TeComp

**Strengthening Teaching Competences
in Higher Education
in Natural and Mathematical Sciences**

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Report on the level of PPM knowledge/skills of university lecturers and on the current state of technology enhanced teaching and learning

July 2019

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Project acronym:	**TeComp**
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Work package:	WP1 – Preparation for strengthening teaching competences in the field of natural sciences and mathematics at the PC HEIs
Lead organization of WP1:	P5- "Eqrem Çabej" University Gjirokastër ECUG
Task 1.1	Quantitative analysis of teaching competences of young, newly hired university lecturers at the PC HEIs
Task 1.2	Detailed analysis of the use of modern educational technologies in teaching and learning at the PC HEIs
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Table of Contents

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ENTRY

This research is done on the framework of TeComp project: "Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences", co-funded by the Erasmus + Program and the European Union. The main objective is to improve the quality of higher education in the field of natural and mathematical sciences in higher education institutions in Serbia and Albania, in line with advanced EU practices, enhancing their comparability and competitiveness in Europe and beyond. This main goal will be achieved by completing a number of specific objectives in the areas of university study that the project covers:

- to enhance the professional competencies and skills of teaching staff through training courses in contemporary pedagogical approaches, methodologies and educational technologies;
- to improve the educational infrastructure as a basis for a wider integration of pedagogical principles and modern technologies in teaching and learning;
- to offer new / modified courses in psychology, pedagogy, teaching methodology and technology promotion in HEIs in line with modern European strategies;
- To strengthen the personnel infrastructure through the introduction of continuous professional development in the higher education system.

According to these objectives, the project is expected to achieve the following results:

- Identifying and adopting measures and actions needed to improve the quality of teaching and learning processes;
- Improving educational infrastructure;
- Training of teaching staff on the use of pedagogical and methodological principles and new ways of teaching and learning;

Develop methodology and platforms for wider integration of ICT into teaching and learning.

The project will focus in particular on the transition from a learning-oriented approach to a learning-oriented approach to the learning process, a flexible and individualized approach, as well as better communication and interaction between lecturers and students. Target areas in Serbian and Albanian universities that need qualitative improvement of teaching and learning processes will be identified and a concrete action plan will be identified with the necessary measures and actions.

The purpose of WP1 (PREP) is to identify the necessary institutional measures, activities and documents for the successful implementation of new T&L modes. First, the current situation in HEIs will be analyzed from the aspect of staff education level lecturers in the areas of pedagogy and teaching methodology (PMT), as well as the level of use of technological innovations in T&L. Following will be the experiences of EU HEIs and the forms of T&L models that use, a comparative analysis will be made, the needs and opportunities of the HEIs will be identified and a concrete action plan will be developed, with the necessary measures and actions.

The lectures and students of three Serbian universities (Nis, Belgrade and Kragujevac) and two Albanian universities (Gjirokastra and Korca) have volunteered for its implementation. Two types of questionnaires (Appendix 1 & 2) were used as the data collection study tool:

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Questionnaire 1 "Survey for lecturers" and Questionnaire 2 "Survey for students". These questionnaires were designed by the project working group and agreed on their content and quality by CMT members. To fill in the questionnaires, both electronic and physical forms (hard-copy) were chosen. During the period April 2019-May 2019 they were supplemented by finding the cooperation and dedication of a considerable part of the lecturers and students available at the above-mentioned universities.

The data collection, their processing and the preparation of individual reports were carried out by the working groups of each university. The final drafting of the Summary Report and its presentation was carried out by Dr. Romeo Mano, Lecturer and coordinator of the project at Gjirokastra's "Eqrem Çabej" University, which is the university responsible for WP1.

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Chapter I BASIC INFORMATION OF PARTICIPANTS

1.1 University of Niš, Serbia

The survey was filled in by 31 lecturers, 14 (45.16%) of whom were women and 17 (54.48%) men. Lecturers from six areas were present in the sample in the following way: mathematics (6), geography (4), computer science (9), physics (3), chemistry (5) and biology (4). The survey was conducted electronically during April 2019.

The average number of years of teaching experience is 15.26 years (the standard deviation is 6.15 years). The shortest teaching experience in the sample is 5 years, while the longest teaching experience is 30 years. In the further report, we will consider lecturers and associates whose work experience is up to 12 years under the younger teaching staff, while experienced lecturers will consider lecturers with experience over 12 years. Translated to the age of the respondents, we can identify 12 years of experience with 35 years of age.

Work at the university allows for a significant individual distribution of time. For these reasons, lecturers / associates filled out how many hours of work were active during the week and how it was arranged. Average respondents said they spend 47.15 hours of work on different activities (with a standard deviation of 12.54). Operating hours vary from 25 hours to 75 hours. The amount of time spent in the week on individual activities is given in Table 1.1.1 and Figure 1.1.1.

Table 1.1.1 Average distribution of working hours and comparison between young and experienced lecturers at the University of Nis

activity	average number of hours all	average number of hours- young lecturer	average number of hours – experienced lecturers	p-value	significance
scientific work	**15.0**(5.05)	13.91 (4.44)	15.63 (5.39)	0.377	NO
realization of teaching	**8.7** (3.32)	8.45 (3.42)	8.84 (3.35)	0.764	NO
administration	**6.25** (6.25)	5.32 (5.87)	6.79 (6.55)	0.544	NO
preparation of classes	**7.03** (2.85)	5.54 (2.73)	7.89 (2.60)	0.026	**YES**
Other activities (management, popularization, writing reviews, etc.)	**5.34** (4.48)	4.45 (3.11)	5.89 (5.16)	0.413	NO
Individual work with students (consultations, conducting study research work, etc.)	**5.00** (3.29)	3.82 (2.23)	5.68 (3.65)	0.137	NO

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IN TOTAL	**47.15** (12.54)	41.50 (7.75)	50.42(13.76)	0.059	**YES**

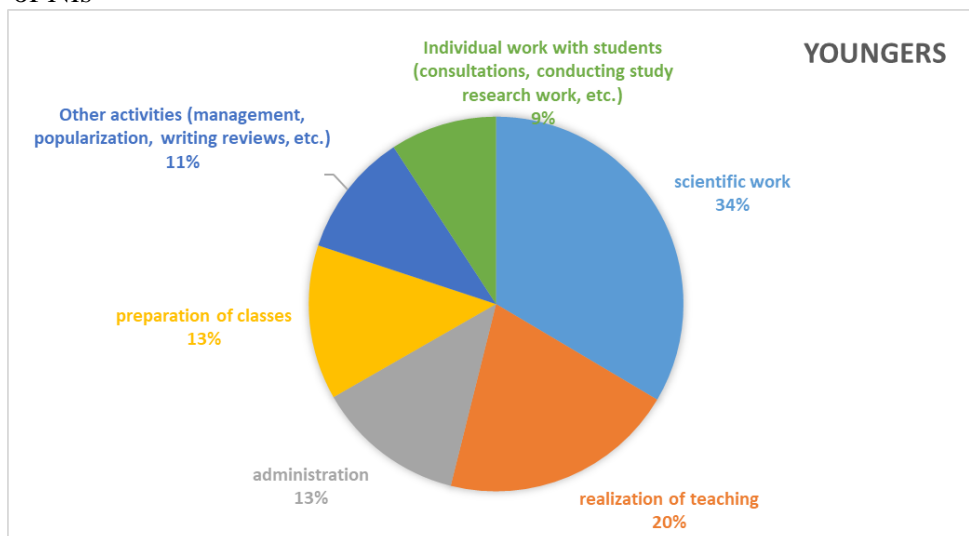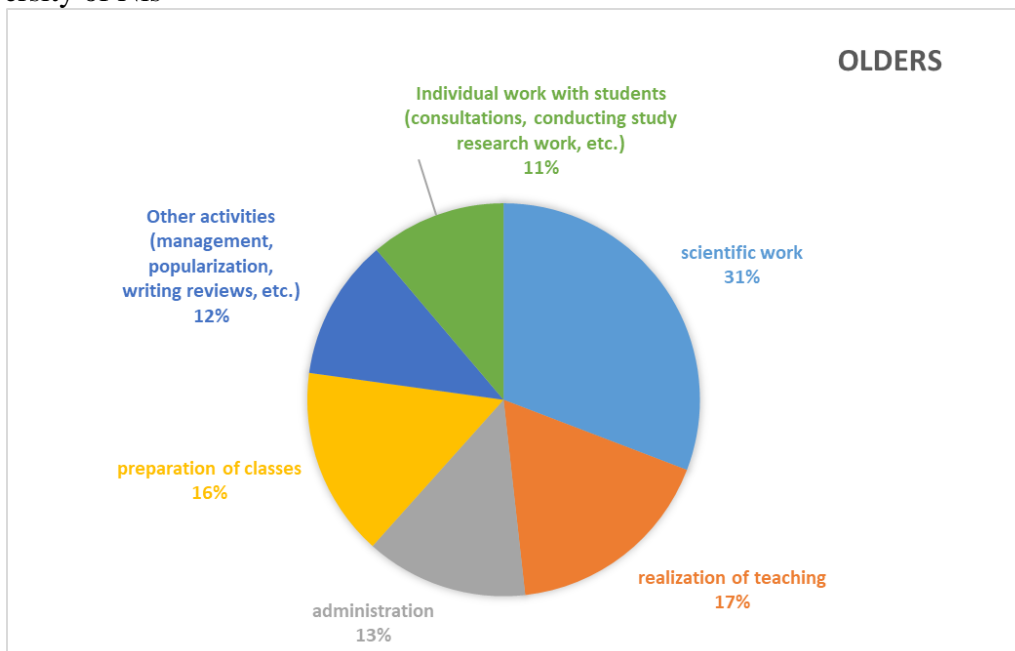Figure 1.1.1 Percentage distribution in relation to total time spent on young lecturers for the University of Nis

Figure 1.1.2 Percentage distribution in relation to total time spent on experienced lecturers for the University of Nis

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1.2 Universities of Gjirokastra and Korca, Albania

The survey was completed by 96 lecturers from Gjirokastra and Korça universities, 53 (55.21%) of whom were women and 43 (44.79%) were men. Lecturers from the six fields were present in the sample in the following way: mathematics (27.08%), geography (7.29%), computer science (30.21%), physics (14.58%), chemistry (5.21%), biology (11.46%) and 4.17% did not declare the teaching field.

The survey was conducted electronically and physically during April 2019-May 2019.

The average number of years of teaching experience is 11.21 years (the standard deviation is 7.68 years). The shortest teaching experience in the sample is 1 year, while the longest teaching experience is 37 years. In the further report, we will consider lecturers and associates whose work experience is up to 12 years under the younger teaching staff, while experienced lecturers will consider lecturers with experience over 12 years. Translated to the age of the respondents, we can identify 12 years of experience with 35 years of age.

Work at the university allows for a significant individual distribution of time. For these reasons, lecturers / associates filled out how many hours of work were active during the week and how it was arranged. Average respondents said they spend 42.15 hours of work on different activities (with a standard deviation of 15.71). Operating hours vary from 7 hours to 85 hours. The amount of time spent in the week on individual activities is given in Table 1 and Figure 1.

Table 1.2.1 Average distribution of working hours and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

Activity	average number of hours all	average number of hours- young lecturers	average number of hours – experienced lecturers	p-value	significance
Scientific work	**10.12**(6.71)	10.59 (7.39)	8.93 (4.51)	<0.0001	YES
Realization of teaching	**11.77**(4.37)	11.57 (4.37)	11.81 (4.46)	<0.0001	YES
Administration	**4.39** (4.61)	4.35 (4.34)	4.46 (5.16)	<0.0001	YES
Preparation of classes	**9.91** (6.26)	9.81 (6.24)	10.15 (6.41)	<0.0001	YES
Other activities (management, popularization, writing reviews, etc.)	**3.83** (2.97)	3.64 (2.63)	4.28 (3.66)	<0.0001	YES
Individual work with students (consultations, conducting study research work, etc.)	**5.02** (2.93)	5.08 (2.93)	4.86 (2.99)	<0.0001	YES
IN TOTAL	**42.22** (15.71)	41.94 (15.61)	42.93 (16.22)	0.059	YES

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Figure 1.2.1 Percentage distribution in relation to total time spent on young lecturers for the University of Gjirokastra and Korça

Figure 1.2.2 Percentage distribution in relation to total time spent on experienced lecturers for the University of Gjirokastra and Korça
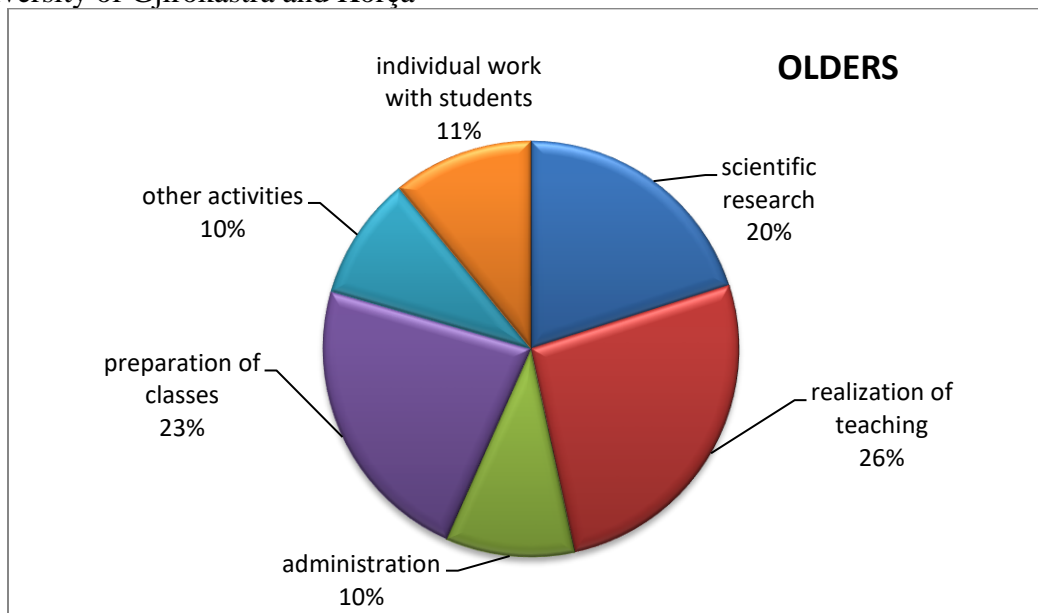
From Table 1.2.1 and Figures 1.2.1 and 1.2.2 we note that in terms of working time, younger lecturers make a qualitative difference from experienced lecturers almost solely on the time spent on scientific work, where we notice that new lecturers spend on average about 1.5 hours more

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than experienced lecturers. This difference is also identified by the percentage evaluation in relation to the total time spent for both groups (23% for younger lecturers and 20% for experienced lecturers).

The study involved 344 students, of whom 240 were female and 104 were male. 72.38% of students were in the bachelor system and 27.62% were in master studies. The distribution of students participating in the study by field of study at the university is shown in Figure 1.2.3.

Figure 1.2.3 Distribution by percentage of students according to their fields of study in the universities of Gjirokastra and Korça

The study program

- Mathematics: 32.56%
- Computer sciences: 23.55%
- Physics: 6.10%
- Chemistry: 3.20%
- Geography: 7.27%
- Biology and Ecology: 3.49%
- Math&Physics: 5.23%
- Biology&Chemistry: 18.60%
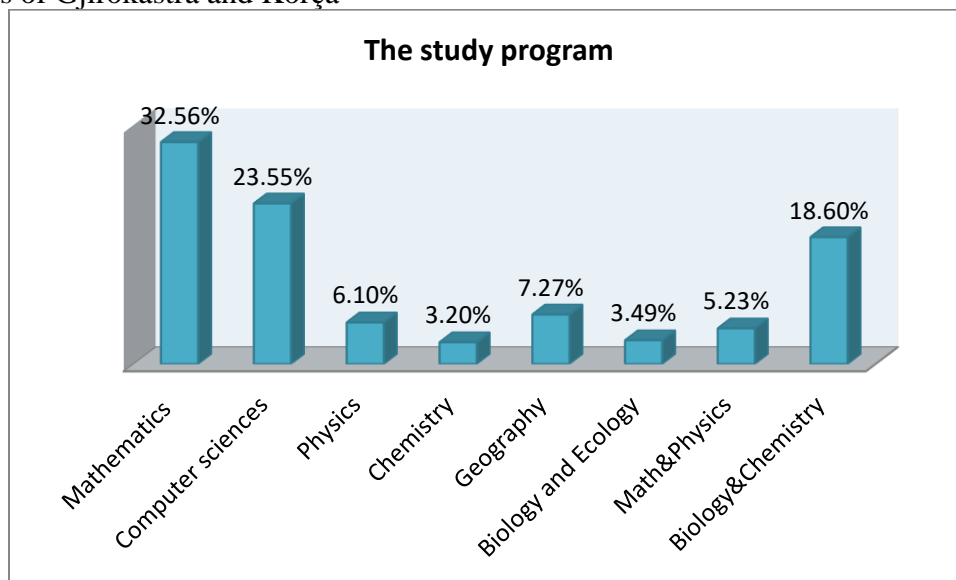
Figure 1.2.4 Distribution of average time spent by students of Gjirokastra and Korça Universities

How many hours, per week, you are spending ?

- attendan…: 18.07
- doing…: 8.9
- self-study: 8.24
- work…: 2.54
- other…: 1.35
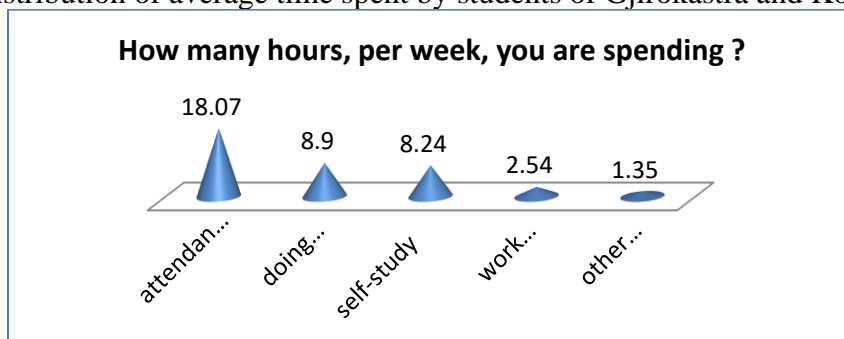
From the survey of study results, it is noted that most of the time weekly (18.07 hours), students spend to attend their lectures in class, about 16 hours a week they spend on homework or study and very few weekly hours (2.54 hours) they devote to teamwork with their colleagues.

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1.3 University of Belgrade, Serbia

The survey was filled in by 57 lecturers, 65.45% of whom were women and 34.55% men. Lecturers from three areas were present in the sample in the following way: computer science (2), physics (5) and biology (50). The survey was conducted electronically during April 2019.

The average number of years of teaching experience is 17.04 years (the standard deviation is 10.1 years). The shortest teaching experience in the sample is 1.5 year, while the longest teaching experience is 40 years. In the further report, we will consider lecturers and associates whose work experience is up to 12 years under the younger teaching staff, while experienced lecturers will consider lecturers with experience over 12 years. Translated to the age of the respondents, we can identify 12 years of experience with 35 years of age.

Work at the university allows for a significant individual distribution of time. For these reasons, lecturers / associates filled out how many hours of work were active during the week and how it was arranged. Average respondents said they spend 49.43 hours of work on different activities (with a standard deviation of 13.43). Operating hours vary from 15 hours to 88 hours. The amount of time spent in the week on individual activities is given in Table 1.3.1 and Figure 1.3.1 and Figure 1.3.2.

