

STUDY

////////////////////

Questionnaire for the State of the Art

in educating sustainability and heritage

EDITORS

VLADAN DJOKIĆ
KONSTANTINOS SAKANTAMIS
ANGELIKI CHATZIDIMITRIOU
EMANUELA SORBO
MAR LOREN-MENDEZ
ANA NIKEZIĆ
MARIA PHILOKYPROU
MARÍA F. CARRASCAL PÉREZ

O2 INTELLECTUAL OUTPUT

Output type: Studies / analysis – Questionnaire development and survey implementation

PARTNERS:

The University of Belgrade - Faculty of Architecture // Serbia
Università Iuav di Venezia // Italy
The University of Cyprus // Cyprus
The Aristotle University of Thessaloniki // Greece
The University of Seville // Spain

**Enhancing of Heritage Awareness and
Sustainability of Built Environment in
Architectural and Urban Design Higher Education**

2021



CONTRIBUTORS: phases of conceptualization,
dissemination and analysis:
HERSUS CONSORTIUM MEMBERS

UB-FA

Vladan Djokić
Ana Radivojević
Ana Nikezić
Jelena Živković
Nataša Ćuković Ignjatović
Milica Milojević
Jelena Ristić Trajković
Aleksandra Milovanović
Aleksandra Đorđević
Mladen Pešić
Ana Zorić
Bojana Zeković
Nevena Lukić

IUAV

Emanuela Sorbo
Enrico Anguillari
Sofia Tonello

UCY

Maria Philokyprou
Aimilios Michael
Panayiota Pyla
Odysseas Kontovourkis
Maria Nodarakis
Theodora Hadjipetrou
Stavroula Thravalou
Andreas Savvides

AUTH

Konstantinos Sakantamis
Alkmini Paka
Kleoniki Axarli
Maria Doussi
Angeliki Chatzidimitriou
Sofoklis Kotsopoulos

USE

Mar Loren-Méndez
Marta García-Casasola
Daniel Pinzón-Ayala
Julia Rey Pérez
José Peral López
María F. Carrascal-Pérez
Enrique Larive
Roberto F. Alonso-Jiménez

IMPRESUM

EDITORIAL BOARD:

Vladan Djokić, Konstantinos Sakantamis
Angeliki Chatzidimitriou Emanuela
Sorbo, Mar Loren-Mendez, Ana Nikezić
Maria Philokyprou, María F. Carrascal
Pérez / *HERSUS Scientific Coordinators*

TITLE

STUDY: Questionnaire for the State of
the Art in educating sustainability and
heritage

PUBLISHER

University of Belgrade,
Faculty of Architecture

DESIGN LAYOUT

Aleksandra Đorđević, Aleksandra
Milovanović, Ana Zorić, Mladen Pešić

ISBN-978-86-7924-267-9

2021



Co-funded by the
Erasmus+ Programme
of the European Union

STUDY: Questionnaire for the State of the Art in educating sustainability and heritage

IO2 lead: Konstantinos Sakantamis, AUTH

HERSUS Project leader: Vladan Djokić, UBFA

This result has been produced as a part of O1 INTELLECTUAL OUTPUT within HERSUS project within Erasmus + Strategic Partnerships for higher education. The creation of these resources has been co-funded under grant no. 2020-1-RS01-KA203-065407 (funding period 2020-2023; total grant 246.922,00 €). This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



|||||

Content

Introduction **6**

ANALYSIS OF THE QUESTIONNAIRE

STUDENTS QUESTIONNAIRE **29**

[30](#) UBFA - SERBIA
[46](#) Iuav - ITALY
[62](#) UCY - CYPRUS
[78](#) AUTH - GREECE
[94](#) USE - SPAIN

EXPERTS QUESTIONNAIRE **113**

[114](#) UBFA - SERBIA
[136](#) Iuav - ITALY
[158](#) UCY - CYPRUS
[180](#) AUTH - GREECE
[202](#) USE - SPAIN

CONCLUSIONS **227**

[228](#) UBFA - SERBIA
[230](#) Iuav - ITALY
[232](#) UCY - CYPRUS
[234](#) AUTH - GREECE
[236](#) USE - SPAIN

STUDENT QUESTIONNAIRE STUDY RESULTS



Serbia (Belgrade)



Italy (Venice)



Cyprus (Nicosia)



Greece (Thessaloniki)



Spain (Seville)

DISSEMINATION PROCESS

The initial strategy for the dissemination was conceived in following consecutive steps: (1) targeting and distributing questionnaires to the students directly involved in courses taught by UBFA HERSUS team members with particular focus to specific programs and levels, (2) targeting and distributing questionnaires to the recent alumni members, (3) distributing of questionnaires through student representatives to all students of 4th and 5th year of Integrated studies, and 1st and 2nd year of Master studies, (4) connecting and distributing questionnaires among other schools of Architecture in the country (University of Novi Sad, University of Niš, University of Novi Pazar), (5) posting a link on the official HERSUS website and UBFA social networks, and (6) inviting other related higher education institutions relevant to the HERSUS scope to take participation.

The dissemination strategy was successful, specifically having in mind the number of students that expressed initial interest to take participation (506 students). Having in mind the questionnaire complexity, 174 students have completed the questionnaire, on whose answers conclusion will be carried out. In relation to total responses on the consortium level, this sample represents a 22,72%.



Aleksandra Đorđević
Ana Zorić
Aleksandra Milovanović
Mladen Pešić

SERBIA

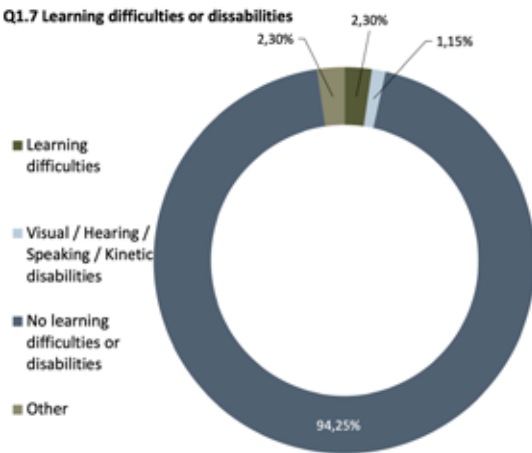
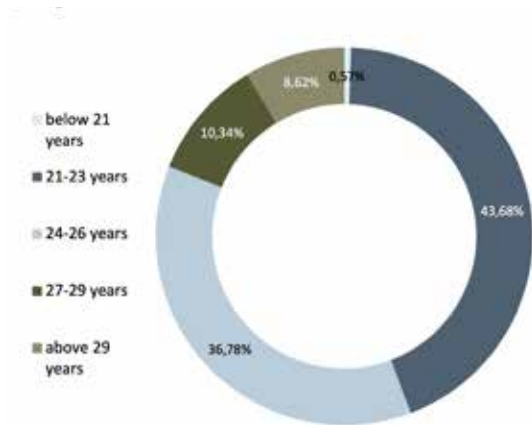
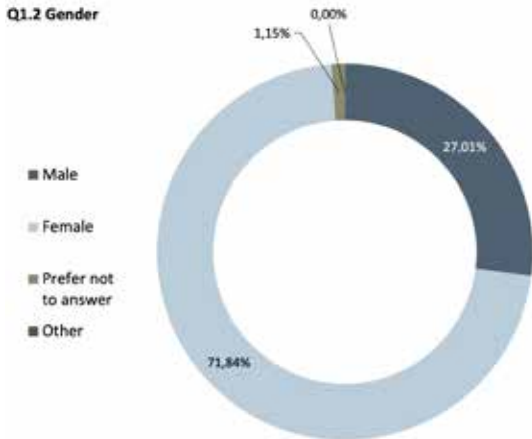
01

