shape; review of stacking basic, unequal shapes; jointing triangles and checking of shape properties; mounting of a spatial installation at the FA corridor; lighting; 3D composition.

Workshop 2 (March 2011): material – old advertising material; folding paper into tubes, stacking of shapes and/or clipping the tubes into a surface, the basic module; elaboration of a 3D composition of a room; finalisation of the "leisure room"; its lighting, finishing and chair design as an element for observation of the paper structure.

Workshop 3 (April 2013): material – white plastic cups; clipping of elements into curves; stacking and folding of surfaces into a composition; making a 3D composition of a room; finalising the composition of a "leisure room"; shaping the ambient and the individual elements, circle, observation of structure.

The strengths of such an approach to work are two-fold. Firstly, they are related to the teaching and learning process that connects all participants into an interactive group of cooperation, dialogue and work, culminating in a spatial installation. Such teaching and learning approach is already part of the curricula of some courses; however, the implementation varies depending on the problem and goals set. Secondly, the strengths relate to the goals of the teaching process, i.e. trying to familiarize the students with new materials, their properties and possibilities at hand.

Fig. 4. Final model: Elements, materials and shapes – shaping the ambient. *Source:* Fikfak (2010, 2011, 2013); photo: workshop participants.

[8] These spatial planning workshops involve activities that build on enthusiasm, free selection and volunteerism which go beyond profession and are unpaid, which is without doubt /…/ the underlying modern format of personal solidarity of social commitment in any environment (Frkač 1996: 335), including the academic one.

Conclusions

In the first stage of reorganising the FA study programme of architecture into MSPA, using the "standardised" format, the unwanted effects of the Bologna reform have put the stability of the study programme at risk, particularly due to the rigidity of the system and incapability of continuous introduction of change (as prescribed in Slovenia by SQAA). Finally, let me emphasise the relationship between the administrative effects of change (quality evaluation of the education and the Bologna system) and the delivery of the study programme as an interdisciplinary creativity. The latter effects, in particular, are not negative. On the contrary, the implementation of MSPA has proven that the interdisciplinary creativity is feasible despite the reform; we want to keep these approaches and upgrade them with even more up-to-date formats of the teaching process:

- *The quality of architectural education* is reflected in work outcomes that go beyond the indicators of quality. The cases described in section 'Case examples showing a direct connection between creative, experiential work and interdisciplinarity' support this assumption. In architectural education, the quality and commitment of the educator, mentor, work group and participating experts are of utmost importance; they are led by the desire to study the unseen, the unknown and the new. Looking at the quality assessment indicators (Table 1), we find that the study programme and institution do not offer the same aspect of creativity as the one created by individuals.
- *Changes introduced under the Bologna system.* In the university study programme of architecture at the UL FA before the Bologna reform, the connections between architecture, design and urban planning presented a great advantage. In MSPA, these connections have been reduced; they remain flexible only in the delivery of elective courses. At the UL FA, we are trying to preserve these subject matters by introducing a new education of urban planning and design (a new study programme) that would also include many contents included in the study programmes of architecture. This would recreate the integration of two types of spatial content that are, in fact, inseparable and complex each on its own, and thus necessary when creating a quality of living. The manner of delivery is important, as the fundamental courses, Design Studio and Arhitectural Workshop, are carried out in the same place as the Urban Design course, and include the principles of interdisciplinarity through group work and participatory learning.
- *Creative learning.* Creativity and experiential learning are inseparably linked, whereby the inclusion of the individual person into the experience, thinking and group cooperation is vital. Architectural workshops are the platform that opens new visions and exposes spatial and structural change (not only solutions); for the understanding of built and/or natural environments the right way of thinking and work process is necessary, i.e. as a by-product of experiential learning. Indeed, this form of work is necessary for development of understanding in students and teachers, and the dialogue among them (and within a group).

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