Table 1.3.1 Average distribution of working hours and comparison between young and experienced lecturers at the University of Belgrade

Activity	average number of hours all	average number of hours- young lecturers	average number of hours – experienced lecturers	p-value	significance
scientific work	**17.80** (5.06)	17.35 (5.59)	18.13 (4.70)	0.580	NO
realization of teaching	**8.13** (4.90)	8.91 (5.57)	7.54 (4.34)	0.316	NO
administration	**5.03** (3.97)	3.28 (2.31)	6.32 (4.45)	0.004	**YES**
preparation of classes	**8.56** (5.03)	9.73 (6.27)	7.70 (3.79)	0.153	NO
Other activities (management, popularization, writing reviews, etc.)	**5.71** (4.74)	4.86 (5.04)	6.29 (4.51)	0.289	NO
Individual work with students (consultations, conducting study research work, etc.)	**4.74** (3.47)	4.70 (3.61)	4.77 (3.41)	0.935	NO
IN TOTAL	**49.43** (13.43)	47.98 (13.16)	50.52 (13.74)	0.4974	NO

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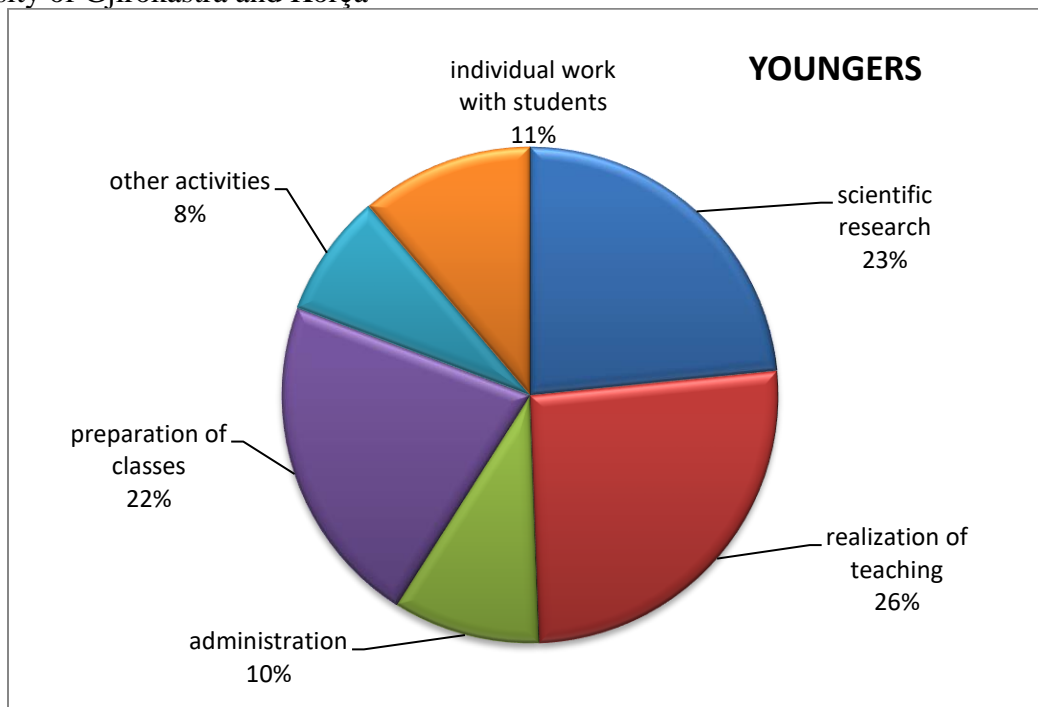Figure 1.3.1 Percentage distribution in relation to total time spent on young lecturers for the University of Belgrade
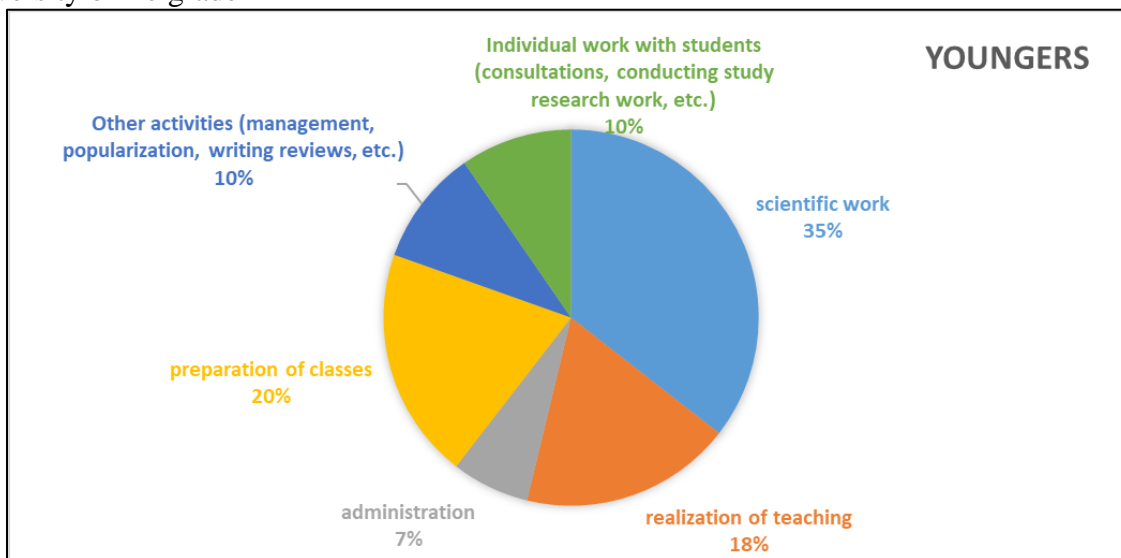
Figure 1.3.2 Percentage distribution in relation to total time spent on experienced lecturers for the University of Belgrade

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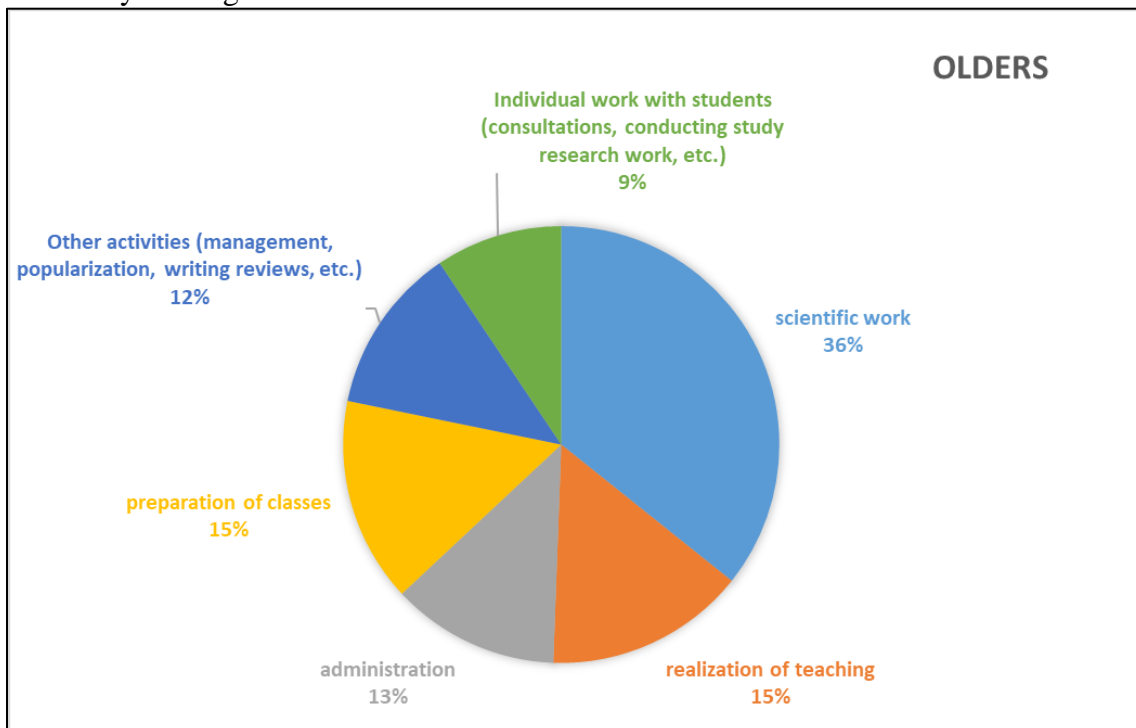
1.4 University of Novi Sad

The survey was filled in by 30 lecturers, 22 of whom were women (73.3%) and 8 men (26.7%). Lecturers from six areas were present in the sample in the following way: mathematics (13), geography (6), computer science (4), physics (3), chemistry (2) and biology (2).The survey was conducted electronically during April 2019.

The average number of years of teaching experience is 12.87 years (the standard deviation is 9.7 years). The shortest teaching experience in the sample is 1 year, while the longest teaching experience is 30 years. In the further report, we will consider lecturers and associates whose work experience is up to 12 years under the younger teaching staff, while experienced lecturers will consider lecturers with experience over 12 years. Translated to the age of the respondents, we can identify 12 years of experience with 35 years of age.

Work at the university allows for a significant individual distribution of time. For these reasons, lecturers / associates filled out how many hours of work were active during the week and how it was arranged. Average respondents said they spend 43.4 hours of work on different activities (with a standard deviation of 6.48). Operating hours vary from 30 hours to 56 hours. The amount of time spent in the week on individual activities is given in Table 1.4.1 and Figure 1.4.1 and Figure 1.4.2.

Table 1.4.1 Average distribution of working hours and comparison between young and experienced lecturers at the University of Novi Sad

activity	average number of hours all	average number of hours- young lecturers	average number of hours – experienced lecturers	p-value	significance
scientific work	**14.87** (6.11)	16.19 (5.75)	13.36 (6.36)	0.211	NO
realization of teaching	**9.23** (4.23)	9.63 (4.54)	8.79 (3.96)	0.597	NO
administration	**5.17** (4.86)	5.31 (5.99)	5.00 (3.21)	0.867	NO
preparation of classes	**7.17** (4.07)	8.00 (4.62)	6.21 (3.26)	0.238	NO
Other activities (management, popularization, writing reviews, etc.)	**3.79** (2.88)	2.13 (1.25)	5.57 (3.11)	0.0005	**YES**
Individual work with students (consultations, conducting study research work, etc.)	**3.47** (1.89)	2.63 (1.31)	4.43 (2.03)	0.006	**YES**
IN TOTAL	**43.40** (6.48)	43.75 (5.98)	43.00 (7.21)	0.758	NO

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Figure 1.4.1 Percentage distribution in relation to total time spent on young lecturers for the University of Novi Sad

YOUNGERS

- Other activities (management, popularization, writing reviews, etc.) 5%
- Individual work with students (consultations, conducting study research work, etc.) 6%
- scientific work 37%
- preparation of classes 18%
- administration 12%
- realization of teaching 22%

Figure 1.4.2 Percentage distribution in relation to total time spent on experienced lecturers for the University of Novi Sad

OLDERS

- Individual work with students (consultations, conducting study research work, etc.) 10%
- Other activities (management, popularization, writing reviews, etc.) 13%
- scientific work 31%
- preparation of classes 14%
- administration 12%
- realization of teaching 20%

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1.5 University of Kragujevac, Serbia

The survey was filled in by 47 lecturers, 29(65.91%) of whom were women and 15 (34.09%) men. Lecturers from five areas were present in the sample in the following way: mathematics (8), computer science (4), physics (10), chemistry (13) and biology (11). The survey was conducted electronically during April 2019.

The average number of years of teaching experience is 15.69 years (the standard deviation is 11.33 years). The shortest teaching experience in the sample is 1 year, while the longest teaching experience is 40 years. In the further report, we will consider lecturers and associates whose work experience is up to 12 years under the younger teaching staff, while experienced er lecturers will consider lecturers with experience over 12 years. Translated to the age of the respondents, we can identify 12 years of experience with 35 years of age.

Work at the university allows for a significant individual distribution of time. For these reasons, lecturers / associates filled out how many hours of work were active during the week and how it was arranged. Average respondents said they spend 43.72 hours of work on different activities (with a standard deviation of 17.45). Operating hours vary from 8 hours to 89 hours. The amount of time spent in the week on individual activities is given in Table 1.5.1 and Figure 1.5.1 and Figure 1.5.2.

Table 1.5.1 Average distribution of working hours and comparison between young and experienced lecturers at the University of Kragujevac

activity	average number of hours all	average number of hours- young lecturers	average number of hours – experienced lecturers	p-value	significance
scientific work	**15.36**(7.08)	16.00 (7.62)	14.79 (6.69)	0.320	NO
realization of teaching	**8.40**(4.79)	7.90 (4.88)	8.83 (4.78)	0.410	NO
administration	**4.09**(4.79)	3.05 (3.41)	5.00 (5.65)	0.175	NO
preparation of classes	**7.00**(4.49)	6.28 (3.61)	7.62 (5.14)	0.324	NO
Other activities (management, popularization, writing reviews, etc.)	**5.20**(5.01)	4.50 (3.80)	5.79 (5.84)	0.400	NO
Individual work with students (consultations, conducting study research work, etc.)	**3.88**(2.88)	3.47 (2.38)	4.21 (3.26)	0.407	NO
IN TOTAL	**43.72**(17.45)	40.83 (16.65)	46.25 (18.09)	0.304	NO

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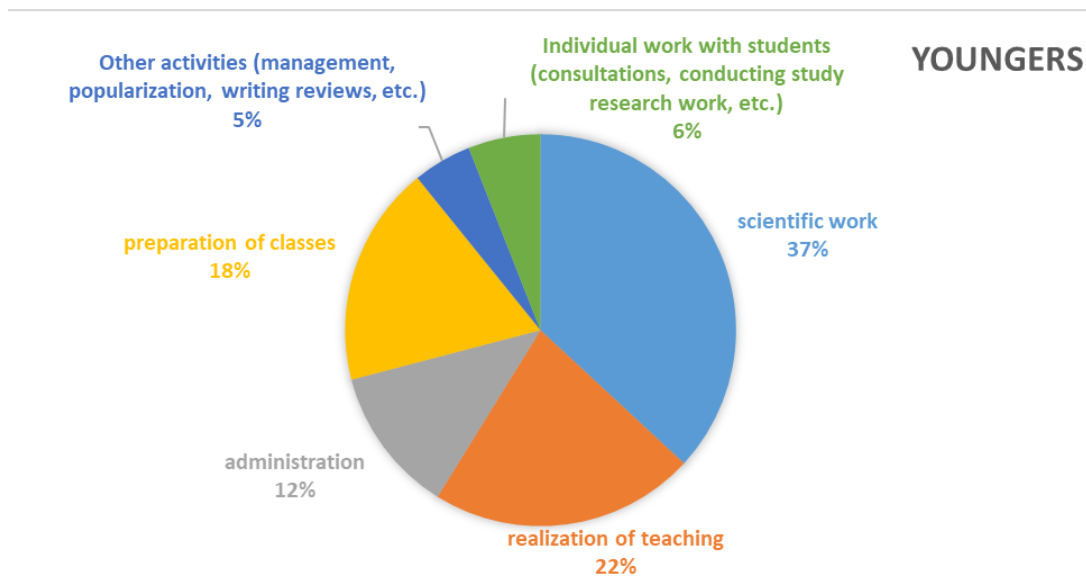Figure 1.5.1 Percentage distribution in relation to total time spent on young lecturers for the University of Kragujevac

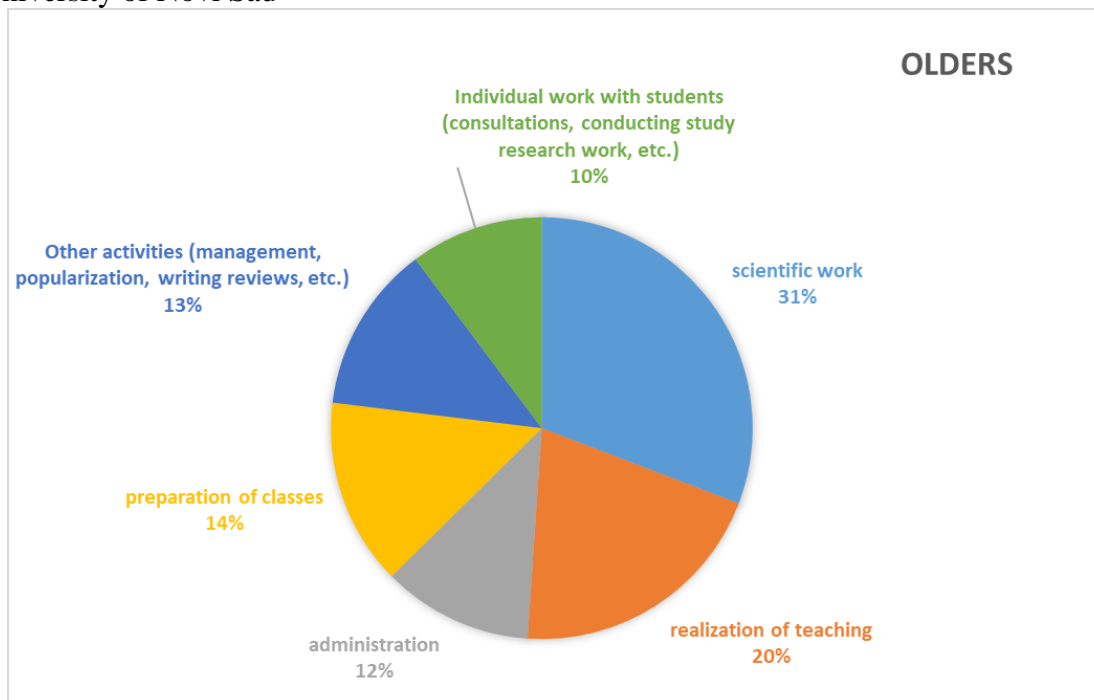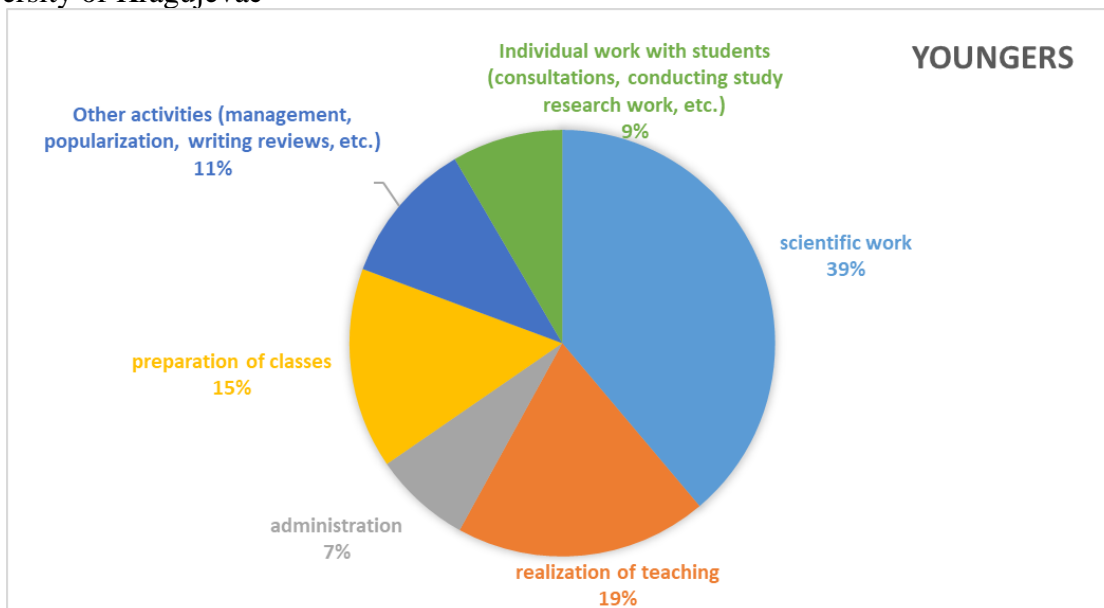
Figure 1.5.2 Percentage distribution in relation to total time spent on experienced lecturers for the University of Kragujevac

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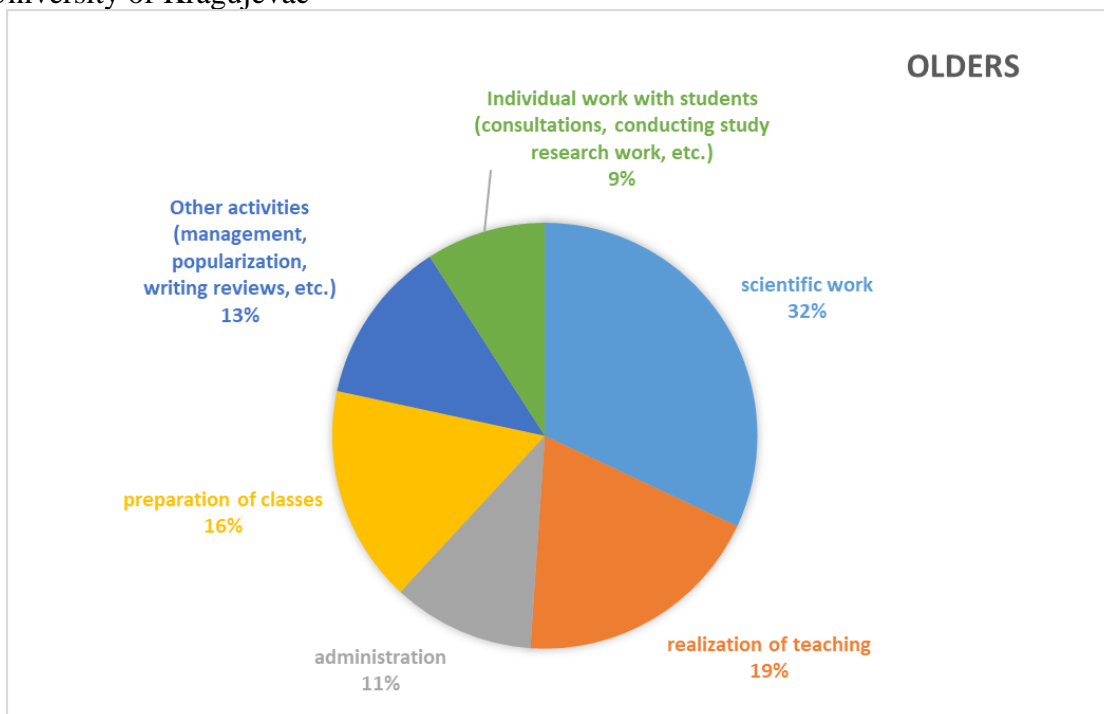
Chapter II PREVIOUS EDUCATION OF LECTURERS THAT COULD INFLUENCE ON THEIR TEACHING COMPETENCES AND OPINIONS