ABSTRACT / SERBIA / UBFA



The students' questionnaires involved 506 students (176 completed and 330 uncompleted questionnaires) from UB-FA and other Architectural Schools in Serbia. The questionnaire was attended by students of all targeted levels of study, as well as alumni, with the largest share of respondents from the master level of study. UB-FA analysis of the survey data identifies following key points about the State-of-the-Art in the field of heritage and sustainability education: (1) an almost invisible number of courses which involve sustainability and heritage as umbrella concepts in curriculum design have been identified within existing master's and specialist-level study programs, (2) students are not sufficiently aware of the impact of practice-based and ICT approaches in strengthening their comprehension of principles related to the nexus of sustainability and heritage, (3) the mismatch in understanding the key concepts of sustainability and heritage in line within different scales of design practice is recognized, as well as the need for developing integral, multiscale approach, and finally (4) a gap is recognized between what students have identified in evaluating their skills and knowledge, and identifying what they consider relevant for employability and practice arena.

RESPONDENTS SAMPLE



Gender

In relation to gender representation in UBFA sample, the dominant pattern consists of female gender (71,84%, which is even higher than percentage of female respondents on the consortium level - 62,79%), while there was 27,01% of male respondents, while 1,15% of students preferred not to answer.

Age

Regarding age, the distribution is more balanced, and the UBFA sample consist of 0,57% persons aged below 21 years, 43,68% persons aged 21-23, 36,78% aged 24-26, 10,34% aged 27-29, and 8,62% over 29 years. These results correspond with the general age of students enrolled in master programs and specialisation courses, while the relative high number of persons above 29 years (8,62%) resulted from the strategy of including alumni students, and not the general age of students engaged in programs, as it may be a case in other countries since this percentage is higher (16,58%).

Learning difficulties or disabilities

There is an important percentage of people with various learning difficulties or disabilities (*Learning difficulties* – 2,30%, *Visual/Hearing/Speaking/Kinetic disabilities* – 1,15%, and *other disabilities* such as diabetes- 2, 30%) that needs to be taken into account when envisioning future courses, particularly since the local results correspond to the results on the consortium level. One of the participants highlighted that due to his kinetic disability student was not able to attend all teaching activities (such as field visits, consultation, etc).

Fig 1. Mapping of the various backgrounds of the respondents based on responses to Q1.2, Q1.3 and Q1.7

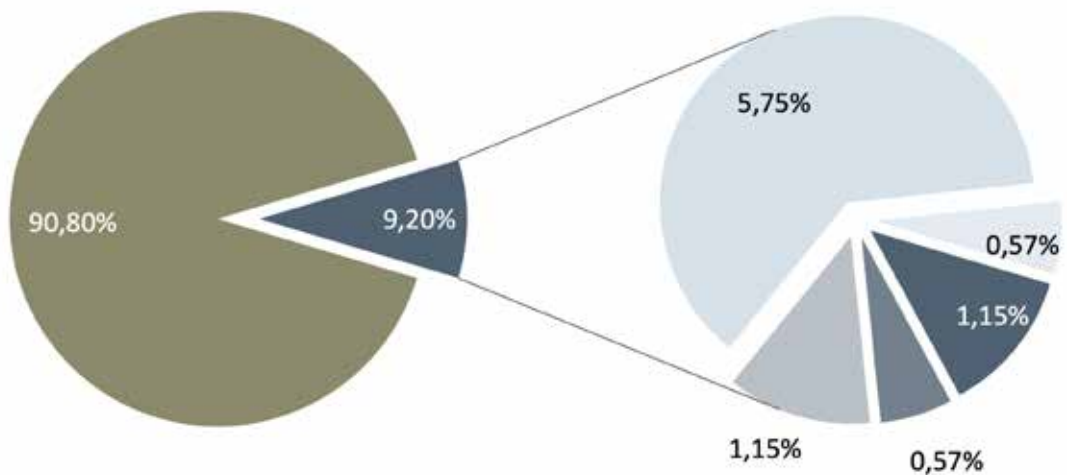
Respondents' studies or professional background

The dominant percentage of UBFA respondents comes from the *Architectural background* (90,80%), while all other fields form a sample of 9,20%. Their professional backgrounds differ from *Engineering* (1,15%), *Social sciences* (0,57%), *Agriculture/Landscape Design and planning* (1,15%), *Urban and Regional planning* (5,75%) and *Other* (0,57%). The range of other disciplines is smaller compared to the results at the consortium level which corresponds to the tradition of dealing with heritage and sustainability that is closely related to the field of architecture, and rarely represented in other closely related fields.

Q1.4 studies | professional background

- Architecture
- Engineering
- Spatial Planning / Land Surveying / Topography / Geography
- Social Sciences
- Environmental Science / Engineering
- Management / Economics
- Agriculture / Landscape Design & Planning
- Interior / Industrial Design
- Archaeology / Heritage Conservation
- Urban and Regional Planning
- Other

Fig 2. Mapping of the various backgrounds of the respondents based on responses to Q1.4