2.1 University of Niš, Serbia

Table 2. 1.1 Percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Nis

courses	in total	Young lecturers	Experienced lecturers
Electronic learning methodology	9 (30.00%)	2 (18.18%)	7 (36.84%)
Methodology of teaching	14 (46.67%)	3 (27.27%)	11 (57.89%)

Figure 2.1.1 Graphic representation of percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Nis
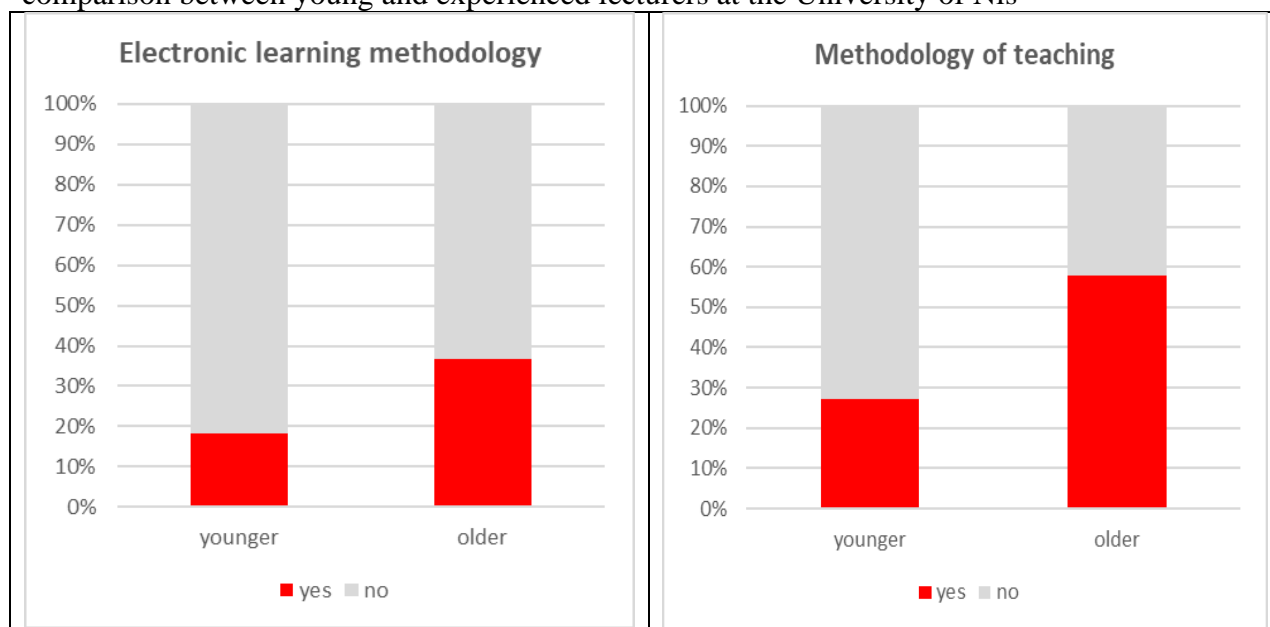
Table 2.1.2 Number distribution of the type of e-learning methodology at the University of Nis

Areas	number of respondents
Electronic publishing (Latex, HTML, XML, PDF, etc.)	6=5+1 [1]
Online Technology in Teaching	3=3+0
Open source software (MOODLE, Python, GeoGebra, MOOC, etc.)	5=3+2

[1]We note that there are cases and there are respondents who have declared that they have not been listening to the method of electronic learning but have listened to some of the contents listed in the previous table. The first one is the number of respondents who have attended the method of electronic learning, while the second one is the number of respondents who did not attend

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At Question: *Did you give at least one lecture in English? If yes, specify when and where*, less than 15%, or 4 respondents answered yes.

At Question: *Have you prepared at least one lecture or part of the lecture on the electronic platform? If yes, specify on which platform* only 3 respondents answered yes (and they used the Moodle platform or Office 365 Education).

Table 2.1.3 Percentage distribution of conference attendance and discussion with students on innovative teaching methods and comparison between young and experienced lecturers at the University of Nis

Question	Young lecturers	Experienced lecturers	IN TOTAL
Have you participated in a professional conference whose emphasis was on applying innovative teaching technologies?	3 (27.27%)	9 (47.37%)	12 (40.00%)
Have you ever discussed with students about the impact of using modern technologies on the quality of teaching and learning?	8 (72.73%)	16 (84.21%)	24 (80.00%)

2.2 Universities of Gjirokastra and Korca, Albania

Table 2. 2.1 Percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

courses	in total	Young lecturers	Experienced lecturers
Electronic learning methodology	44.79%	31.25%	13.54%
Methodology of teaching	67.71%	46.88%	20.83%

Figure 2.2.1 Graphic representation of percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Gjirokastra and Korça


Have you ever studied any of the listed disciplines during your formal education?

■ Electronic learning methodology   ■ Methodology of teaching

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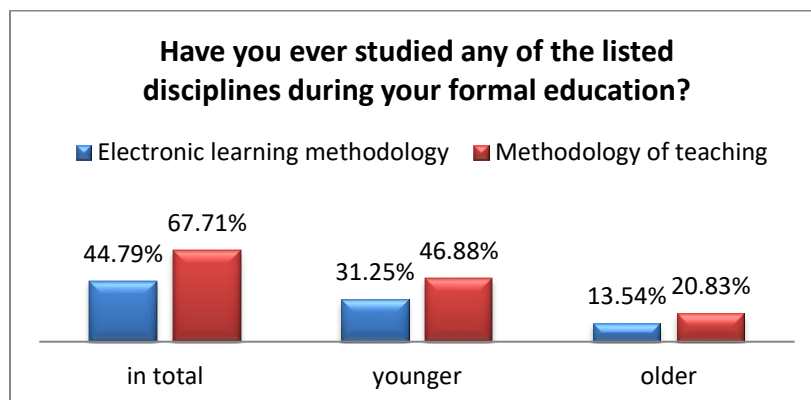
CONCLUSION: In the two Albanian universities, the majority of lecturers (67.71%) have studied traditional teaching methodologies and only 44.79% of them have studied electronic teaching methodologies. Compared to experienced lecturers, it is young lecturers who have studied to a great extent both types of teaching technologies. Of note is the very low number of experienced lecturers who have studied electronic teaching methodologies (13.54%).

Table 2.2.2 Percentage distribution of the type of e-learning methodology at the University of Gjirokastra and Korça

Discipline	YES
Electronic publishing (Latex, HTML, XML, PDF etc.)	71.88%
online technologies in teaching	46.88%
Open source software (MOODLE, Python, GeoGebra, MOOC etc.)	33.33%
I have never studied any of these disciplines	11.46%

Figure 2.2.2 Graphic representation of percentage distribution of Type of e-learning methodology for lecturers of the Universities of Gjirokastra and Korça
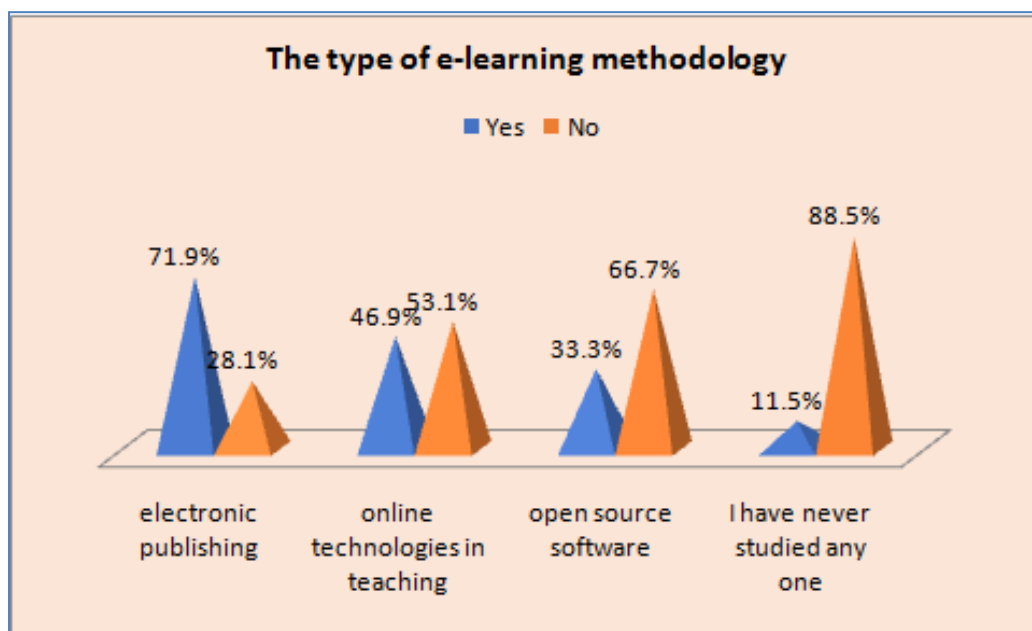
CONCLUSION: In terms of e-learning methodology, for Albanian university lecturers, electronic publishing is the main study (71.9%), followed by online technologies in teaching

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(46.9%). About 11.5% of lecturers did not complete any study in the mentioned areas. The response of the students of these universities to the same question (Figure 2.2.3) shows that the number of positive answers is almost half the value of the number of positive answers of their lecturers. This indicates that although the lecturers have studied the listed disciplines, their students do not have the opportunity.

Figure 2.2.3 Graphic representation of percentage distribution of Type of e-learning methodology by students of the Universities of Gjirokastra and Korça
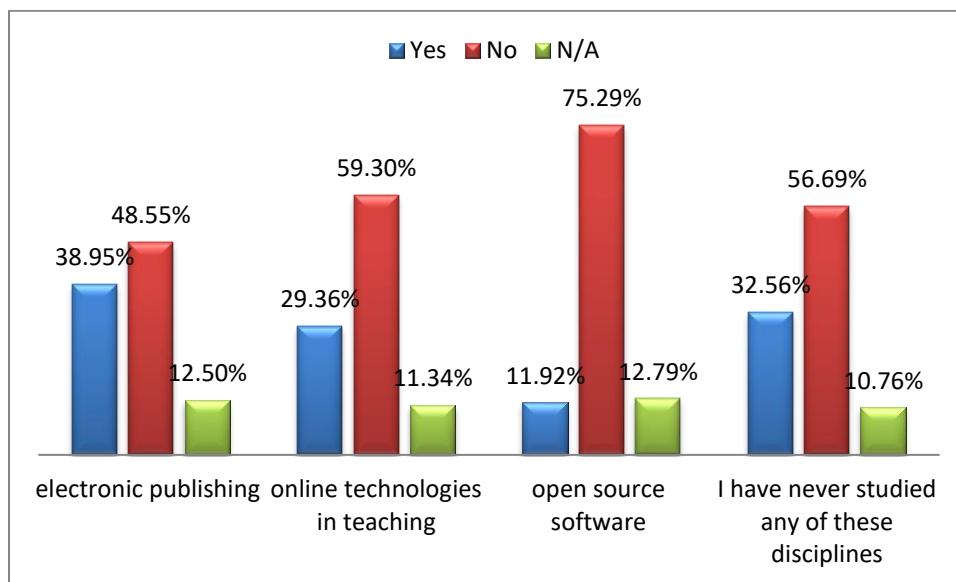
Figure 2.2.4 Graphic representation of percentage distribution of held teaching lesson in English and prepared part of lesson on electronic platform at the University of Gjirokastra and Korça
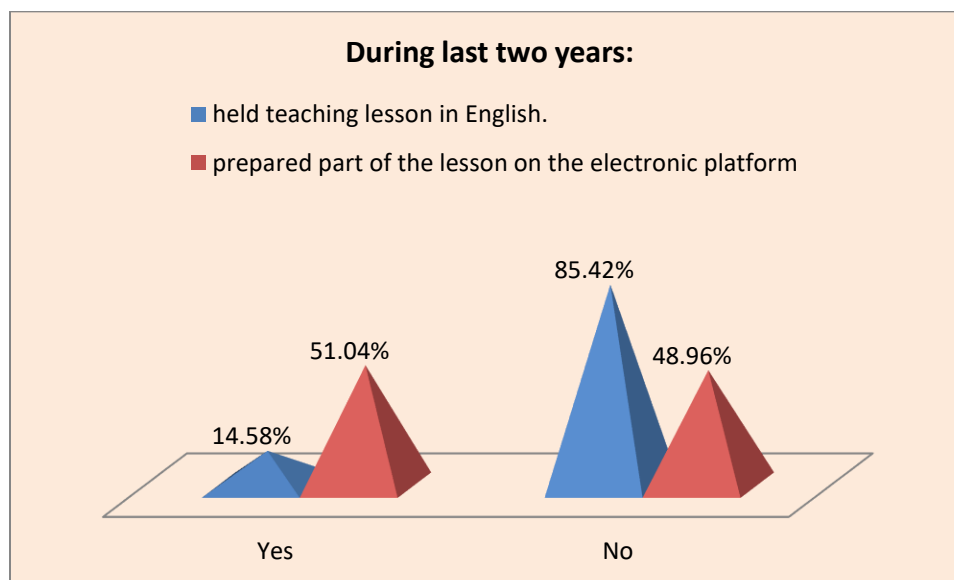
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At Question: *Did you give at least one lecture in English? If yes, specify when and where*, less than 15% answered yes.

At Question: *Have you prepared at least one lecture or part of the lecture on the electronic platform? If yes, specify on which platform* more than 50% answered yes (and they used the Moodle platform).

Table 2.2.3 Percentage distribution of conference attendance and discussion with students on innovative teaching methods and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

Question	Young lecturers	Experienced lecturers	IN TOTAL
Have you participated in a professional conference whose emphasis was on applying innovative teaching technologies?	56.52%	81.48%	63.54%
Have you ever discussed with students about the impact of using modern technologies on the quality of teaching and learning?	82.61%	88.89%	84.38%

CONCLUSION: 63.54% of lecturers participated in a professional conference focusing on the application of innovative teaching technologies and about 84% of them discussed with students the impact of using modern technologies on the quality of teaching and learning.

2.3 University of Belgrade, Serbia

Table 2.2.1 Percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Belgrade

| courses	in total	Young lecturers	Experienced lecturers
Electronic learning methodology	5 (8.93%)	1 (4.35%)	4 (12.12%)
Methodology of teaching	29 (50.88%)	9 (39.13%)	20 (58.82%)

CONCLUSION: Around 50% of lecturers have experience in Methodology of teaching, with the prevalence of experienced, but only 9% of them have experience in Electronic learning methodology (once again, the experienced lecturers have prevalence).

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Figure 2.3.1 Graphic representation of percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Belgrade
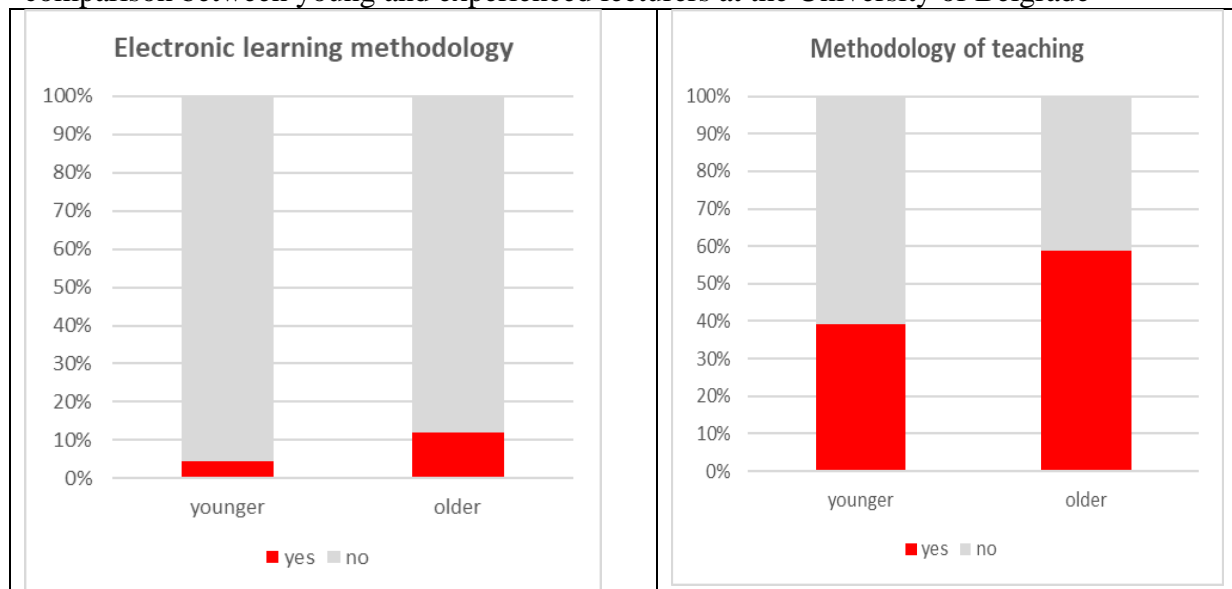
Table 2.3.2 Number distribution of the type of e-learning methodology at the University of Belgrade

Areas	number of respondents
Electronic publishing (Latex, HTML, XML, PDF, etc.)	5=3+2 [1]
Online Technology in Teaching	8=4+4
Open source software (MOODLE, Python, GeoGebra, MOOC, etc.)	5=4+1

[1]We note that there are cases and there are respondents who have declared that they have not been listening to the method of electronic learning but have listened to some of the contents listed in the previous table. The first one is the number of respondents who have attended the method of electronic learning, while the second one is the number of respondents who did not attend

At Question: *Did you give at least one lecture in English. If yes, specify when and where*, less than 1/2, or 26 respondents answered yes.

At Question: *Have you prepared at least one lecture or part of the lecture on the electronic platform? If yes, specify on which platform* the situation is reversed, 8 respondents answered yes (and they used the Moodle platform or Google Classroom), while most of the respondents (84%) had no experience in this area.

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Table 2.3.3 Percentage distribution of conference attendance and discussion with students on innovative teaching methods and comparison between young and experienced lecturers at the University of Belgrade

Question	Young lecturers	Experienced lecturers	IN TOTAL
Have you participated in a professional conference whose emphasis was on applying innovative teaching technologies?	2 (8.70%)	7 (20.59%)	9 (15.79%)
Have you ever discussed with students about the impact of using modern technologies on the quality of teaching and learning?	14 (60.87%)	16 (48.48%)	30 (53.57%)

Conclusion: Around 50% of lecturers have experience in giving at least one lecture in English, while 84% of them have no experience in using electronic platforms.

2.4 University of Novi Sad

Table 2. 4.1 Percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Novi Sad

courses	in total	Young lecturers	Experienced lecturers
Electronic learning methodology	5 (16.67%)	4 (25.00%)	1 (7.14%)
Methodology of teaching	14 (46.67%)	6 (37.50%)	8 (57.14%)

Both courses were attended by 3 lecturers, 2 younger and 1 experienced.