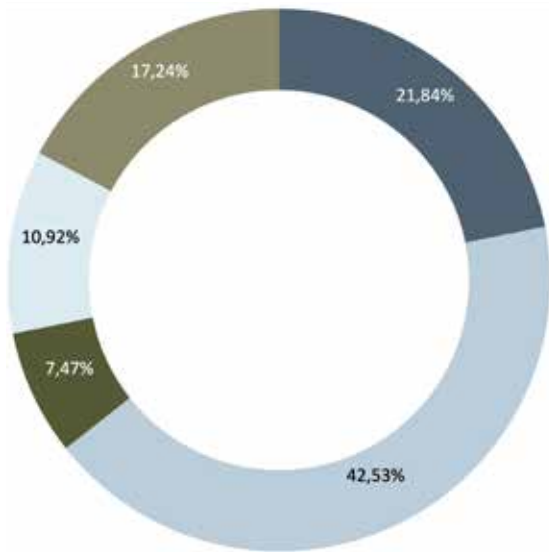
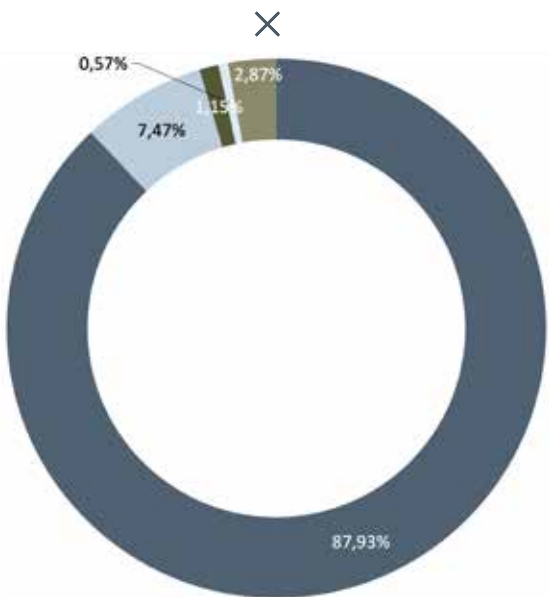


Fig 3. Mapping of the various backgrounds of the respondents based on responses to Q1.5

Q1.5 Program of Studies

- Second cycle: 4th / 5th year of 5-year single cycle integrated Master Studies
- Second cycle: Master's degree studies / professionalization courses
- Third Cycle: Specialisation School
- Third Cycle: PhD studies
- Recent Alumni of the above Programs



- Architecture/ Built Environment
- Sustainability/ Environmental Design
- Heritage/ Conservation/ Restoration/ Cultural Management
- Sustainable Heritage
- Other

Fig 4. Mapping of the various backgrounds of the respondents based on responses to Q1.6

Type of program that they currently attend

The UBFA sample corresponds to the HERSUS sample and records the balanced variability regarding programs, especially having in mind that percentage of respondents correspond to the number of students enrolled in individual programs (4th and 5th year of 5-year single cycle Integrated Master Studies – 21,84%, Master degree studies/ professional courses – 42,53%, Specialisation School – 7,47%, Ph.D. Studies – 10,92% and Recent Alumni – 17,24%).

Main Focus of their current studies

Similar to professional background and question 1.4, 87,93% of students have *Architecture and Built environment* as their main focus of studies, respective number of students (7,47%) are engaged in studies of *Sustainability and environmental design*. Other fields record lack of representation. The percentage of students with main focus on *Architecture and Built environment* is reasonably higher than on a consortium level (87,93% compared to 63,05%), which can be explained through the elective character of courses that tackle problems of sustainability and heritage. This also testifies about the need to develop new programs, that will be solely devoted to the interface between heritage and sustainability.

The distribution of available courses in the curriculums

The analysis will be drawn upon the results corresponding to 1) *4th and 5th year of Integrated Master Studies* – 38 respondents, 2) *Master's degree studies in Architecture and Built environment* – 70 respondents, 3) *Specialization School in Sustainability/ Environmental Design* – 6 respondents, and 4) *Specialization School in Architecture and Built environment* – 5 respondents.

1) The Integrated studies are mainly focused on *Architecture* (92,1%), with median number of 72 courses, where 3 to 4 courses raise issues or are focused on each of the defined subject groups: a) Documentation, Conservation and Restoration of Cultural Heritage, b) Sustainability/Environmental Design, c) Sustainability and Cultural Heritage, d) Sustainability/ Environmental Design/Planning and e) value/appreciation or dialogue with the National/International Historic Context, thus corresponding to the results on the consortium level.

2) The Master studies are focused on *Architecture* (100%), with median number of 26 courses, where 2 to 3 courses raise issues or are focused on each of the

defined subject groups: a) Documentation, Conservation and Restoration of Cultural Heritage, b) Sustainability/Environmental Design, c) Sustainability and Cultural Heritage, d) Sustainability/Environmental Design/Planning and e) value/appreciation or dialogue with the National/International Historic Context. In relation to the number of subjects, which is respectively higher than on the consortium level (26 to 20 subjects), the results testifies that the representation of topics in question, are higher from the program of Integrated studies. Aside the number of subjects, the results correspond to the results on the consortium level.

3) The Specialization School focused on *Sustainability* (100%), with median number of 10 courses, from which almost all deal with topics of Sustainability/Environmental Design, only 1 tackles the question of Sustainability and Cultural Heritage and 1 on value/appreciation or dialogue with the National/International Historic Context.

4) The Specialization School focused on *Architecture and Built environment* (100%), with median number of 13 courses, from which 5 deal with topics of Sustainability/ Environmental Design, while none deals with all other defined subject groups.

Table 01. Available courses in the existing programs of studies according to responses to Q2.1

	Responses		Focus of Studies			Taught Courses of the Curriculum	Courses focusing mainly on documentation Conservation Restoration of Cultural Heritage			Courses focusing mainly on Sustainability / Environmental Design		Courses focusing both on Sustainability & Cultural Heritage		Courses raising issues of Sustainability / Environmental Design / Planning		Courses raising issues of the value / appreciation or dialogue with the National / International Historic Context	
	number	% of total samples	Architecture	Heritage	Sustainability	Median	Median	% of total courses	Median	% of total courses	Median	% of total courses	Median	% of total courses	Median	% of total courses	
4th / 5th year of 5-year single cycle integrated Master Studies	38	5,0%	92,1%	2,6%	2,6%	72	4	5,6%	3	4,2%	3	4,2%	3	4,2%	3	4,2%	
Master's degree studies / professionalization courses	1	0,1%	0,0%	0,0%	100,0%	24	1	4,2%	2	8,3%	1	4,2%	4	16,7%	2	8,3%	
	0	0,0%	0,0%	0,0%	0,0%	0	0	0,0%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	
	70	9,1%	100,0%	0,0%	0,0%	26	3	11,5%	3	11,5%	3	11,5%	3	11,5%	2	7,7%	
Specialization School	6	0,8%	0,0%	0,0%	100,0%	10	0	0,0%	8	80,0%	1	10,0%	2	20,0%	1	10,0%	
	0	0,0%	0,0%	0,0%	0,0%	0	0	0,0%	0	0,0%	0	0,0%	0	0,0%	0	0,0%	
	5	0,7%	100,0%	0,0%	0,0%	13	0	0,0%	5	38,5%	0	0,0%	0	0,0%	0	0,0%	