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Figure 2.4.1 Graphic representation of percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Novi Sad
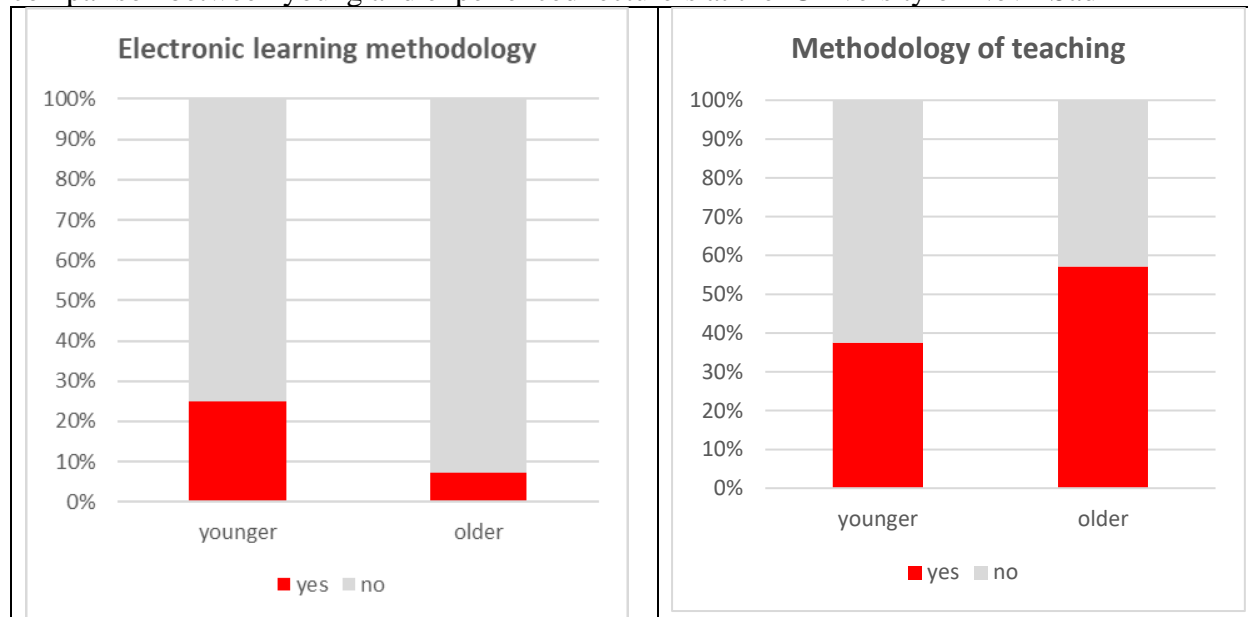

Since only 5 respondents attended the e-learning methodology, in the following table we list which areas were listened to:

Table 2.4.2 Number distribution of the type of e-learning methodology at the University of Novi Sad

Areas	number of respondents
Electronic publishing (Latex, HTML, XML, PDF, etc.)	5=4+1[1]
Online Technology in Teaching	3=1+2
Open source software (MOODLE, Python, GeoGebra, MOOC, etc.)	8=4+4

[1]We note that there are cases and there are respondents who have declared that they have not been listening to the method of electronic learning but have listened to some of the contents listed in the previous table. The first one is the number of respondents who have attended the method of electronic learning, while the second one is the number of respondents who did not attend

At Question: _Did you give at least one lecture in English. If yes, specify when and where_, less than 1/3, or 9 respondents, stated that they did not give any lecture, while 21 lecturers / associates held a lecture at a foreign university, or at conferences, or realized teaching at PMF in English language. So, it can be concluded that 70% of the respondents had the experience of using English in their profession.

At Question: _Have you prepared at least one lecture or part of the lecture on the electronic platform. If yes, specify on which platform_ the situation is reversed, 9 respondents answered yes (and they used the Moodle platform), while most of the respondents (70%) had no experience in

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this area. Please note that some lecturers / associates listed the use of LATEX tex processors as an electronic platform.

Table 2.4.3 Percentage distribution of conference attendance and discussion with students on innovative teaching methods and comparison between young and experienced lecturers at the University of Novi Sad

Question	Young lecturers	Experienced lecturers	IN TOTAL
Have you participated in a professional conference whose emphasis was on applying innovative teaching technologies?	1 (6.67%)	5 (35.71%)	6 (20.69%)
Have you ever discussed with students about the impact of using modern technologies on the quality of teaching and lerning?	6 (37.50%)	8 (57.14%)	14 (46.67%)

2.5 University of Kragujevac, Serbia

Table 2. 5.1 Percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Kragujevac

courses	in total	Young lecturers	Experienced lecturers
Electronic learning methodology	9 (19.15%)	7 (31.82%)	2 (8.00%)
Methodology of teaching	30 (63.83%)	13 (59.09%)	17 (68.00%)

Figure 2.5.1 Graphic representation of percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Kragujevac

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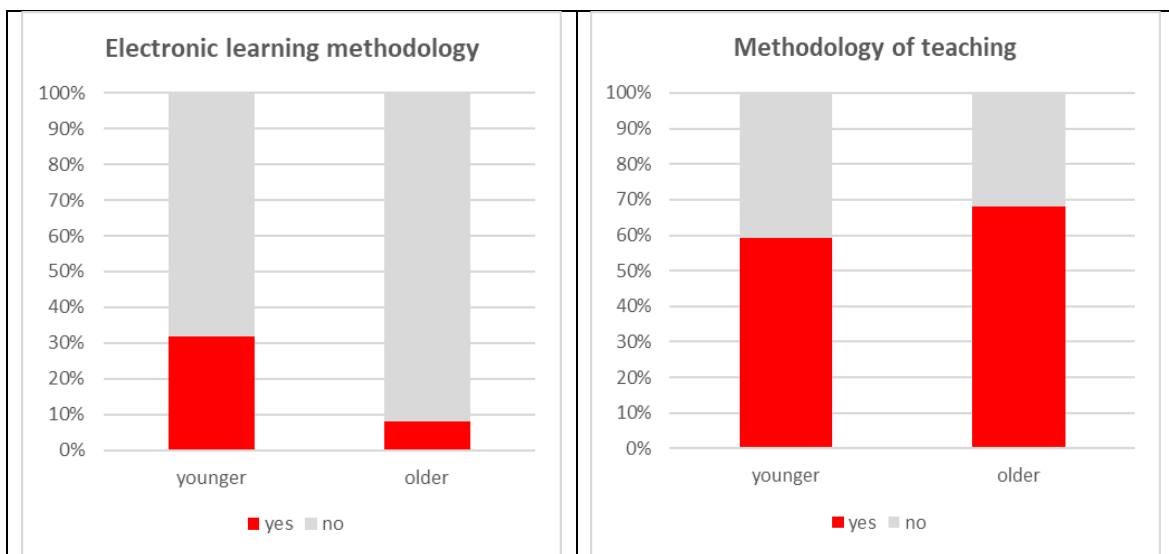
Table 2.5.2 Number distribution of the type of e-learning methodology at the University of Kragujevac

Areas	number of respondents
Electronic publishing (Latex, HTML, XML, PDF, etc.)	10=5+5 [1]
Online Technology in Teaching	5=2+3
Open source software (MOODLE, Python, GeoGebra, MOOC, etc.)	13=9+4

[1]We note that there are cases and there are respondents who have declared that they have not been listening to the method of electronic learning but have listened to some of the contents listed in the previous table. The first one is the number of respondents who have attended the method of electronic learning, while the second one is the number of respondents who did not attend

At Question: *Did you give at least one lecture in English. If yes, specify when and where*, less than 40%, or 18 respondents answered yes.

At Question: *Have you prepared at least one lecture or part of the lecture on the electronic platform? If yes, specify on which platform*11 respondents answered yes (and they used the Moodle platform, Office Impress, but 8 respondents said "Power Point").

Table 2.5.3 Percentage distribution of conference attendance and discussion with students on innovative teaching methods and comparison between young and experienced lecturers at the University of Kragujevac

Question	Young lecturers	Experienced lecturers	IN TOTAL
Have you participated in a professional conference whose emphasis was on applying innovative teaching technologies?	4 (18.18%)	5 (20.00%)	9 (19.15%)

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Have you ever discussed with students about the impact of using modern technologies on the quality of teaching and learning?	16 (72.73%)	20 (80.00%)	36 (76.60%)

Chapter III   Sᴇʟꜰ-ᴇꜱᴛɪᴍᴀᴛɪᴏɴ ᴏꜰ ᴛʜᴇ ǫᴜᴀʟɪᴛʏ ᴏꜰ ᴛᴇᴀᴄʜɪɴɢ ᴀɴᴅ ᴛʜᴇ ʟᴇᴄᴛᴜʀᴇʀꜱ'
ᴋɴᴏᴡʟᴇᴅɢᴇ ᴀɴᴅ ꜱᴋɪʟʟꜱ ɪɴ ᴜꜱɪɴɢ ᴍᴏᴅᴇʀɴ ɪɴꜰᴏʀᴍᴀᴛɪᴏɴ ᴛᴇᴄʜɴᴏʟᴏɢɪᴇꜱ ɪɴ ᴛᴇᴀᴄʜɪɴɢ ᴀɴᴅ
ʟᴇᴀʀɴɪɴɢ

**3.1 Self-estimation of the quality of teaching and opinions on importance of using modern
educational technologies**
Respondents answered how much the following claims are true for them on the five-level Lihter
scale (1- It's not true at all; 2 - It's not true in general; 3- Equally true and not true; 4 - Generally
true. 5. totally true)

notation	Statements
p1 (II-1)	The use of new technologies in teaching is very important for the quality of the lecture.
p2 (II-2)	Group work, multimedia presentations and modern software capabilities save valuable lecturers time.
p3 (II-3)	Student presentations and discussions save time for the teacher.
p4 (II-4)	You want to improve your teaching skills using information technology, because it would help you prepare lessons easier.
p5 (II-5)	You want to improve your teaching skills using information technology, because it will bring you more respect from students.
p6 (II-6)	You want to improve your teaching skills using information technology, because it will bring you more respect from colleagues

3.1.1 University of Niš, Serbia

Figure 3.1.1.1 Distribution of attitudes on the use of ICT in teaching at the University of Niš

	1	2	3	4	5
p1	0	1	1	22	6
p2	1	2	5	12	10
p3	2	3	11	12	2
p4	1	0	2	17	10
p5	0	7	11	11	2
p6	5	4	13	8	1

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Table 3.1.1.1 Descriptive statistics of attitudes on the use of ICT in teaching and comparison between young and experienced lecturers at the University of Niš

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mode	mean	median	mode	mean	median	mode
p1	4.1	4	4	4.182	4	4	4.053	4	4
p2	3.933	4	4	3.909	4	4	3.947	4	5
p3	3.3	3	4	3.455	3	3	3.211	3	4
p4	4.167	4	4	3.909	4	4	4.316	4	4
p5	3.258	3		3.083	3		3.368	3	3
p6	2.871	3	3	2.917	3	3	2.842	3	3

CONCLUSION: All the lecturers agree that the quality of their lectures will be better if they use the contemporary technologies in teaching. If we look at the response values, we will notice that the opinion of younger and experienced professors is almost identical about all the issues. The least number of respondents (the average for question p6 is 2.871) consider that improving their teaching skills is important for bringing greater respect from their colleagues. The results show that the greatest score (even above 4.1) got the opinion that using ICT in teaching is very important for the quality of the lecture and that it helps in easier preparation lessons. Most of them have opinion that group work, multimedia presentations and modern software capabilities save valuable lecturers time.

3.1.2 Universities of Gjirokastra and Korca, Albania

Figure 3.1.2.1 Average distribution of attitudes on the use of ICT in teaching at the University of Gjirokastra and Korça

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Table 3.1.2.1 Descriptive statistics of attitudes on the use of ICT in teaching and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mode	mean	median	mode	mean	median	mode
p1 (II-1)	4.18	4.50	5	4.06	4.00	5	4.48	5.00	5
p2 (II-2)	3.38	4.00	4	3.57	4.00	4	2.89	3.00	4
p3 (II-3)	2.88	2.00	2	3.06	3.00	2	2.41	2.00	2
p4 (II-4)	4.02	4.00	5	4.06	4.00	5	3.93	4.00	5
p5 (II-5)	3.33	4.00	4	3.32	4.00	4	3.37	3.00	3
p6 (II-6)	3.10	3.00	4	3.17	4.00	4	2.93	3.00	2

Figure 3.1.2.2 Average distribution of attitudes on the use of ICT in teaching and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

	p1 (II-1)	p2 (II-2)	p3 (II-3)	p4 (II-4)	p5 (II-5)	p6 (II-6)
YOUNGER	4.06	3.57	3.06	4.06	3.32	3.17
OLDER	4.48	2.89	2.41	3.93	3.37	2.93

CONCLUSION: All the lecturers agree that the quality of their lectures will be better if they use the contemporary technologies in teaching.. The least number of respondents (the average for question p3 is 2.88) consider that student presentations and discussions save time for the teacher . The results show that the greatest score (about 4.12) got the opinion that using ICT in teaching is very important for the quality of the lecture and that it helps in easier preparation lessons. Concerning Attitudes on the use of ICT in teaching, a qualitative difference was observed between young and experienced lecturers only for questions p2 and p3. Younger lecturers are much more optimistic than experienced lecturers about "Group work, multimedia presentations and modern software save valuable lecturers time" and "Student presentations and discussions save time for the teacher".

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Students' assessment of the quality of teaching and their opinion on the importance of using modern technologies in education are generally above the average of their perception. They generally agree or completely agree (4.19) that the use of new technologies in teaching is important to prepare them for 21st century life and work.

Figure 3.1.2.3 Average evaluation of the indicators that determine the quality of teaching and learning and the importance of using modern educational technologies for the students of Gjirokastra and Korça Universities

3.1.3 University of Belgrade, Serbia

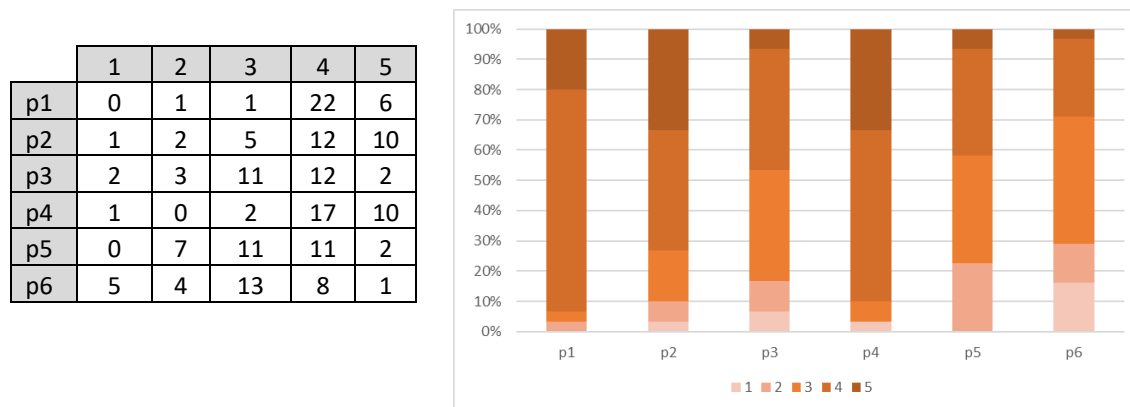Figure 3.1.3.1 Distribution of attitudes on the use of ICT in teaching at the University of Belgrade

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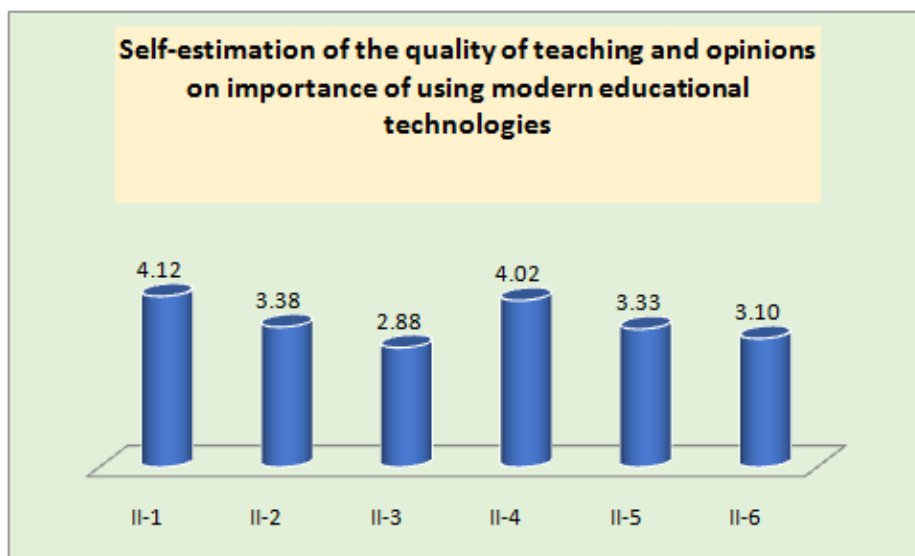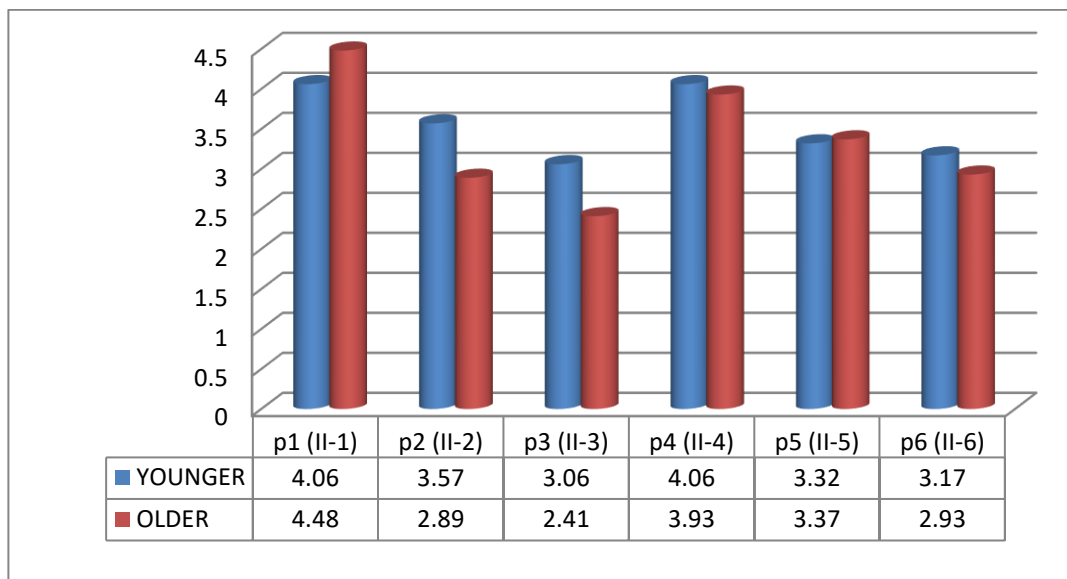|	1	2	3	4	5
p1	1	3	13	28	12
p2	3	7	14	22	10
p3	4	13	24	11	5
p4	4	3	13	21	16
p5	15	13	14	9	6
p6	16	15	13	9	4

Table 3.1.3.1 Descriptive statistics of attitudes on the use of ICT in teaching and comparison between young and experienced lecturers at the University of Belgrade

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mode	mean	median	mode	mean	median	mode
p1	**3.825**	4	4	3.957	4	4	3.735	4	4
p2	**3.518**	4	4	3.682	4	4	3.412	4	4
p3	**3**	3	3	3.087	3	3	2.941	3	3
p4	**3.737**	4	4	3.913	4	4	3.618	4	4
p5	**2.614**	3	1	2.696	2	2	2.559	3	3
p6	**2.474**	2	1	2.435	2		2.5	2.5	3

CONCLUSION: The majority of lecturers agreed that use of new technologies in teaching has clear benefits for quality of the lecture and that group work, multimedia presentations and modern software capabilities may save valuable lecturers time. Also, majority of lecturers expressed their will to improve their teaching skills by using information technology.

3.1.4 University of Novi Sad

Figure 3.1.4.1 Distribution of attitudes on the use of ICT in teaching at the University of Novi Sad

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	1	2	3	4	5
p1	1	1	11	9	7
p2	3	2	6	13	5
p3	2	9	12	4	3
p4	2	5	5	10	7
p5	6	7	7	6	4
p6	10	10	6	2	2

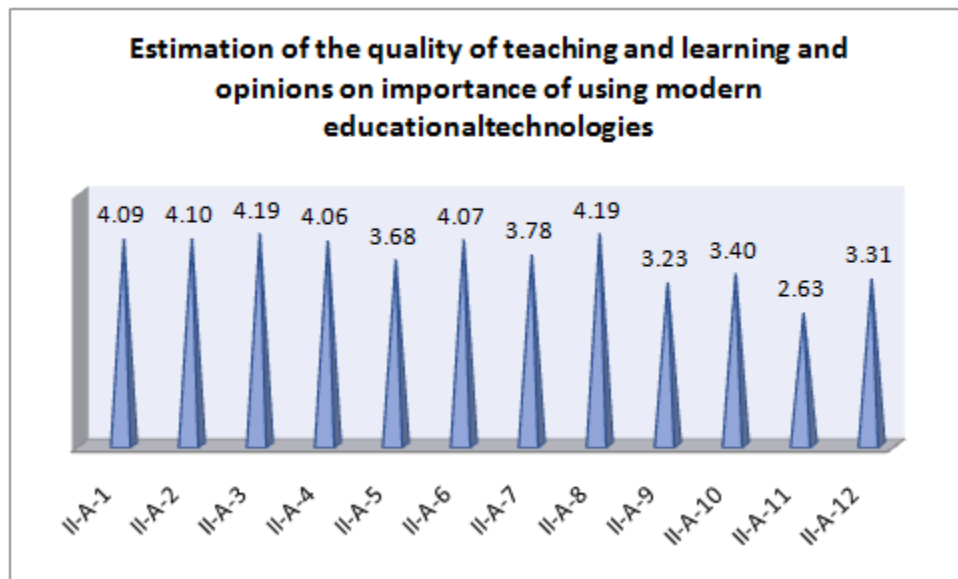Table 3.1.4.1 Descriptive statistics of attitudes on the use of ICT in teaching and comparison between young and experienced lecturers at the University of Novi Sad

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mode	mean	median	mode	mean	median	mode
p1	**3.69**	4	3	3.667	4	3	3.714	4	3
p2	**3.517**	4	4	3.563	4	4	3.462	4	4
p3	**2.9**	3	3	3	3	3	2.786	2.5	2
p4	**3.517**	4	4	3.188	3	4	3.923	4	4
p5	**2.833**	3		2.625	3	4	3.071	2.5	
p6	**2.2**	2		2	2		2.429	2	

CONCLUSION: Respondents gave their opinion on the claims why they want to improve their teaching skills using information technology (claims p4-p6). The results show that the only reason that got the score slightly above 3.5 is that ICT would help make it easier to prepare classes, while greater respect for students (p5) or colleagues (p6) is largely unimportant. It is important to mention that more than 50% of the respondents pointed out that the use of ICT is important or very important for the quality of teaching.

3.1.5 University of Kragujevac, Serbia

Figure 3.1.5.1 Distribution of attitudes on the use of ICT in teaching at the University of Kragujevac

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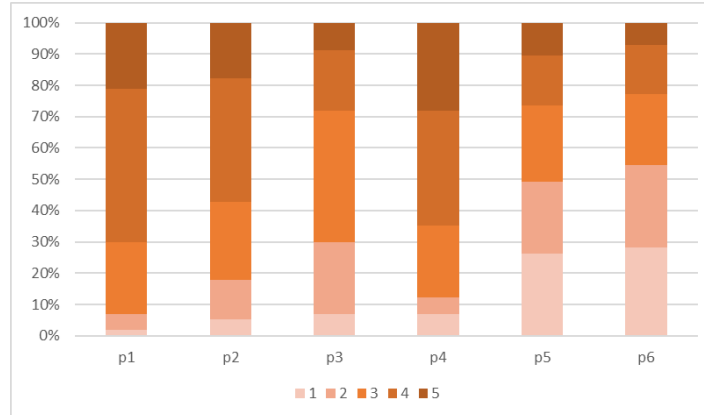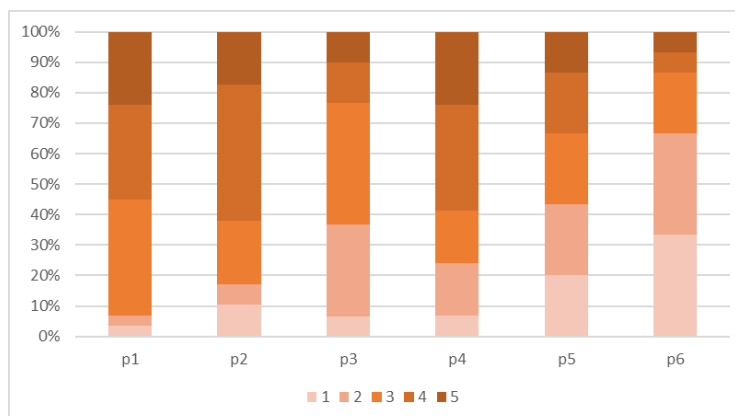|	1	2	3	4	5
p1	0	3	12	24	8
p2	0	9	12	16	9
p3	1	6	20	15	4
p4	1	6	5	20	13
p5	6	10	11	13	7
p6	11	15	8	6	7

Table 3.1.5.1 Descriptive statistics of attitudes on the use of ICT in teaching and comparison between young and experienced lecturers at the University of Kragujevac

	TOTAL			Young lecturers			Experienced lecturers		
statement	mean	median	mode	mean	median	mode	mean	median	mode
p1	3.787	4	4	3.864	4	4	3.72	4	4
p2	3.543	4	4	3.524	4	4	3.56	4	
p3	3.326	3	3	3.318	3	3	3.333	3.5	4
p4	3.844	4	4	3.714	4		3.958	4	4
p5	3.106	3	4	3	3	4	3.2	3	4
p6	2.638	2	2	2.636	2		2.64	2	2

CONCLUSION: The lecturers' responses indicate that they have a positive attitude towards the use of ICT in teaching. They are open for improving their ICT skills (the average for p4 is the highest, 3.844), and at the same time they consider ICT to be very important for the quality of teaching (the average for question p1 is 3.787). Notice that the answers of young and experienced er lecturers are pretty much the same.

3.2 Self-assessment of the lecturers' knowledge and skills in using modern information technologies in teaching and learning

Respondents assessed their knowledge of ICT on the five-level Lihter scale (1- Not true 2- not true in general 3- neither not true nor true 4-true in general 5-totally true), indicating in what degree they agreed with the following claims

notation	statement
t1	The level of your knowledge and skills in applying Office software package:
t2	Level of your knowledge and skills in applying Open Source software:
t3	Level of your knowledge and skills in implementing Web conferencing software:
t4	Level of your skills in the application of Learning Management System (LMS):
t5	The level of your knowledge and skills in applying online learning platform:
t6	Use electronic materials (presentations) as teaching materials.

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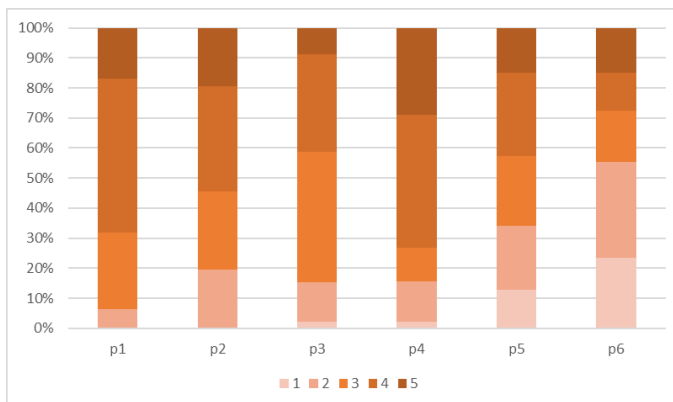| t7	Use electronic books / textbooks as teaching materials.
t8	Use animations / movies as teaching material.
t9	Use forums and other forms of online communication in teaching and learning.
t10	Use online courses as a teaching material.
t11	Use web conferences as a teaching material.
t12	Use databases in teaching and learning.
t13	You are open to communicating with students via social networks (Facebook, Twitter, etc.).

3.2.1 University of Niŝ, Serbia

Table 3.2.1.1 Descriptive statistics of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Nis

	TOTAL			Young lecturers			Experienced lecturers		
statement	mean	median	mode	mean	median	mode	mean	median	mode
t1	4.30	4	5	4.17	4	4	4.39	4.5	5
t2	3.19	3	3	3.08	3	3	3.26	3	3
t3	2.23	2	3	2.33	2	2	2.16	2	3
t4	2.00	2		1.83	2	2	2.11	2	1
t5	2.58	3	3	2.42	3	3	2.68	3	
t6	4.00	4	4	3.42	4	4	4.37	4	4
t7	3.94	4	4	3.83	4	4	4.00	4	4
t8	3.29	4	4	2.92	3		3.53	4	4
t9	2.63	3	3	2.67	3	3	2.61	2.5	1
t10	2.45	2	2	2.75	2.5	2	2.26	2	1
t11	1.84	2	1	1.67	1	1	1.95	2	1
t12	2.61	3		2.42	3	3	2.74	3	1
t13	3.23	3		3.25	3	3	3.21	4	4

Figure 3.2.1.1 Average distribution of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Nis

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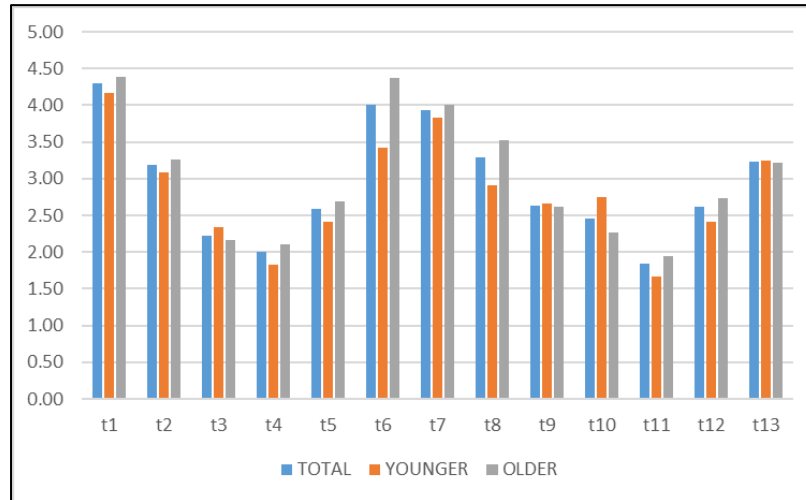
CONCLUSION: As it can be seen, the assessments of young and experienced er lecturers are pretty uniform here, too. The respondents assessed their knowledge and skills related to the Office software package with very high score (4.30) as well as using of electronic materials (presentations) as teaching materials (average score for t6 is 4.00) and using of electronic books/textbooks as teaching materials (average 3.94). Very rarely lecturers use web conferences as a teaching material (1.84) and most of them have undeveloped knowledge/skills on using LMS, Moodle for example (average 2.00). The self-assessment for all other questions is less than 3, or very little above 3 what indicates that improving ICT knowledge and skills in teaching process is more than necessary.

3.2.2 Universities of Gjirokastra and Korca, Albania

Figure 3.2.2.1 Average distribution of self assessments of ICT competences at the University of Gjirokastra and Korça

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Table3.2.2.1 Descriptive statistics of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mode	mean	median	mode	mean	median	mode
t1 (III-1)	4.44	5.00	5	4.47	5.00	5	4.37	4.00	4
t2 (III-2)	3.35	4.00	4	3.21	3.00	4	3.76	4.00	5
t3 (III-3)	3.67	4.00	5	3.70	4.00	5	3.59	4.00	3
t4 (III-4)	3.01	3.00	3	3.00	3.00	3	3.04	3.00	3
t5(III-5)	3.65	4.00	4	3.59	4.00	4	3.81	4.00	4
t6(III-6)	3.90	4.00	5	3.83	4.00	5	4.07	4.00	4
t7(III-7)	3.85	4.00	5	3.93	4.00	5	3.67	4.00	5
t8(III-8)	2.55	2.00	1	2.56	2.00	1	2.52	2.00	1
t9(III-9)	2.64	2.00	2	2.63	2.00	2	2.67	2.00	2
t10(III-10)	2.16	2.00	1	2.06	2.00	1	2.41	2.00	1
t11(III-11)	2.05	2.00	1	2.06	2.00	1	2.04	1.50	1
t12(III-12)	3.01	3.00	3	2.84	3.00	3	3.44	4.00	5
t13(III-13)	2.96	3.00	2	2.91	3.00	2	3.07	3.00	5

Figure 3.2.2.2 Average distribution of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

	III-1	III-2	III-3	III-4	III-5	III-6	III-7	III-8	III-9	III-10	III-11	III-12	III-13
YOUNGER	4.47	3.21	3.70	3.00	3.59	3.83	3.93	2.56	2.63	2.06	2.06	2.84	2.91
OLDER	4.37	3.76	3.59	3.04	3.81	4.07	3.67	2.52	2.67	2.41	2.04	3.44	3.07

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CONCLUSION: As it can be seen, the assessments of young and experienced er lecturers are pretty uniform here, too. The respondents assessed their knowledge and skills related to the Office software package with very high score (4.44) as well as using of electronic materials (presentations) as teaching materials (average score for t6 is 3.90) and using of electronic books/textbooks as teaching materials (average score for t7 is 3.85). Very rarely lecturers use web conferences as a teaching material (2.05) and use online courses as a teaching material (average 2.16). Self-assessment for a significant part of the questions is less than 3, or very little above 3, which indicates that improving ICT knowledge and skills in the learning process is more than necessary.

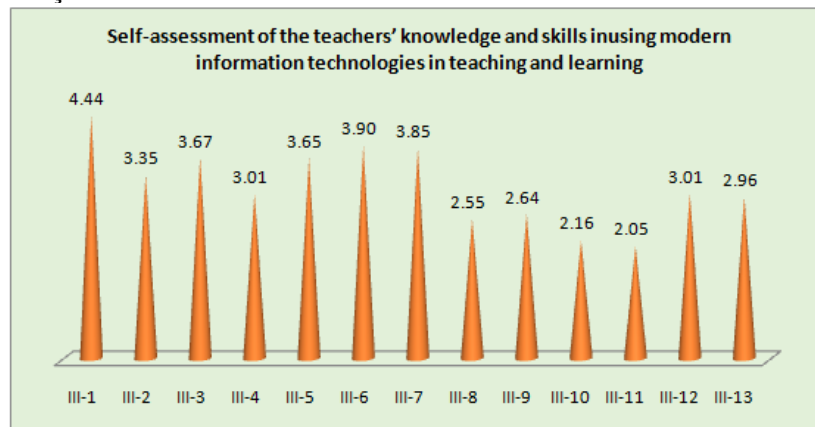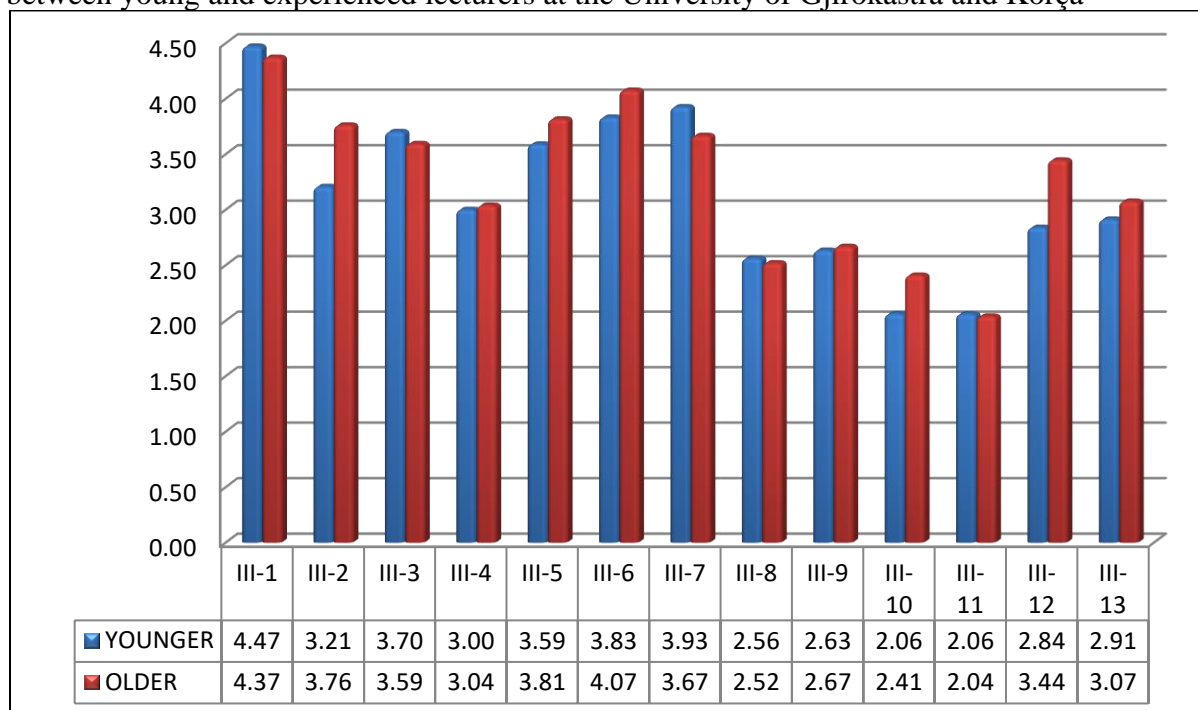### 3.2.3 University of Belgrade, Serbia

Table 3.2.3.1 Descriptive statistics of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Belgrade

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mode	mean	median	mode	mean	median	mode
t1	4.30	4	4	4.43	4	4	4.21	4	4
t2	2.80	3	2	2.78	3	3	2.82	2	2
t3	2.09	2	1	1.74	1	1	2.32	2	2
t4	1.53	1	1	1.30	1	1	1.68	1	1
t5	2.04	2	1	1.61	1	1	2.32	2	
t6	4.65	5	5	4.74	5	5	4.59	5	5
t7	4.04	4	5	3.83	4	5	4.18	4.5	5
t8	4.02	4	5	4.26	5	5	3.85	4	5
t9	2.44	2	1	2.65	2	1	2.29	2	1
t10	2.11	2	1	1.96	1	1	2.21	2	1
t11	1.46	1	1	1.30	1	1	1.58	1	1
t12	3.05	3	3	2.96	3	3	3.12	3	
t13	1.96	1	1	2.00	1	1	1.94	1	1

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Figure 3.2.3.1 Average distribution of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Belgrade
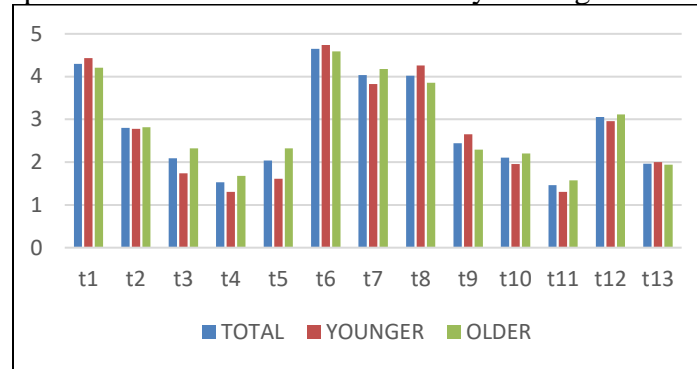
CONCLUSION: It seems that lecturers have a good level of knowledge and skills in applying Office software package, and using electronic materials (presentations, books/textbooks, animations/movies, databases) in teaching. As opposite, they have less knowledge and skills in applying Open Source software, Web conferencing software, Leadership Learning Software (LMS), forums or social networks in teaching, and they rarely organized classes in form of online courses or web conferences;

3.2.4 University of Novi Sad

Table 3.2.4.1 Descriptive statistics of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Novi Sad

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mode	mean	median	mode	mean	median	mode
t1	**4.267**	4	4	**4.313**	4	4	**4.214**	4	4
t2	**3.267**	3.5	4	**3.188**	3	2	**3.357**	4	4
t3	**2.6**	2	2	**2.438**	2	2	**2.786**	2.5	1
t4	**1.9**	1	1	**1.938**	1	1	**1.857**	1	1
t5	**2.867**	3	3	**2.688**	3	3	**3.071**	3	
t6	**4.2**	5	5	**4.063**	5	5	**4.357**	5	5
t7	**3.767**	4	5	**4**	4	5	**3.5**	4	5
t8	**3.067**	3	1	**2.938**	3	1	**3.214**	3.5	4
t9	**2.767**	2.5	2	**2.375**	2	2	**3.214**	3.5	4
t10	**2.5**	2	1	**2.188**	2		**2.857**	3	1
t11	**1.733**	1	1	**1.625**	1	1	**1.857**	1	1
t12	**2.724**	3	1	**2.938**	3	1	**2.462**	2	1
t13	**2.733**	2	1	**2.875**	2.5		**2.571**	2	1

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Figure 3.2.4.1 Average distribution of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Novi Sad
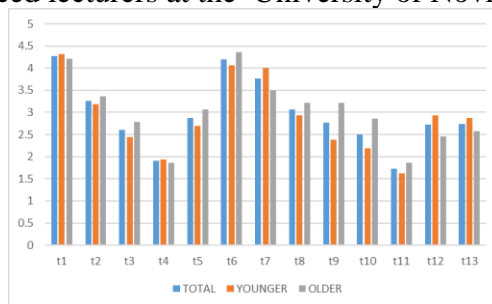

CONCLUSION: respondents only assessed their knowledge and skills in applying Office with a high score (4.27), although it is not specified what part of the Office they know. It can be assumed that they know Office, Word, Excel and PowerPoint because the vast majority of respondents answered positively to t6, i.e. to question of using electronic materials. More than half of the respondents said they would use electronic books / textbooks as teaching tools (average score 3.77).

Very rarely respondents use web-based material as a teaching medium (average 1.73), and their knowledge and skills in the application of management software to students are rated negatively (average 1.9).