IMPACT OF ACADEMIC ACTIVITIES IN STRENGTHENING STUDENTS COMPREHENSION

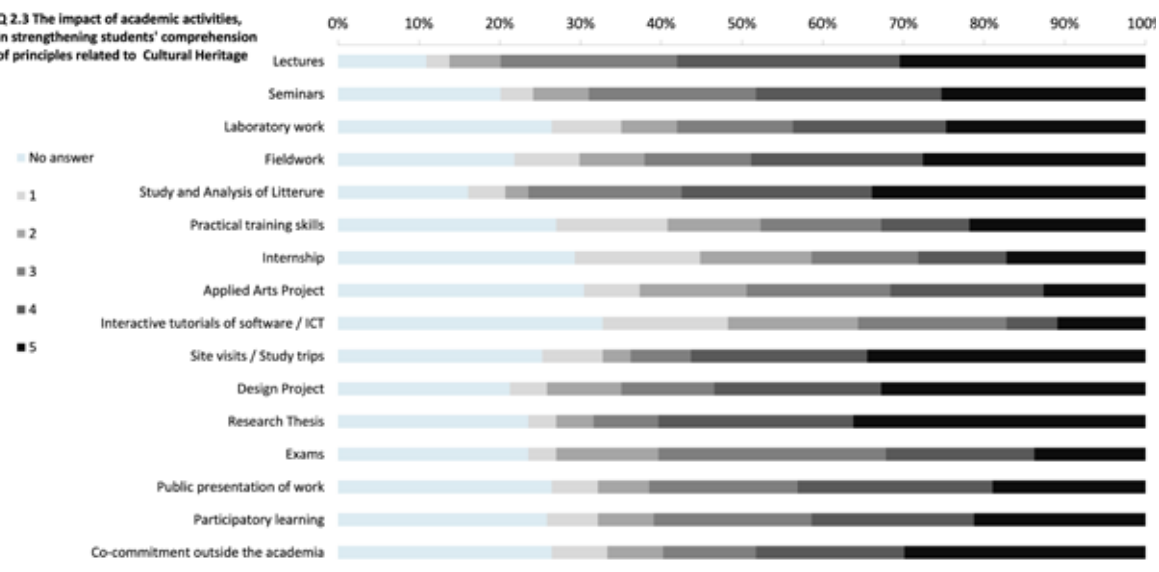
In relation to issues of *Sustainability*, local results from UBFA testify that the three most effective academic activities are *Lectures*, *Study and Analysis of Literature*, and *Research Thesis*, while three least effective are *Interactive tutorials of software/ICT*, *Applied Arts Project*, and *Internship*. These results mainly correspond to the results on the consortium level, while the difference is noted within the importance of *Design project* and *Study and analysis of Literature* for strengthening student's comprehension of principles related to Sustainability.

In relation to issues of *Cultural Heritage*, local results from UBFA testify that the three most effective academic activities are *Research Thesis*, *Lectures* and *Study and Analysis of Literature*, while three least effective are *Interactive tutorials of software/ICT*, *Internship* and *Practical Training skills*. These results mainly correspond to results on the consortium level, while the difference is noted within the importance of *Design project* for strengthening students comprehension of principles related to Heritage. Additionally, on the consortium level, students expressed opinion that *Exams* is one of the few academic activities that is the least effective.

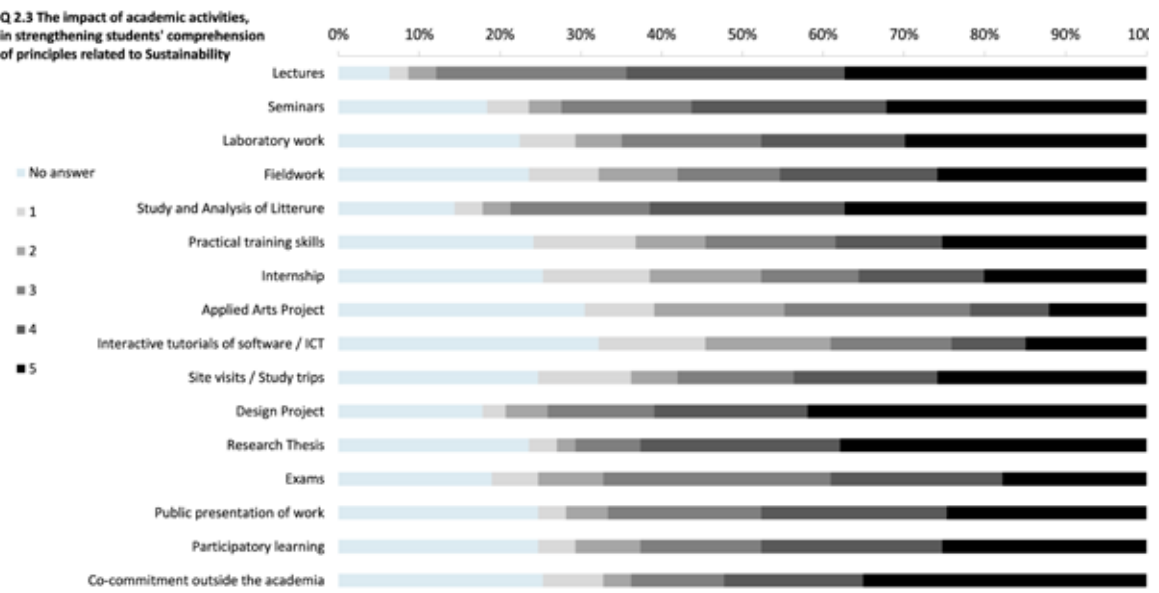
In relation to the *interface of Sustainability and Heritage*, local results from UBFA testify that the three most effective academic activities are *Research Thesis*, *Design project* and *Site visits/Study trips*, while three least effective are *Interactive tutorials of software/ICT*, *Applied Arts projects*, and *Internship*. These results mainly correspond to results on the consortium level, while the difference is noted in the opinion that *Exams* are one of the few academic activities that is the least effective.

Fig 5. The impact of academic activities in strengthening students' comprehension of principles related to (a) sustainability, (b) cultural heritage or (c) both