3.2.5 University of Kragujevac, Serbia

Table 3.2.5.1 Descriptive statistics of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Kragujevac

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mode	mean	median	mode	mean	median	mode
t1	4.13	4	4	4.36	4	4	3.92	4	4
t2	3.16	3	4	3.38	4	4	2.96	3	
t3	2.40	2	2	2.68	2	2	2.16	2	1
t4	1.63	1	1	1.82	1	1	1.46	1	1
t5	2.23	2	1	2.50	3	3	2.00	2	2
t6	3.93	4	5	3.91	4	5	3.96	4.5	5
t7	3.43	4	5	3.64	4	5	3.24	3	3
t8	3.38	4	5	3.59	4		3.20	3	
t9	2.35	2	1	2.68	2.5	1	2.04	2	1
t10	2.43	2	1	2.59	2	2	2.28	2	1
t11	1.76	1	1	2.00	2	1	1.54	1	1
t12	2.83	3	3	2.95	3	3	2.71	3	3
t13	2.51	2	1	2.73	2	1	2.32	2	1

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Figure 3.2.5.1 Average distribution of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Kragujevac
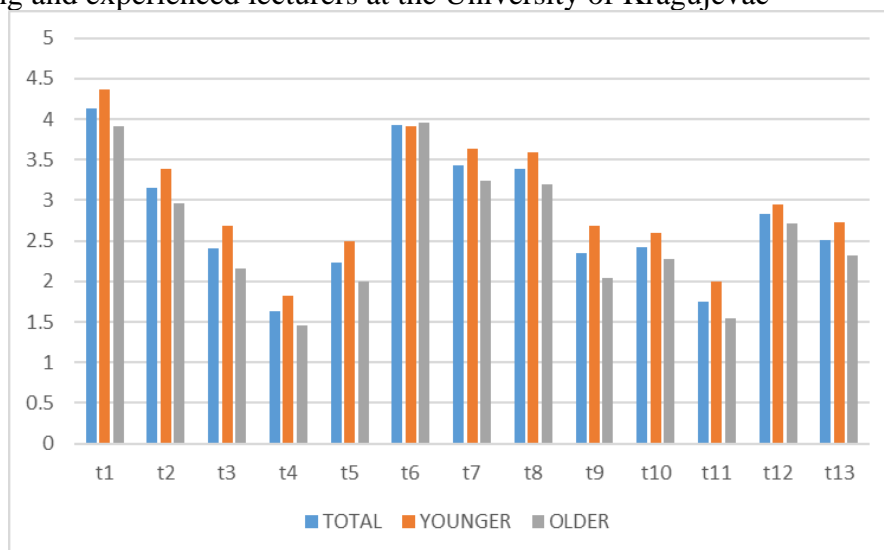
CONCLUSION: Lecturers have the highest confidence in their knowledge and skills related to the Office software package (the average for question p1 is 4.13), the use of electronic materials (presentations), electronic books and films as teaching material (averages for question p6, p7 and p8 are 3.93, 3.43, 3.38), as well as knowledge and skills related to using Open Source software (the average for question p1 is 3.16). For all other questions, the average is less than 3, which indicates that there is a significant space for improving the ICT skills of lecturers. Experienced er lecturers generally assessed their ICT competences less well.

Chapter IV   THE USING ONLINE PLATFORMS TECHNOLOGY IN TEACHING

4.1 University of Niŝ, Serbia

Figure 4.1.1 Percentage distribution of the benefits of using online technologies in teaching and learning at the University of Nis

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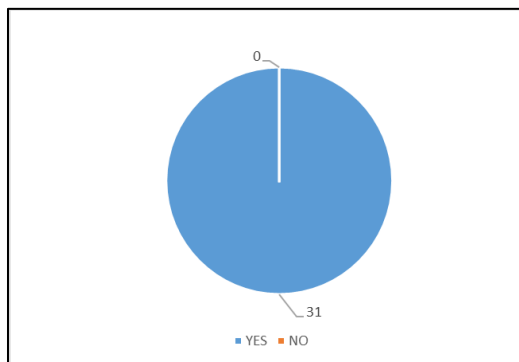
Table 4.1.1 Percentage distribution of benefits of using online technologies in teaching and learning at the University of Nis

Benefit	YES	%
Save time	14	45.16%
It facilitates the preparation of classes	16	51.61%
Increases students' level of interest	26	83.87%
Increases the quality of teaching materials	23	74.19%
It makes learning easier	21	67.74%
Improves communication between lecturers and students	20	64.52%

CONCLUSION: All the lecturers (100%) notice the benefits of using ICT in the teaching and learning, and they think that, the most important advantage of using modern technologies in teaching and learning, is increasing student level of interest, but the benefits like increasing the quality of teaching materials (74.19%), easier learning (67.74%) and better communication between lecturers and students (64.52%) are very important, too.

Table 4.1.2 Percentage distribution of using some free online learning platforms for courses at the University of Nis

Moodle	4	13.33%
Nasport	1	3.33%
teaching platform	1	3.33%
Coursera	1	3.33%
No	24	80.00%

CONCLUSION: Unfortunately, most of the respondents (80.00%) do not use any learning platform. The greatest number of lecturers who work on platforms use Moodle (13.33%). Using of online free learning platforms is needed to be promoted and implemented in teaching because of their importance for modernization of education.

Table 4.1.3 Percentage distribution of student benefits of using online technologies in teaching and learning at the University of Nis

	YES	%
Enable students easier and faster access to learning materials	29	93.55%
Enable students easier and faster access to relevant information	20	64.52%
Allow students access to materials at any time	26	83.87%
Contribute to the realization of the active role of students	20	64.52%
Contributes to the individualization of learning	13	41.94%
Improves communication between lecturers and students	14	45.16%

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Figure 4.1.2 Percentage distribution of factors affecting the implementation of modern technologies at the University of Nis

Has your institution developed a system for electronic student testing?

Do you think the student self test system has a positive impact on learning success?

Is your higher education institution able to provide students with high quality and expensive laboratory equipment?

Do your students have the opportunity to participate in experiments from remote locations?

Table 4.1.4 Percentage distribution of the most important barriers to applying modern teaching technologies at the University of Nis

	YES	%
Lack of ICT skills	19	61.29%
Lack of time	5	16.13%
Lack of hardware	16	51.61%
Lack of software	21	67.74%
Inability to access computers	8	25.81%

CONCLUSION: Lecturers recognize that usage of online learning platforms is very important and useful, because these platforms enable students easier and faster access to learning materials and relevant information at any time and contribute to the realization of the active role of students, but the respondents, also notice that there are significant obstacles in applying modern teaching technologies. Most of them, 67.74% recognize the lack of software and 61.29% see the

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lack of ICT skills as the main barriers. The lack of hardware is stated as a barrier in using modern technologies in teaching by 51.61% of the respondents, but this is purely financial problem.

4.2 Universities of Gjirokastra and Korca, Albania

Figure 4.2.1 Percentage distribution of the benefits of using online technologies in teaching and learning at the University of Gjirokastra and Korça

Can you see the benefits of using online technologies in teaching and learning?

■ Yes ■ No

10%

90%
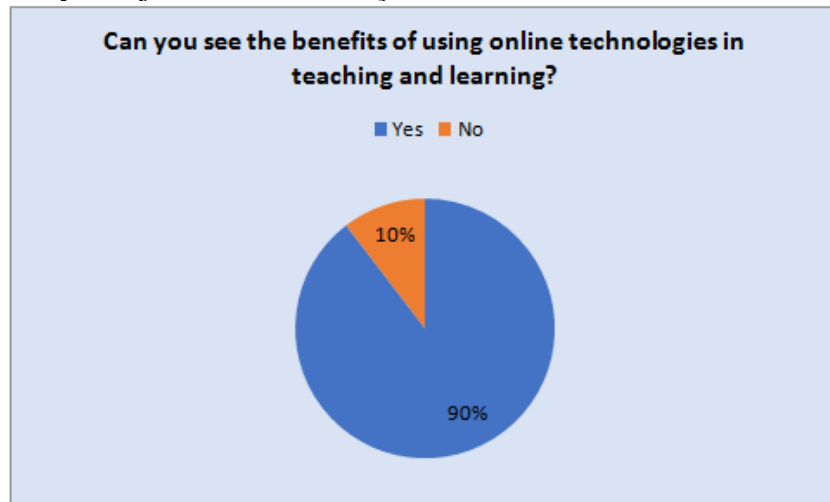
CONCLUSION: Regarding the benefits of using online technologies in teaching and learning, 90% of lecturers responded positively. 10% of lecturers have responded negatively, implying that traditional ways of teaching are still present in Albanian universities.

Figure 4.2.2 Average distribution of benefits of using online technologies in teaching and learning at the University of Gjirokastra and Korça

What are these benefits?

better communication between...	35.42%
easier learning	25.00%
higher quality of learning materials	31.25%
higher level of students' interest	53.13%
easier preparing the classes	26.04%
save time	36.46%

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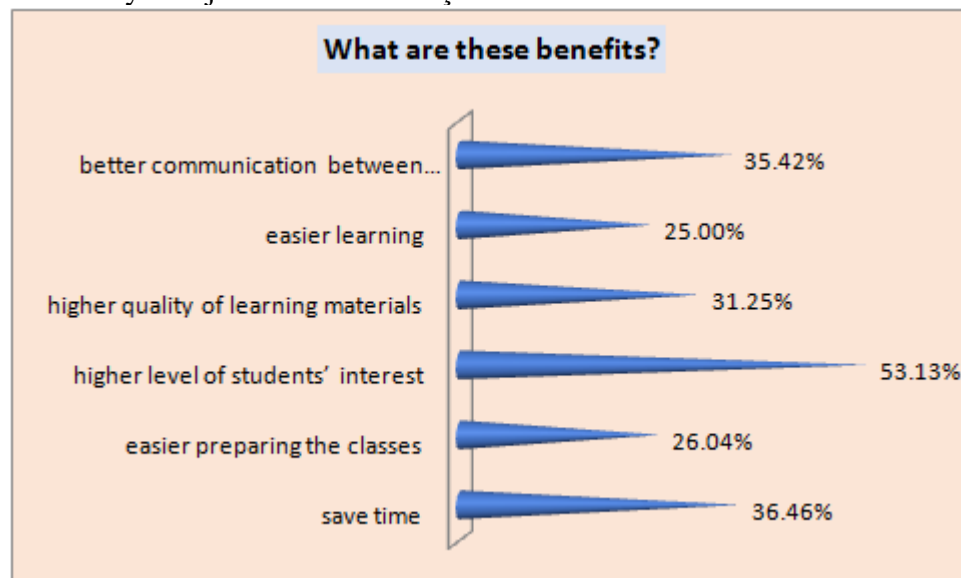
CONCLUSION: Percentage distribution of types of benefits of using online technologies in teaching and learning It is noted that over 50% of lecturers are convinced that these methods increase student interest, about 36.5% of them think that these methods save time, but only 25% they think that these methods make learning easier.

Figure 4.2.3 Percentage distribution of using some free online learning platforms for courses at the University of Gjirokastra and Korça
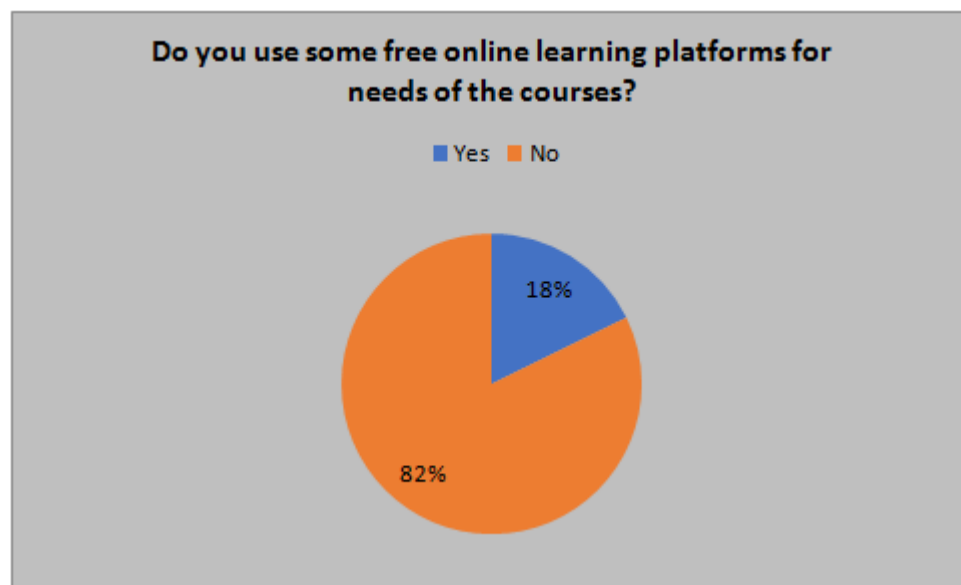
CONCLUSION: Unfortunately, most of the respondents (82.00%) do not use any learning platform. Using of online free learning platforms is needed to be promoted and implemented in teaching because of their importance for modernization of education.

Table 4.2.1 Percentage distribution of student benefits of using online technologies in teaching and learning at the University of Gjirokastra and Korça

	%
Enable students easier and faster access to learning materials	39.58%
Enable students easier and faster access to relevant information	29.17%
Allow students access to materials at any time	27.08%
Contribute to the realization of the active role of students	26.04%
Contributes to the individualization of learning	18.75%
Improves communication between lecturers and students	27.08%

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Figure 4.2.4 Percentage distribution of student benefits of using online technologies in teaching and learning at the University of Gjirokastra and Korça


Do you think that using online learning platforms can:

f	27.08%
e	18.75%
d	26.04%
c	27.08%
b	29.17%
a	39.58%
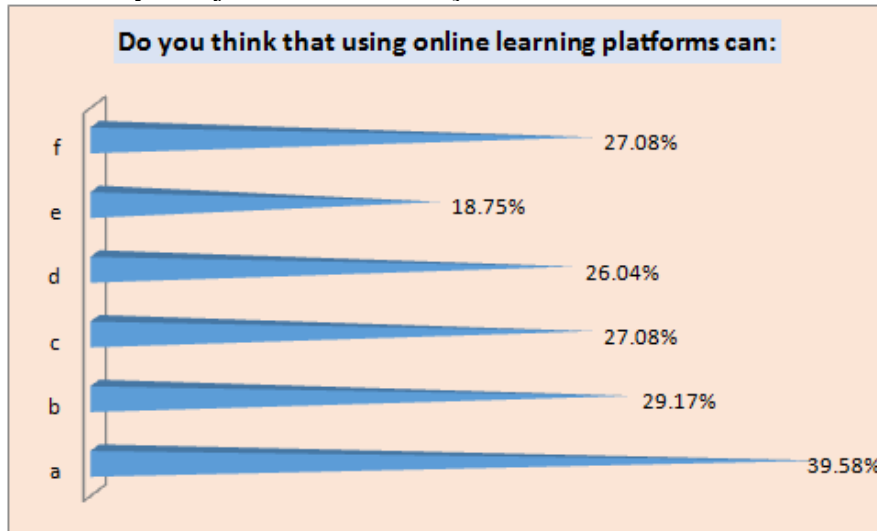
CONCLUSION: 39.56% of Albanian university lecturers think that using online technologies in teaching and learning helps to have students easier and faster access to learning materials. Only 18.75% of them think that using online technologies contributes to the individualization of learning

Figure 4.2.5 Percentage distribution of factors affecting the implementation of modern technologies at the University of Gjirokastra and Korça

Is the system for electronic testing of students developed at your institution?

■ Yes ■ No

15%
85%

Do you think that the system for self-testing of students has a positive impact on success of learning?

■ Yes ■ No

20%
80%

Is your HE institution able to provide enough quality and expensive laboratory equipment?

■ Yes ■ No

48%
52%

Are your students able to participate in experiments from remote locations?

■ Yes ■ No

45%
55%

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Table 4.2.2 Percentage distribution of the most important barriers to applying modern teaching technologies at the University of Gjirokastra and Korça

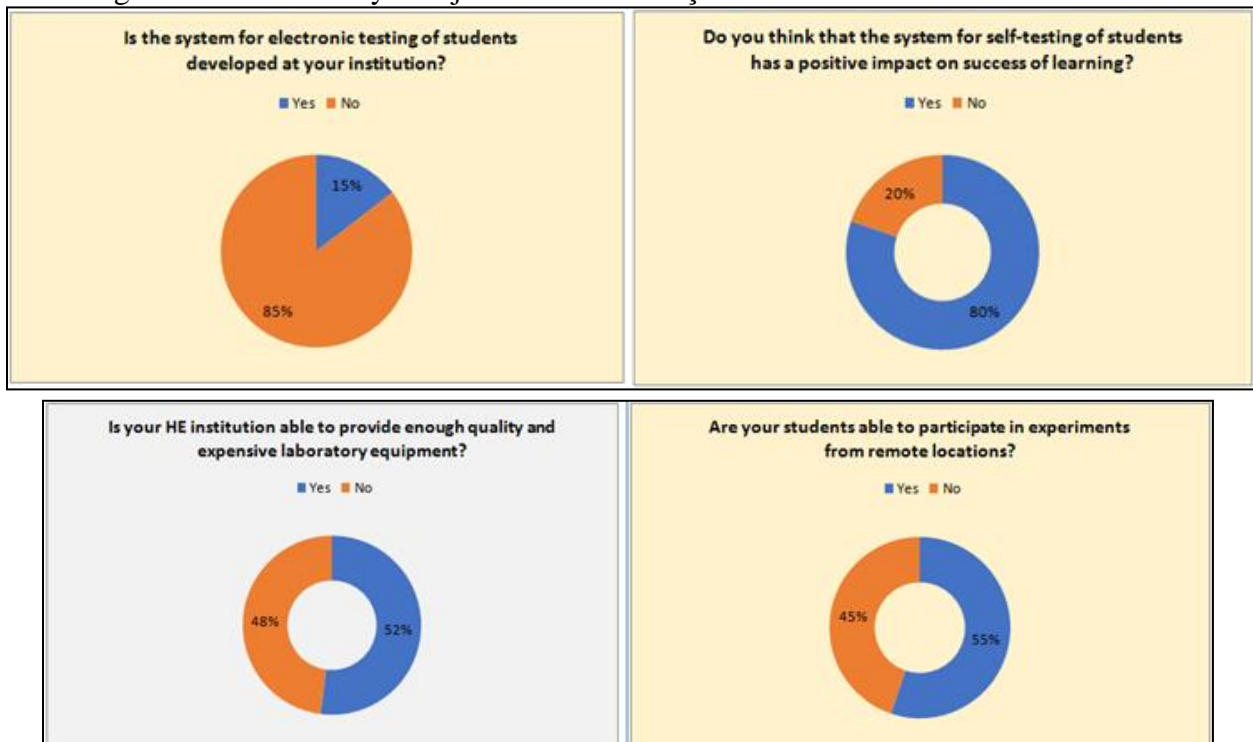|	%
Lack of ICT skills	29.17%
Lack of time	3.13%
Lack of hardware	61.46%
Lack of software	51.04%
Inability to access computers	21.88%

Figure 4.2.6 Percentage distribution of the most important barriers to applying modern teaching technologies at the University of Gjirokastra and Korça

The most significant barriers for engaging modern educational technologies in teaching and learning are:

CONCLUSION: Lecturers recognize that usage of online learning platforms is very important and useful, because these platforms enable students easier and faster access to learning materials and relevant information at any time and contribute to the realization of the active role of students, but the respondents, also notice that there are significant obstacles in applying modern teaching technologies. Most of them, 51.04% recognize the lack of software and 29.17% see the lack of ICT skills as the main barriers. The lack of hardware is stated as a barrier in using modern technologies in teaching by 61.49% of the respondents, but this is purely financial problem.

The reaction of the students of Gjirokastra and Korca universities regarding the number of their lecturers who allow them to use modern teaching technologies is presented graphically in Figure 4.2.7. It is noted that their assessment of the above is largely below the potential average, which confirms the need to increase the use of modern technologies in teaching and learning by their lecturers. Students expressed the highest dissatisfaction (1.59 out of 4) about not using their online testing systems and about not using online questionnaires in order for students to have the opportunity to self-test (1.68 out of 4).