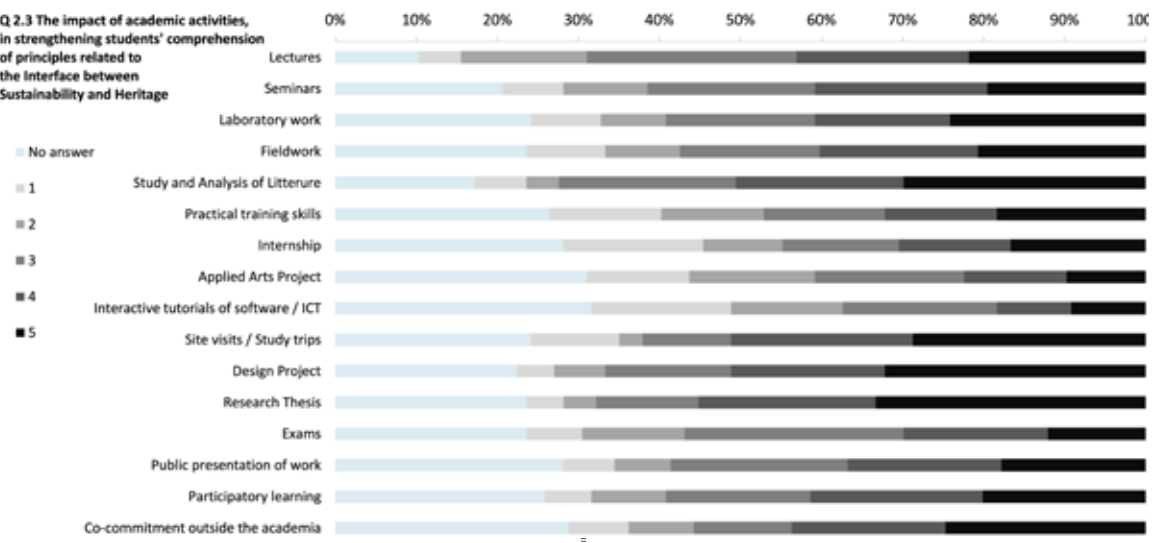
Q 2.3 The impact of academic activities, in strengthening students' comprehension of principles related to Cultural Heritage



Q 2.3 The impact of academic activities, in strengthening students' comprehension of principles related to Sustainability



Q 2.3 The impact of academic activities, in strengthening students' comprehension of principles related to the Interface between Sustainability and Heritage



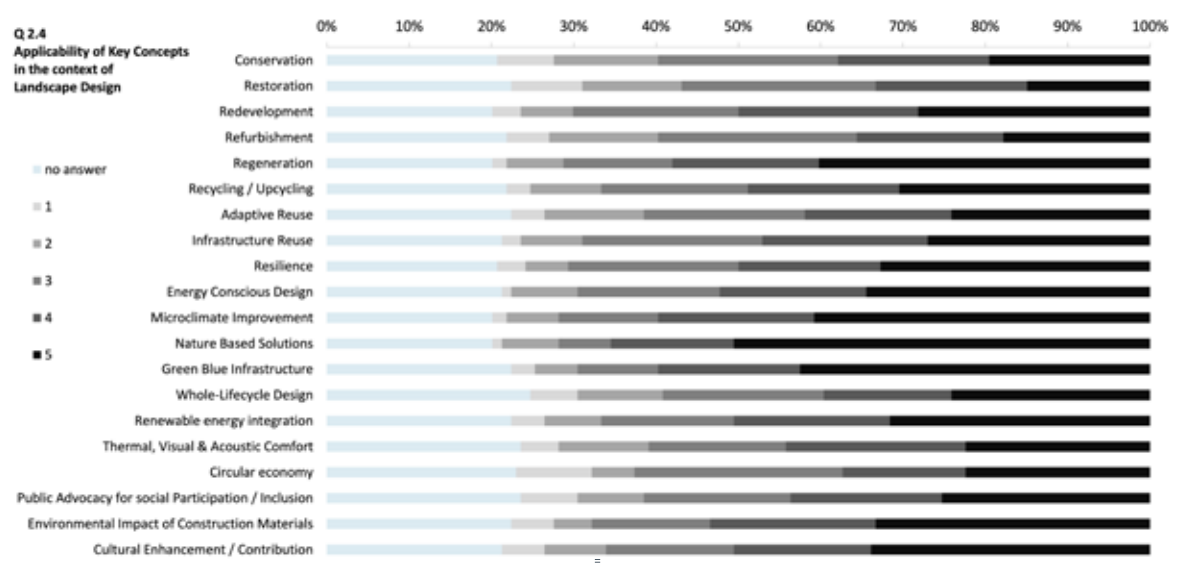
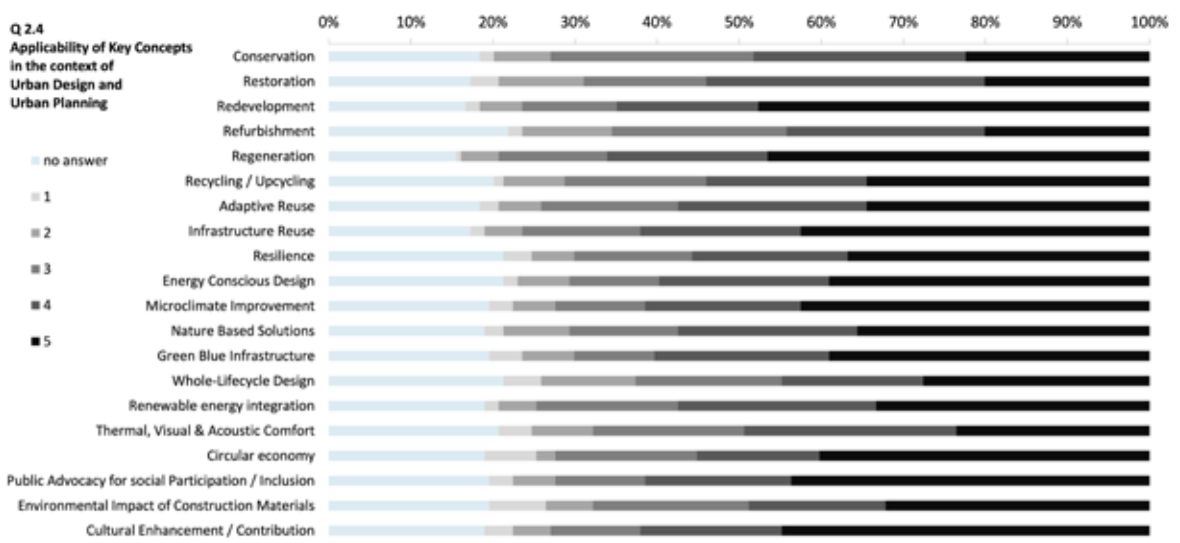
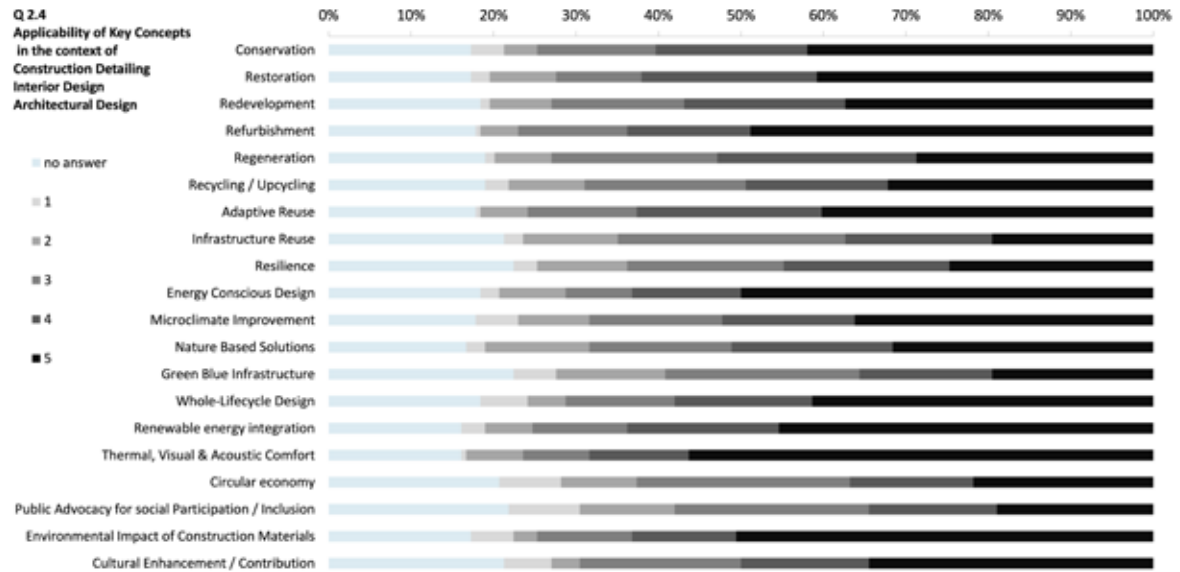
APPLICABILITY OF KEY CONCEPTS RELATED TO SUSTAINABILITY AND CULTURAL HERITAGE IN RELATION TO DIFFERENT SCALES

Regarding applicability of Key concepts in the scale of *Construction detailing, Interior Design and Architectural Design*, local results from UBFA indicate that the three most applicable concepts are *Thermal, Visual and Acoustic Comfort, Renewable Energy integration* and *Refurbishment*, while three least effective are *Green Blue infrastructure, Public Advocacy for Social Participation/ Inclusion*, and *Circular Economy*. These results mainly correspond to results on the consortium level, while noticed difference emerges in the importance of *Restoration* for this scale.

Regarding applicability of Key concepts in the scale of *Urban planning and Design*, local results from UBFA indicate that the three most applicable concepts are *Regeneration, Redevelopment* and *Cultural Enhancement/ Contribution* while three least effective are *Whole life cycle design, Restoration* and *Refurbishment*. These results mainly correspond to results on the consortium level, while there is a notable difference in local context devoted towards *Cultural Enhancement / Contribution*.

Regarding applicability of Key concepts in the scale of *Landscape design*, local results from UBFA indicate that the three most applicable concepts are *Nature based solutions, Green Blue infrastructure* and *Microclimate improvement*. while three least effective are *Conservation, Restoration* and *Refurbishment*. When it comes to the least effective, there is a complete matching, while in the most effective ones there are large deviations. On the consortium level, three most effective concepts are *Nature based solutions, Regeneration* and *Cultural Enhancement/Contribution*.

Fig 6. Applicability of Key Concepts related to sustainability and cultural heritage in the context of different scales of design practice



STUDENTS' SELF-EVALUATION IN TERMS OF THE SKILLS AND KNOWLEDGE

Regarding issues of *Sustainability*, local results from UBFA reveal that students evaluated their skills and knowledge to be satisfying (marks 4 and 5) in *fundamentals*, *presentation communication* and *awareness raising*, while not unsatisfying (marks 1 and 2) in *practical experience*, *specialist conservation skills*, and *managerial administrative skills*. It is worth mentioning, that opinion among areas with best achieved skills and knowledge is the same with the consortium, while there is a notable difference in skills that need to be improved (*local and international context* on the consortium level).

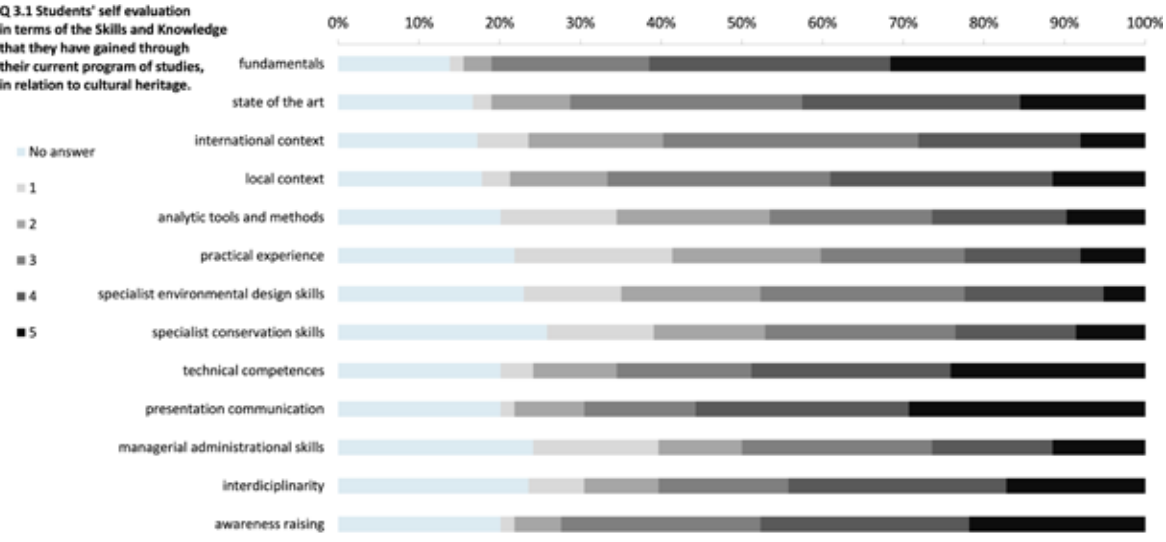
In relation to issues of *Cultural heritage*, local results from UBFA reveal that students evaluated their skills and knowledge to be satisfying (marks 4 and 5) in *fundamentals*, *presentation communication* and *technical competences*, while not unsatisfying (marks 1 and 2) in *practical experience*, *analytic tools and methods*, and *specialist conservation skills*. These results mainly correspond to results on the consortium level, while the difference is noted within the achieved skills and knowledge of *awareness raising* (consortium level) in contrast to *technical competences* (local level), and lack of skills in *international context* (consortium level) in contrast to *specialist conservation design skills* (local level).