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Figure 4.2.7 Distribution of assessment to lecturers who give students access to modern learning technologies (Universities of Gjirokastra and Korca)
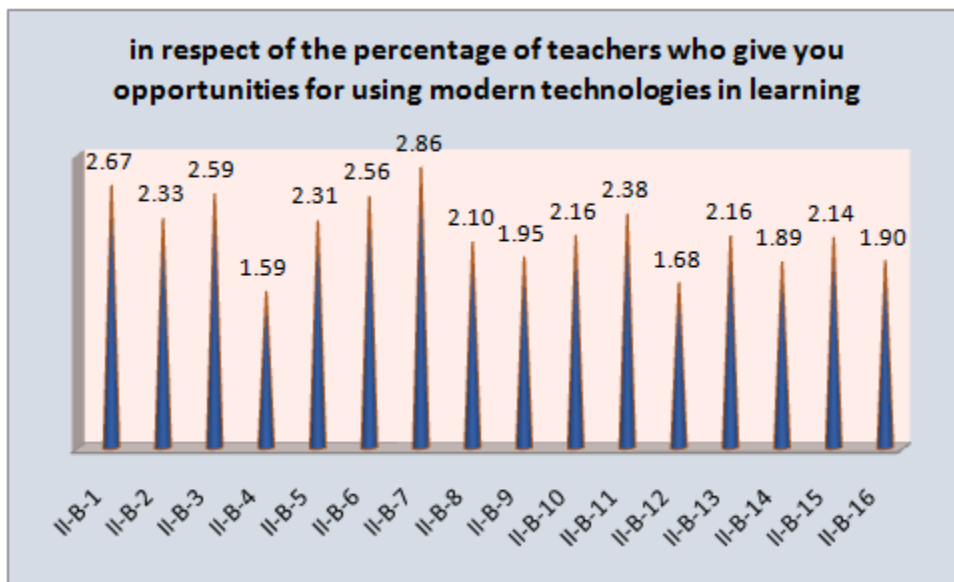
4.3 University of Belgrade, Serbia

Figure 4.3.1 Percentage distribution of the benefits of using online technologies in teaching and learning at the University of Belgrade

Table 4.3.1 Persentage distribution of benefits of using online technologies in teaching and learning at the University of Belgrade

Benefit	YES	%
Save time	23	40.35%
It facilitates the preparation of classes	24	42.11%
Increases students' level of interest	40	70.18%
Increases the quality of teaching materials	35	61.40%
It makes learning easier	37	64.91%
Improves communication between lecturers and students	31	54.39%

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CONCLUSION: Lecturers clearly notice the benefits of applying modern technology in teaching and learning, especially in categories of increasing students' level of interest, increasing the quality of teaching materials, making learning easier and improving communication with students;

Table 4.3.2 Percentage distribution of using some free online learning platforms for courses at the University of Belgrade

Moodle	2	3.51%
google classroom	6	10.53%
YouTube	1	1.75%
PhysioEx	2	3.51%
Coursera	1	1.75%
No	45	78.95%

CONCLUSION: 70% of lecturers have no previous experience with using online platforms in teaching. For the rest of 30% who have, the dominant platform is Google classroom;
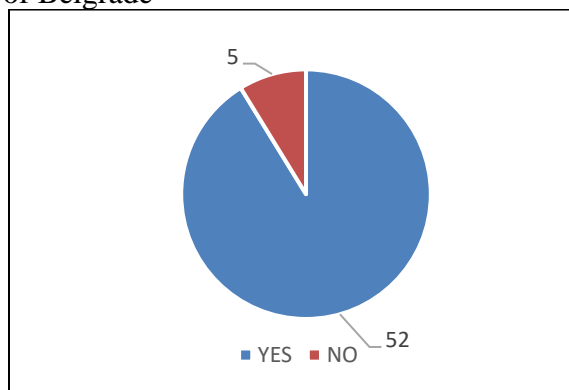
Table 4.3.3 Percentage distribution of student benefits of using online technologies in teaching and learning at the University of Belgrade

	YES	%
Enable students easier and faster access to learning materials	42	73.68%
Enable students easier and faster access to relevant information	35	61.40%
Allow students access to materials at any time	43	75.44%
Contribute to the realization of the active role of students	33	57.89%
Contributes to the individualization of learning	31	54.39%
Improves communication between lecturers and students	26	45.61%

Figure 4.3.2 Percentage distribution of factors affecting the implementation of modern technologies at the University of Belgrade

Has your institution developed a system for electronic student testing?
7
50
■ YES ■ NO

Do you think the student self test system has a positive impact on learning success?
20
37
■ YES ■ NO

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Is your higher education institution able to provide students with high quality and expensive laboratory equipment?	Do your students have the opportunity to participate in experiments from remote locations?
15 / 42 — YES ■ NO	4 / 51 — YES ■ NO

CONCLUSION: Majority of teacher agree that using online learning platform can improve students' competencies, individualization of learning, active role of students and communication between lecturers and students

Table 4.3.4 Percentage distribution of the most important barriers to applying modern teaching technologies at the University of Belgrade

	YES	%
Lack of ICT skills	43	75.44%
Lack of time	18	31.58%
Lack of hardware	28	49.12%
Lack of software	37	64.91%
Inability to access computers	17	29.82%

CONCLUSION: Lecturers claim lack of institutional support, like are systems for electronic student testing, high quality and expensive laboratory equipment, or possibility for students to remotely participate in experiments. For the majority of lecturers, the main obstacle in using modern technologies is their lack of ICT skills (75%), and lack of software (65%) and hardware (49%)

4.4 University of Novi Sad

Figure 4.4.1 Percentage distribution of the benefits of using online technologies in teaching and learning at the University of Novi Sad

1 / 29 — YES ■ NO

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Table 4.4.1 Percentage distribution of benefits of using online technologies in teaching and learning at the University of Novi Sad

Benefit	YES	%
Save time	8	26.7%
It facilitates the preparation of classes	10	33.3%
Increases students' level of interest	20	66.7%
Increases the quality of teaching materials	16	53.3%
It makes learning easier	16	53.3%
Improves communication between lecturers and students	20	66.7%

CONCLUSION: Two-thirds of the respondents see benefits from the student's angle because they the most often chosen responses were: *Increases students' level of interest* and *Improves communication between lecturers and students*, and as a minimal benefit, respondents chose time-saving.

Table 4.4.2 Percentage distribution of using some free online learning platforms for courses at the University of Novi Sad

Moodle	11	36.67%
Moodle, ASQ, Protus	1	3.33%
Moodle, Khan Academy	1	3.33%
Ne	17	56.67%

CONCLUSION: Most of the respondents do not use the platform, while Moodle is used by all respondents who worked on platforms.

Table 4.4.3 Percentage distribution of student benefits of using online technologies in teaching and learning at the University of Novi Sad

	YES	%
Enable students easier and faster access to learning materials	28	93.3%
Enable students easier and faster access to relevant information	21	70.0%
Allow students access to materials at any time	24	80.0%
Contribute to the realization of the active role of students	10	33.3%
Contributes to the individualization of learning	10	33.3%
Improves communication between lecturers and students	14	46.7%

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Figure 4.4.2 Percentage distribution of factors affecting the implementation of modern technologies at the University of Novi Sad

Has your institution developed a system for electronic student testing?	Do you think the student self test system has a positive impact on learning success?
9 20 ■ YES ■ NO	11 17 ■ YES ■ NO

Is your higher education institution able to provide students with high quality and expensive laboratory equipment?	Do your students have the opportunity to participate in experiments from remote locations?
13 15 ■ YES ■ NO	10 18 ■ YES ■ NO

Table 4.4.4 Percentage distribution of the most important barriers to applying modern teaching technologies at the University of Novi Sad

	YES	%
Lack of ICT skills	19	63.3%
Lack of time	10	33.3%
Lack of hardware	10	33.3%
Lack of software	12	40.0%
Inability to access computers	0	0.0%

CONCLUSION: Two-thirds of respondents see the lack of ICT skills as the most significant obstacle to the application of teaching technologies, while about a third of the respondents state the lack of software or hardware or time as a significant barrier.

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4.5 University of Kragujevac, Serbia

Figure 4.5.1 Percentage distribution of the benefits of using online technologies in teaching and learning at the University of Kragujevac
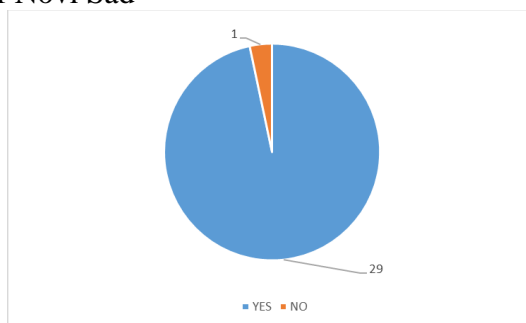

Table 4.5.1 Percentage distribution of benefits of using online technologies in teaching and learning at the University of Kragujevac

Benefit	YES	%
Save time	24	51.06%
It facilitates the preparation of classes	22	46.81%
Increases students' level of interest	33	70.21%
Increases the quality of teaching materials	27	57.45%
It makes learning easier	23	48.94%
Improves communication between lecturers and students	22	46.81%

CONCLUSION: Even more than 90% of lecturers notice the benefits of using ICT in the teaching and learning, and as the most important advantage (70.21%) of this kind of teaching and learning they consider increasing student interest in the subject matter. Probably, this teacher perspective has strong influence on positive attitude of lecturers towards improving their knowledge and skills in the use of ICT in the teaching process, which we already noticed.

Table 4.5.2 Percentage distribution of using some free online learning platforms for courses at the University of Kragujevac

Moodle	3	6.38%
Geogebra	2	4.25%
Wolfram Mathematica	1	2.12%
google classroom	1	2.12%
No	38	87.23%

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CONCLUSION: Unfortunately, only rare among lecturers, less than 10% of them, use free online learning platforms. So, these activities of lecturers need to be specially promoted and supported in order to be improved.
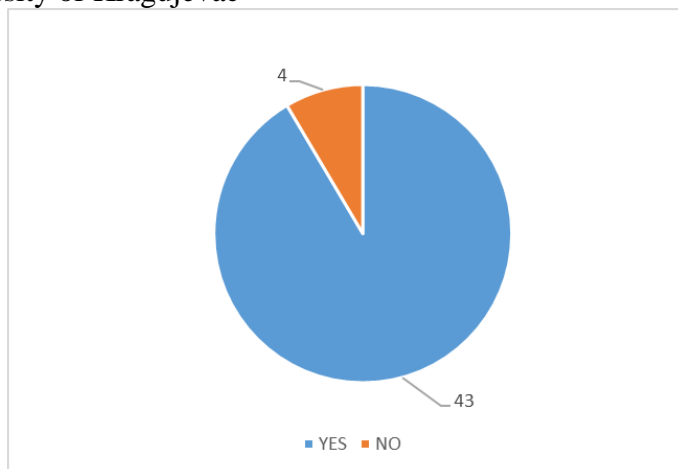
Table 4.5.3 Percentage distribution of student benefits of using online technologies in teaching and learning at the University of Kragujevac

	YES	%
Enable students easier and faster access to learning materials	39	82.98%
Enable students easier and faster access to relevant information	24	51.06%
Allow students access to materials at any time	33	70.21%
Contribute to the realization of the active role of students	18	38.30%
Contributes to the individualization of learning	23	48.94%
Improves communication between lecturers and students	17	36.17%

Figure 4.5.2 Percentage distribution of factors affecting the implementation of modern technologies at the University of Kragujevac

Has your institution developed a system for electronic student testing?
6
40
YES NO

Do you think the student self test system has a positive impact on learning success?
15
31
YES NO

Is your higher education institution able to provide students with high quality and expensive laboratory equipment?
10
37
YES NO

Do your students have the opportunity to participate in experiments from remote locations?
15
31
YES NO

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Table 4.5.4 Percentage distribution of the most important barriers to applying modern teaching technologies at the University of Kragujevac

	YES	%
Lack of ICT skills	22	46.81%
Lack of time	16	34.04%
Lack of hardware	23	48.94%
Lack of software	23	48.94%
Inability to access computers	13	27.66%

CONCLUSION: Lecturers recognize using online learning platforms as very important and useful activity, but they also admit that have significant difficulties in realizing this activity. One of the difficulties arises from lack of teacher competences (46.81%), which could be improved relatively quickly through various trainings. The second part of the difficulties is related to the equipment that institution (not) owns and this problem is purely of financial nature.

Chapter V PREVIOUS EDUCATION AND INTERESTS IN TEACHING SKILLS, THE USE OF TEACHING STRATEGIES AND PSYCHOLOGY IN TEACHING

5.1 University of Niŝ, Serbia

Figure 5.1.1 proportionally share the ratio between teaching and learning to make education more successful at the University of Nis

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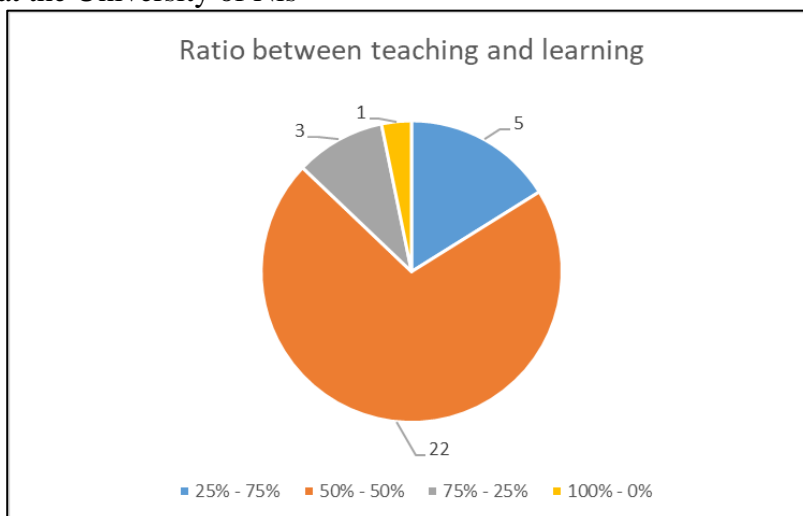Table 5.1.1   Distribution of level of skills in English at the University of Nis

	low	middle	high
Listening	1	6	24
reading	0	8	23
writing	3	11	17
talk	3	13	15

CONCLUSION: Majority of lecturers self-assessed their English language competences with high marks.

Table 5.1.2 Percentage distribution of some of the disciplines followed during formal education for lecturers of the University of Nis

Course	YES	NO
Pedagogy	14	16
Psychology	15	15
Teaching methodology	10	18
Application of new technologies in teaching	8	19
English language	27	4
You have not attended a course of any of these disciplines		14

Table 5.1.3 Percentage distribution of some of the disciplines that you helded a course or had educated yourself informally for lecturers of the University of Nis

Course	YES	NO
Pedagogy	7	21
Psychology	10	18
Teaching methodology	13	15
Application of new technologies in teaching	17	12
English	14	13
You have not taught or learned a course of any of these disciplines		16

Table 5.1.4 Distribution of the level of agreement with the fact that teaching skills of university professors are very important for the quality of their classes for the lecturers of Nis University

I totally agree	27
I partially agree	4
I do not agree	0

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Figure 5.1.2 Percentage distribution of lecturers attending conferences focusing on teaching and feedback from students regarding quality of your teaching for the lecturers of Nis University
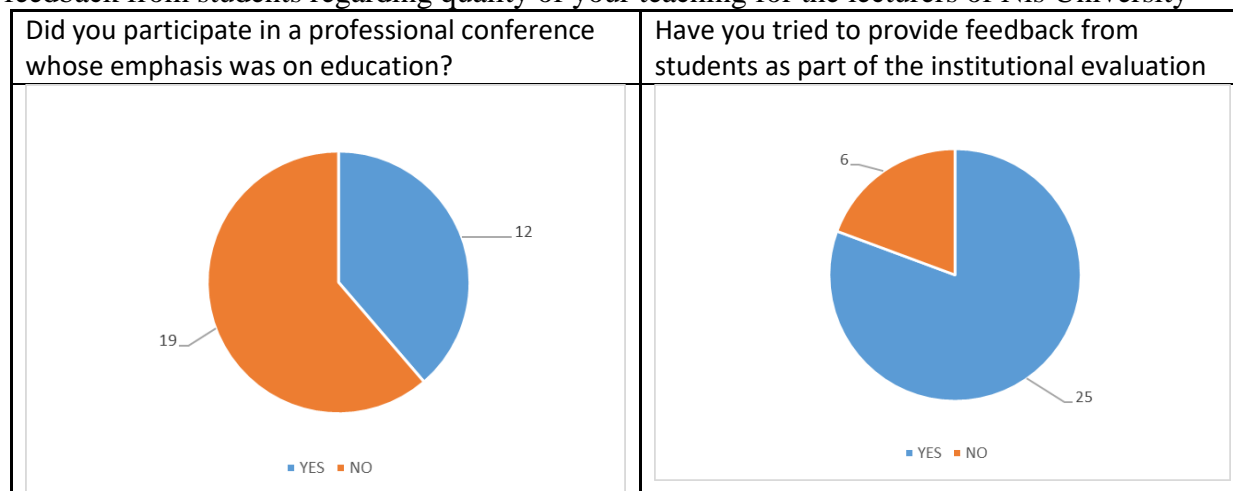
Did you participate in a professional conference whose emphasis was on education?	Have you tried to provide feedback from students as part of the institutional evaluation

Table 5.1.5 Percentage distribution of factors that have influenced the improvement of teaching skills for lecturers of the University of Nis

Get more respect from colleagues or students	9	29.03%
Possibility of easier preparation of classes	11	35.48%
Achieve better quality of teaching	27	87.10%
Attracting more students to elective courses	19	61.29%
Getting some financial or material compensation	7	22.58%
You are not interested	0	0.00%

CONCLUSION: About half of the respondents attended courses Pedagogy, Psychology, while less number of them (about one-thirds) attended courses in Teaching methodology during their formal education. Very small percent of the lecturers attended courses about using contemporary technologies in teaching, but most of them educated themselves in using ICT during their carrier. Only a quarter of them had a dedicated ICT course. Most of the lecturers consider that the teaching skills are very important for the quality of teaching process and, also 87.10% of the respondents stated that their main goal is to achieve better quality of teaching. All responses indicate that there is a strong lecturers' motivation to improve teaching, so we strongly believe that training courses and well-organized education material can give excellent results.

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5.2 Universities of Gjirokastra and Korca, Albania

Figure 5.2.1 proportionally share the ratio between teaching and learning to make education more successful for the lecturers of Universities of Gjirokastra and Korça

By your opinion, at which of the following ratios should teaching and learning contribute to the successful education?

100%-0%	75%-25%	50%-50%	25%-75%	0%-100%	N/A
5.21%	12.50%	63.54%	10.42%	2.08%	6.25%
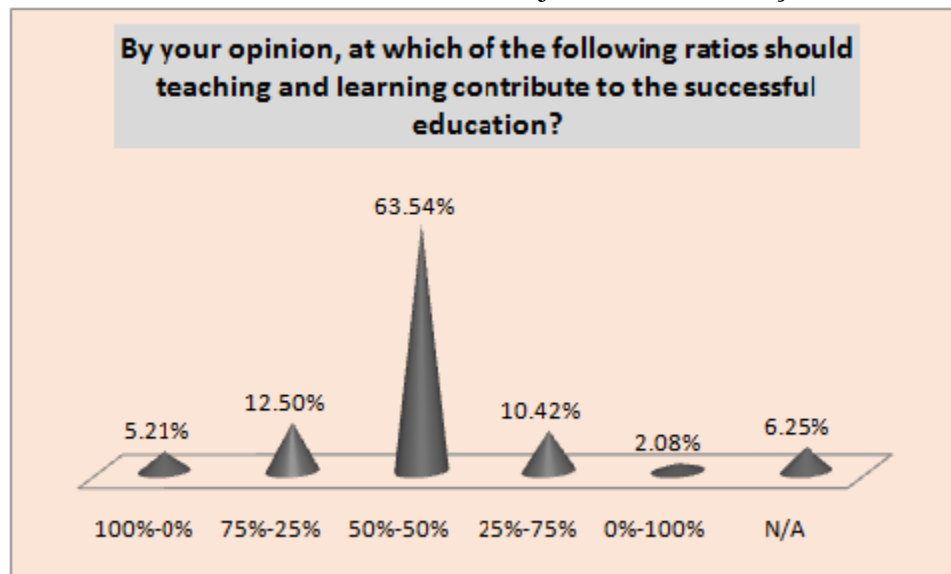
Figure 5.2.2 proportionally share the ratio between teaching and learning to make education more successful for students of Universities of Gjirokastra and Korça

By your opinion, at which of the following ratios should teaching and learning contribute to the successful education?

100%-0%	75%-25%	50%-50%	25%-75%	0%-100%	N/A
3.20%	16.28%	57.56%	7.27%	4.94%	10.76%

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CONCLUSION: Referring to Figures 5.2.1 and 5.2.2, it is noted that for both lecturers and students of Gjirokastra and Korca universities, the distribution of the teaching and learning ratio is the same. Either groups, or more than half of them, think that this ratio should be 50% -50%.