In relation to issues of *Sustainability and Heritage*, local results from UBFA reveal that students evaluated their skills and knowledge to be satisfying (marks 4 and 5) in *presentation communication*, *fundamentals* and *awareness raising*, while not unsatisfying (marks 1 and 2) in *practical experience*, *analytic tools and methods*, and *specialist conservation skills*. These results mainly correspond to results on the

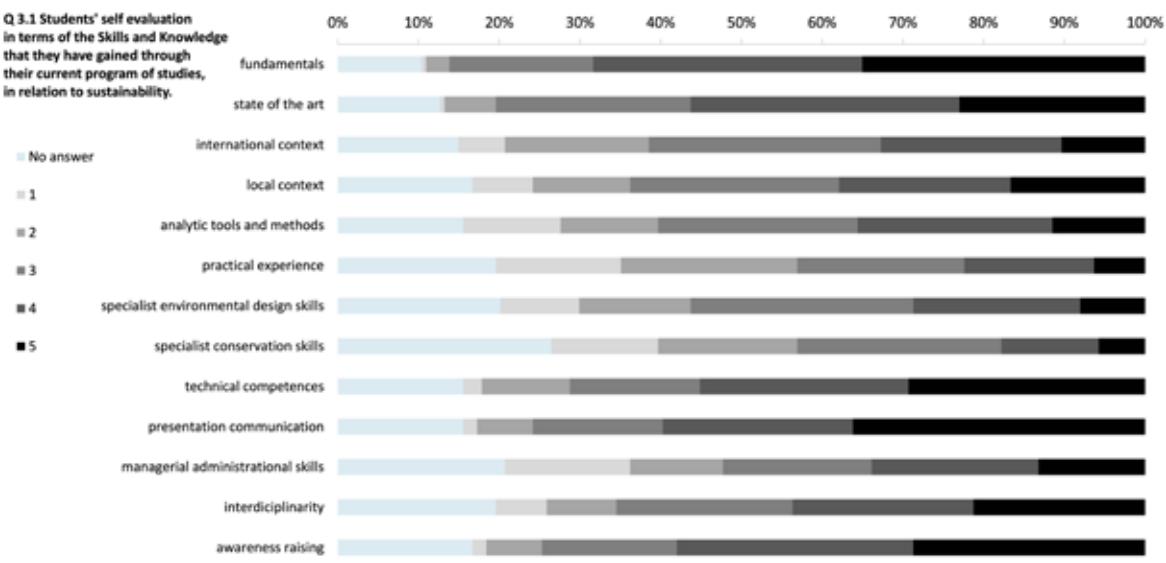
consortium level, while the difference is noted within the lack of skills in *international and national context* on the consortium level in contrast to *specialist conservational and analytical skills and tools* at the local level.

Fig 7. Students' self-evaluation in terms of the Skills and Knowledge that they have gained through their current program of studies in relation to (a) sustainability, (b) cultural heritage or (c) both

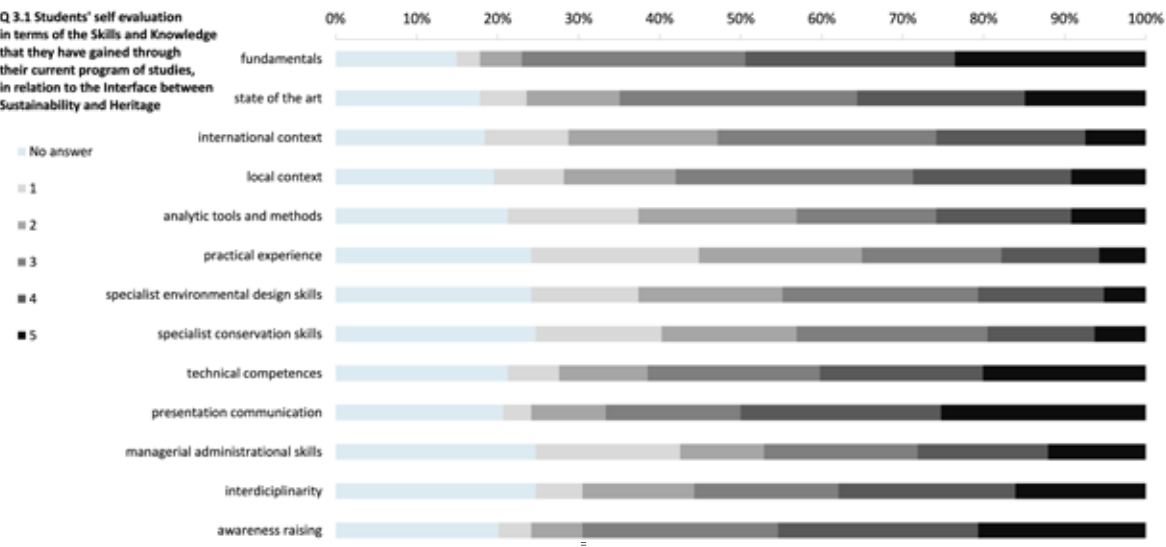
Q 3.1 Students' self evaluation in terms of the Skills and Knowledge that they have gained through their current program of studies, in relation to cultural heritage.



Q 3.1 Students' self evaluation in terms of the Skills and Knowledge that they have gained through their current program of studies, in relation to sustainability.



Q 3.1 Students' self evaluation in terms of the Skills and Knowledge that they have gained through their current program of studies, in relation to the Interface between Sustainability and Heritage



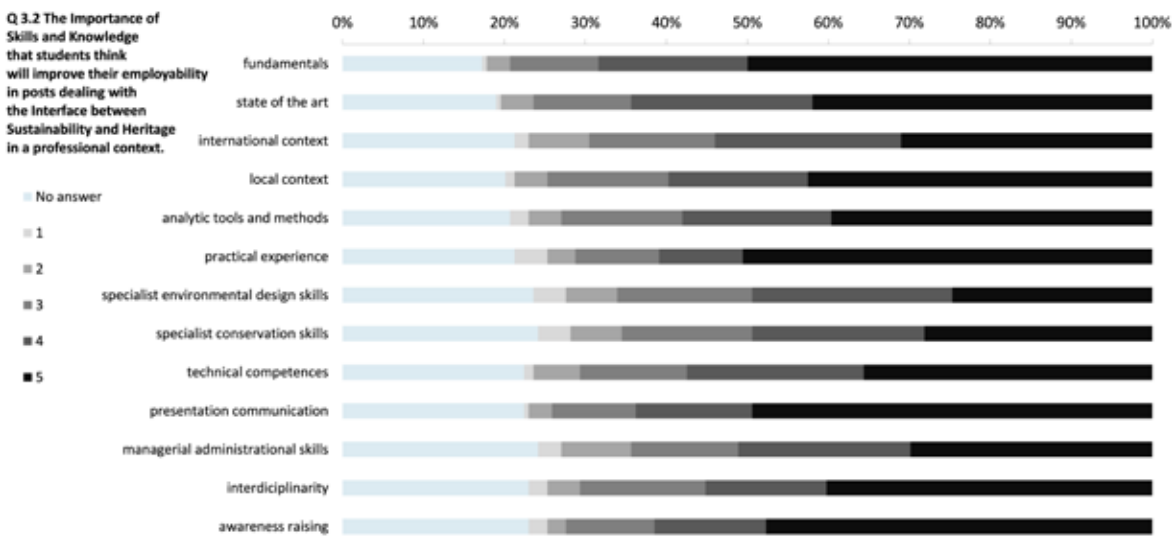
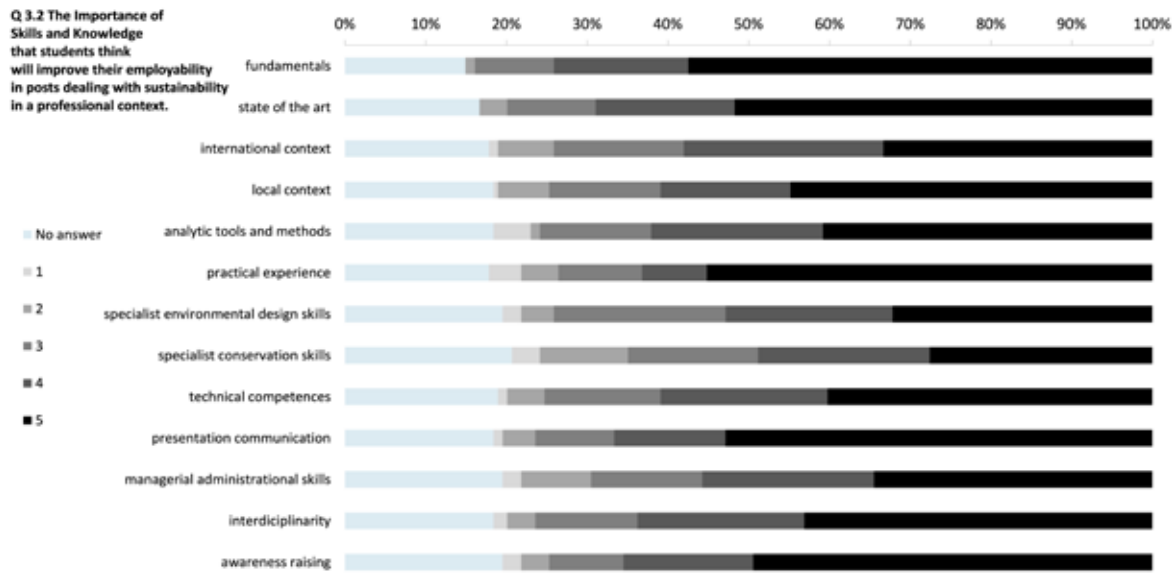
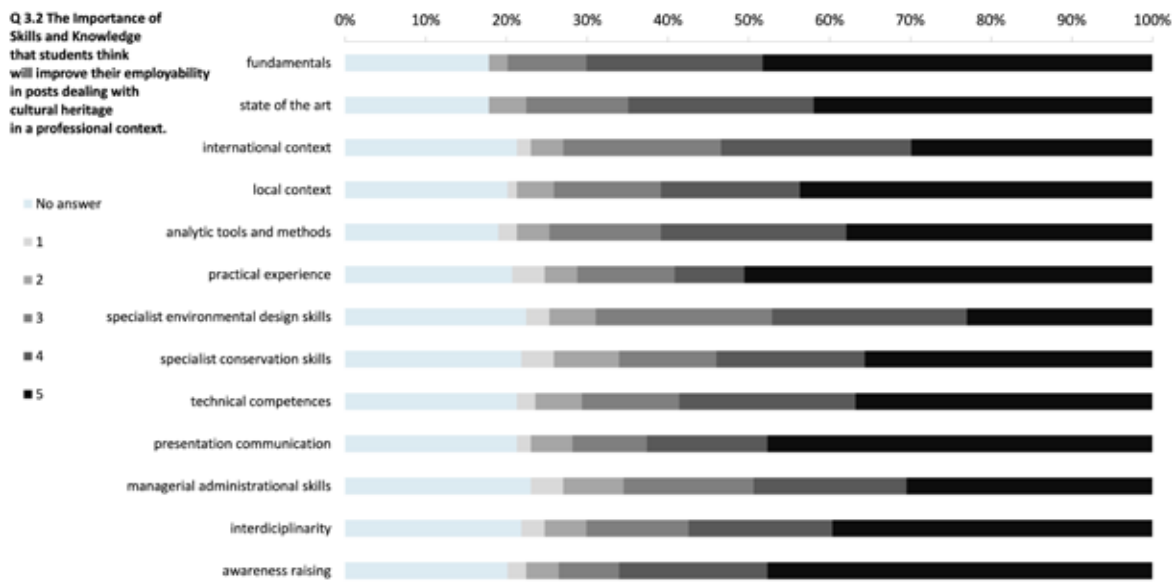
THE IMPORTANCE OF SKILLS AND KNOWLEDGE THAT STUDENTS THINK WILL IMPROVE THEIR EMPLOYABILITY

In relation to issues of *Sustainability*, local results from UBFA reveal that students greatly evaluate importance of skills and knowledge in *fundamentals*, *state of the art*, and *presentation communication*, while they find less important knowledge and skills in the field of *specialist conservation skills*, *managerial administrative skills*, and *practical experience*. These results mainly correspond to results on the consortium level, while the difference is noted within the importance of *awareness raising* on the consortium level in contrast to the *state of the art*, as well as in the recognized importance in *international and national contexts* on the consortium level.

In relation to issues of *Cultural Heritage*, local results from UBFA reveal that students greatly evaluate importance of skills and knowledge in *fundamentals*, *awareness raising*, and *state of the art*, while they find less important knowledge and skills in the field of *specialist conservation skills*, *managerial administrative skills*, and *specialist environmental design skills*. These results mainly correspond to results on the consortium level, while the difference is noted within the importance of *awareness raising* on the consortium level.

In relation to issues of *interface between Sustainability and Heritage*, local results from UBFA reveal that students greatly evaluate importance of skills and knowledge in *fundamentals*, *presentation communication*, and *state of the art*, while they find less important knowledge and skills in the field of *managerial administrative skills*, *specialist conservation skills*, and *specialist environmental design skills*. These results mainly correspond to results on the consortium level, while the difference is noted within the importance of *awareness raising* on the consortium level.

Fig 8. The Importance of Skills and Knowledge that students think will improve their employability in posts dealing with (a) sustainability, (b) cultural heritage or (c) both, in a professional context



DISCUSSION / CONCLUSIONS

The conducted questionnaire is a significant resource in demystifying and critically arguing the importance of enhancing the concepts of sustainability and heritage in the context of education in Serbia. Through a series of relational and critical issues, a number of cause-and-effect problems are recognized, especially when it comes to the relationship between academic activities, competencies, and knowledge and skills. On this basis, the need for a more complex study of heritage in the context of architectural education is unequivocally identified. This statement is also recognized within the UNESCO / UIA Charter for Architectural Education, where the architectural heritage education is highlighted as a particular field essential to (1) understanding sustainability, the social context and sense of place in building design, and (2) transforming the professional architectural mentality so that its creative methods are part of a continuous and harmonious cultural process.