Figure 5.2.3 Distribution of level of skills in English at the University of Gjirokastra and Korça
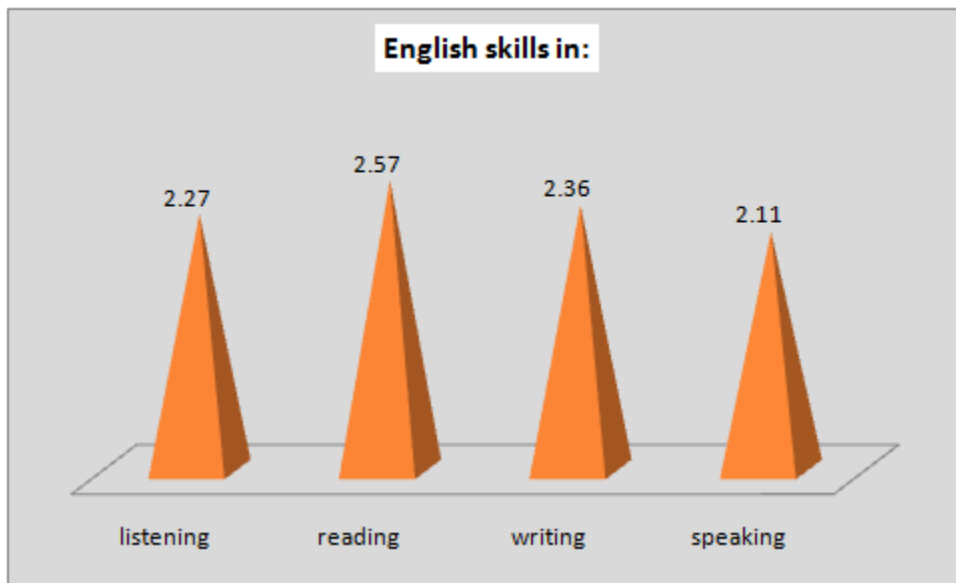
English skills in:

Table 5.2.1 Descriptive statistics of level of skills in English at the University of Gjirokastra and Korça

	Mean	Mod	Median
Listening	2.27	2	2
reading	2.57	3	3
writing	2.36	2	2
talk	2.11	2	2

CONCLUSION: Majority of lecturers self-assessed their English language competences with high marks.

Table 5.2.2 Percentage distribution of some of the disciplines followed during formal education at the University of Gjirokastra and Korça

Course	YES
Pedagogy	45.83%
Psychology	50.00%
Teaching methodology	55.21%
Application of new technologies in teaching	53.13%
English language	87.50%
You have not attended a course of any of these disciplines	6.25%

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Figure 5.2.4 Graphic representation of the Percentages of some of the disciplines followed during formal education at the University of Gjirokastra and Korça
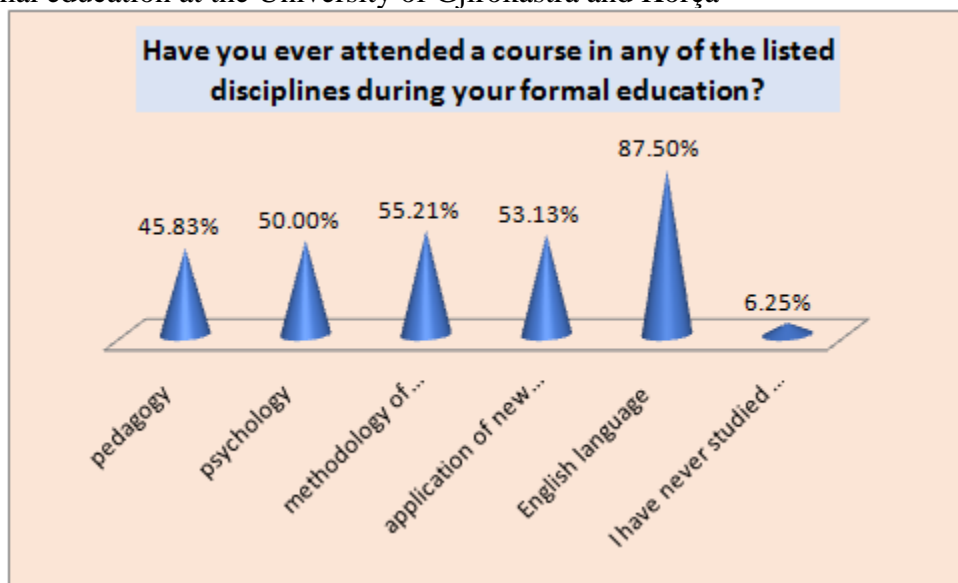
CONCLUSION: For the lecturers of the universities of Gjirokastra and Korca it is noted that 87.5% of them have attended English language courses, over 50% of them have attended courses in teaching methodologies, psychology and application of new teaching technologies. Less than 50% of them have attended courses in pedagogy, while 6.25% have not attended any of the courses listed in the questionnaire.

Table 5.2.3 Percentage distribution of courses delivered by the lecturers of the University of Gjirokastra and Korca

Course	YES
Pedagogy	47.92%
Psychology	48.96%
Teaching methodology	71.88%
Application of new technologies in teaching	73.96%
English	80.21%
You have not taught or learned a course of any of these disciplines	8.33%

Figure 5.2.5 Graphic representation of the Percentages of some of the courses delivered by the lecturers of the University of Gjirokastra and Korca

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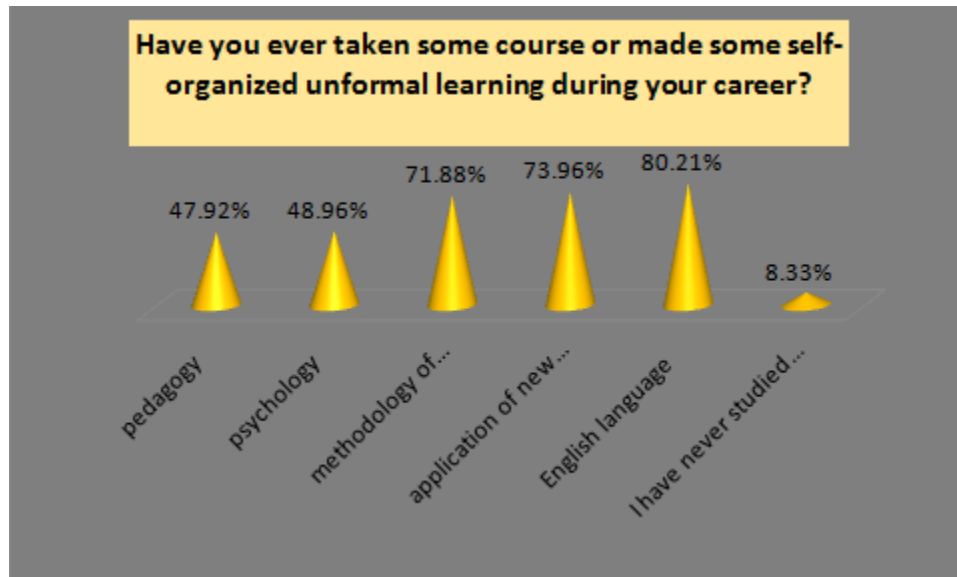Have you ever taken some course or made some self-organized unformal learning during your career?

CONCLUSION: For the lecturers of the universities of Gjirokastra and Korca it is noted that 80.21% of them have attended private (Out of formal education) English language courses, over 70% of them have attended courses outside formal education in teaching methodologies and application of new technologies in teaching. Less than 50% of them have attended courses in psychology and pedagogy, while 8.33% have not attended any of the courses listed in the questionnaire privately.

Table 5.2.4 Percentage distribution of the level of agreement with the fact that teaching skills of university professors are very important for the quality of their classes for the lecturers of Gjirokastra and Korca University

I totally agree	47.92%
I partially agree	25.00%
I do not agree	27.08%

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Figure 5.2.6 Graphic representation of the Percentages of the level of agreement with the fact that teaching skills of university professors are very important for the quality of their classes for the lecturers of Gjirokastra and Korca University
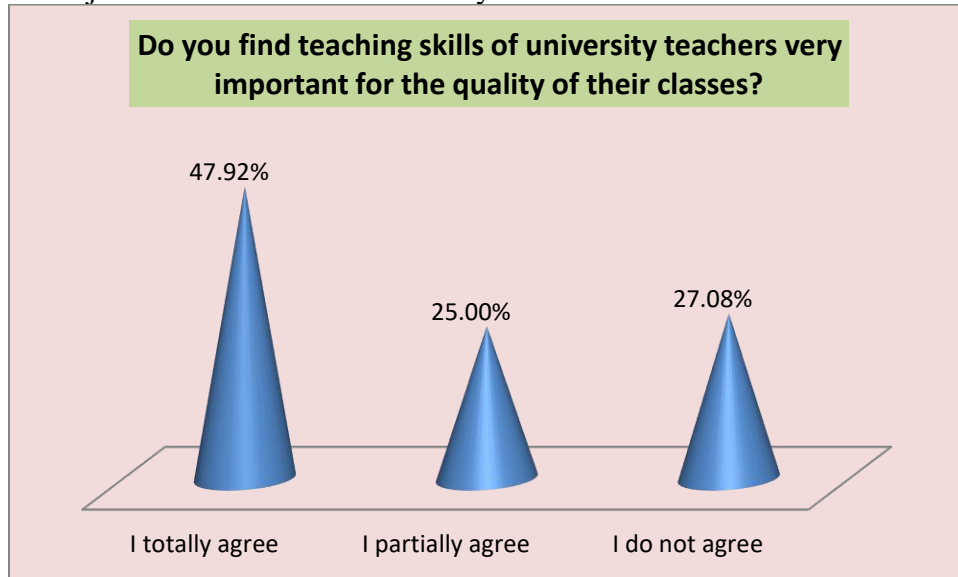
CONCLUSION: Regarding the question "Do you find teaching skills of university lecturers very important for the quality of their classes?", The reaction of the lecturers of the universities of Gjirokastra and Korca was completely positive for only 47.92% of them, 25% of them agreed, while 27.08% of disagree.

Figure 5.2.7 Percentage distribution of lecturers attending conferences focusing on teaching and feedback from students regarding quality of your teaching for the lecturers of Gjirokastra and Korca University
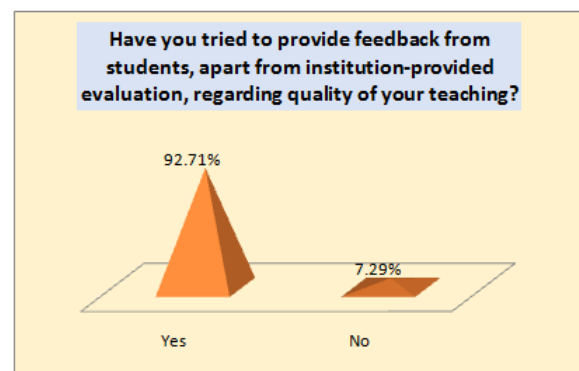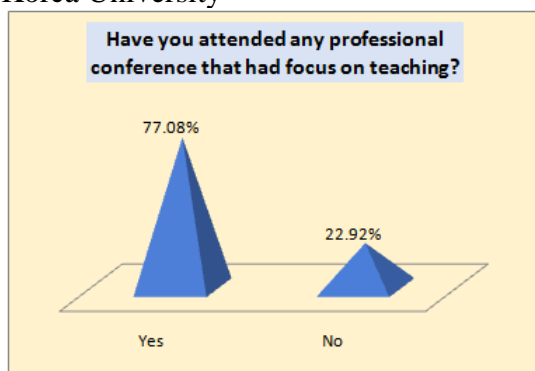
CONCLUSION: It is very important to state that the majority of lecturers of Gjirokastra and Korca universities (77.08%) have attended at least one professional conference focusing on teaching and more than 90% of them are interested in receiving direct feedback. by their students for the quality of teaching.

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Table 5.2.5 Percentage distribution of factors that have influenced the improvement of teaching skills for lecturers of the University of Gjirokastra and Korca

Get more respect from colleagues or students	18.75%
Possibility of easier preparation of classes	27.08%
Achieve better quality of teaching	78.13%
Attracting more students to elective courses	19.79%
Getting some financial or material compensation	18.75%
You are not interested	5.21%

Figure 5.2.8 Graphic representation of the Percentages of factors that have influenced the improvement of teaching skills for lecturers of the University of Gjirokastra and Korca
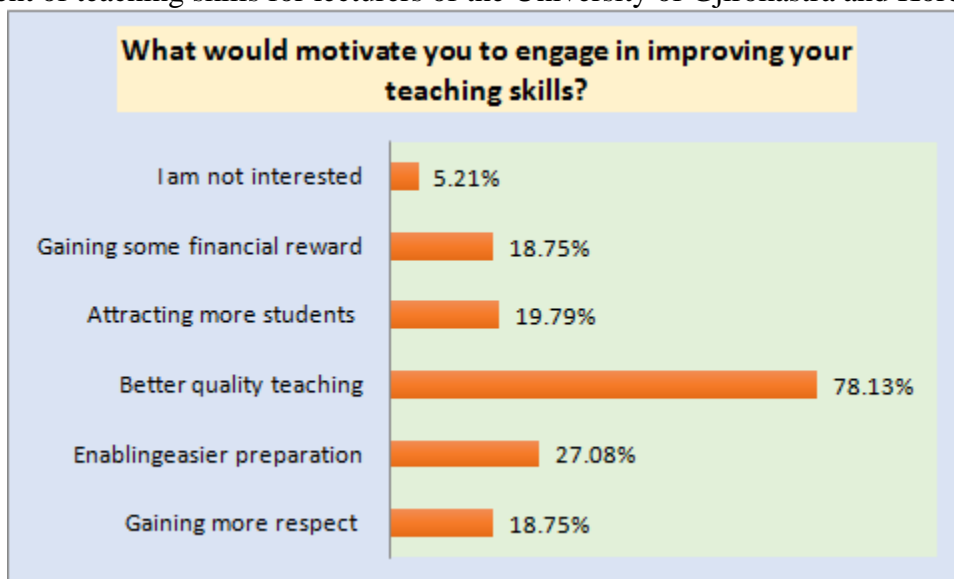
CONCLUSION: For the majority of lecturers and universities in Gjirokastra and Korca (78.13%), improving the quality of teaching is the main motive for improving teaching skills, while 5.21% of them do not feel motivated for any of the reasons listed in the questionnaire.

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5.3 University of Belgrade, Serbia

Figure 5.3.1 proportionally share the ratio between teaching and learning to make education more successful at the University of Belgrade

Ratio between teaching and learning

1
6
11
37

■ 0% - 100% ■ 25% - 75% ■ 50% - 50% ■ 75% - 25%
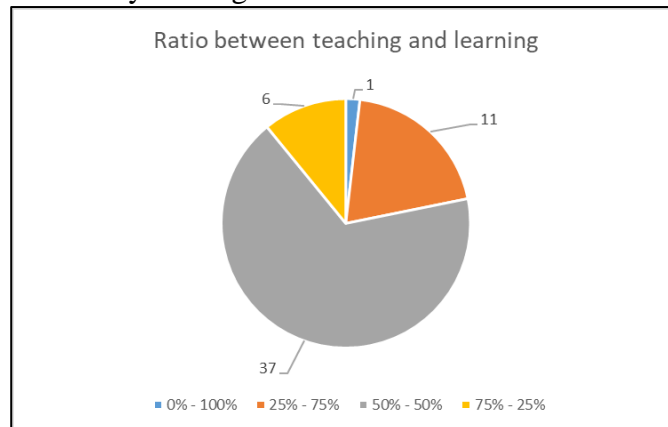
 The best ratio between teaching and learning which makes education most successfully is 50:50.

Table 5.3.1   Distribution of level of skills in English at the University of Belgrade

	low	middle	high
Listening	0	16	41
reading	0	13	44
writing	0	29	28
talk	2	28	27

CONCLUSION: Concerning knowledge in English, lecturers are better in reading and listening, than writing and speaking;

Table 5.3.2 Percentage distribution of some of the disciplines followed during formal education for lecturers of the University of Belgrade

Course	Yes	No
Pedagogy	24	32
Psychology	22	33
Teaching methodology	23	32
Application of new technologies in teaching	7	46
English language	43	12
You have not attended a course of any of these disciplines		28

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Table 5.3.3 Percentage distribution of some of the disciplines that you held a course or had educated yourself informally for lecturers of the University of Belgrade

Course	DA	NE
Pedagogy	9	41
Psychology	13	36
Teaching methodology	19	31
Application of new technologies in teaching	13	35
English	25	24
You have not taught or learned a course of any of these disciplines		25

Table 5.3.4 Distribution of the level of agreement with the fact that teaching skills of university professors are very important for the quality of their classes for the lecturers of University of Belgrade

I totally agree	51
I partially agree	6
I do not agree	0

Figure 5.3.2 Percentage distribution of lecturers attending conferences focusing on teaching and feedback from students regarding quality of your teaching for the lecturers of University of Belgrade
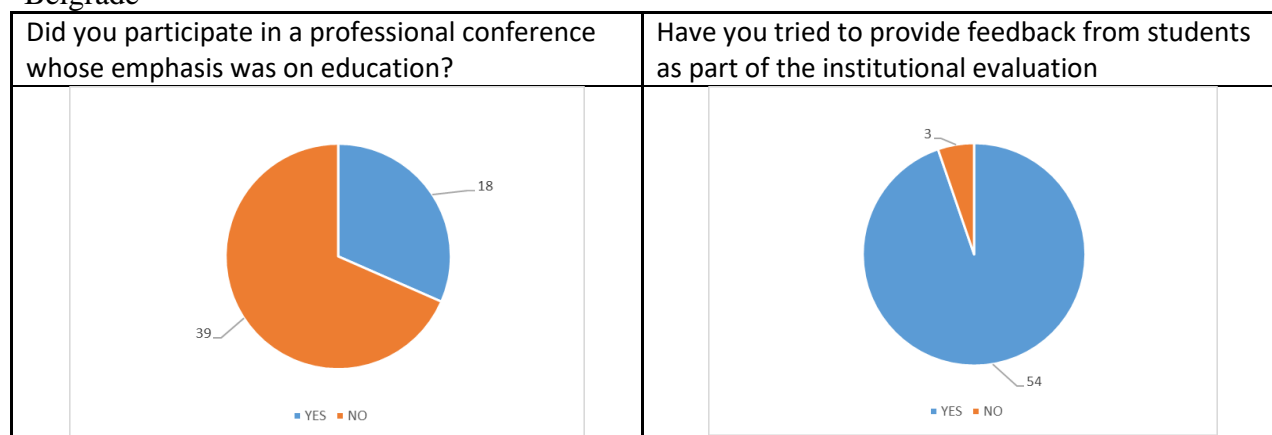
Table 5.3.5 Percentage distribution of factors that have influenced the improvement of teaching skills for lecturers of the University of Belgrade

Get more respect from colleagues or students	9	15.79%
Possibility of easier preparation of classes	16	28.07%
Achieve better quality of teaching	49	85.96%
Attracting more students to elective courses	30	52.63%
Getting some financial or material compensation	12	21.05%
You are not interested	4	7.02%

CONCLUSION: The majority of lecturers had no experience to be formally or informally educated in PPM or new technologies in teaching;

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5.4 University of Novi Sad

Figure 5.4.1 proportionally share the ratio between teaching and learning to make education more successful at the University of Novi Sad

Ratio between teaching and learning

- 25% - 75%
- 50% - 50%
- 75% - 25%
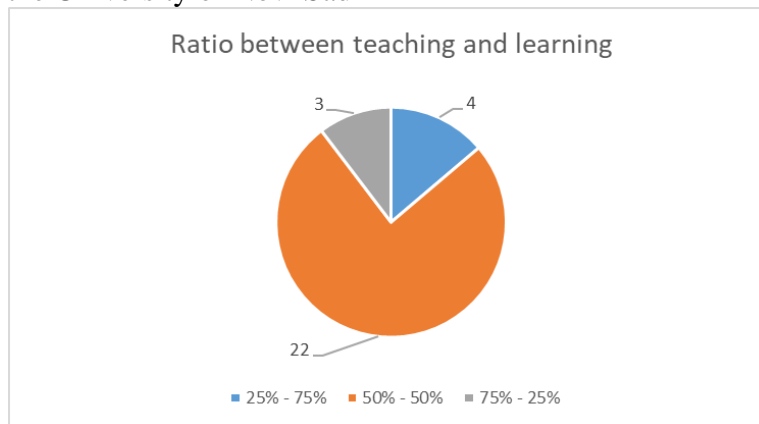
Table 5.4.1   Distribution of level of skills in English at the University of Novi Sad

	low	middle	high
Listening	0	5	25
reading	0	5	25
writing	0	10	20
talk	0	13	17

CONCLUSION: Unlike the self-assessed knowledge and skills of ICT technologies, respondents estimated the knowledge of English language with high marks.

Table 5.4.2 Percentage distribution of some of the disciplines followed during formal education for lecturers of the University of Novi Sad

Course	Yes	No
Pedagogy	8	21
Psychology	11	18
Teaching methodology	10	18
Application of new technologies in teaching	4	24
English language	28	2
You have not attended a course of any of these disciplines		15

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Table 5.4.3 Percentage distribution of some of the disciplines that you held a course or had educated yourself informally for lecturers of the University of Novi Sad

Course	DA	NE
Pedagogy	5	23
Psychology	9	19
Teaching methodology	10	18
Application of new technologies in teaching	12	16
English	15	15
You have not taught or learned a course of any of these disciplines	6	13

Table 5.4.4 Distribution of the level of agreement with the fact that teaching skills of university professors are very important for the quality of their classes for the lecturers of Novi Sad University

I totally agree	22
I partially agree	8
I do not agree	0

Figure 5.4.2 Percentage distribution of lecturers attending conferences focusing on teaching and feedback from students regarding quality of your teaching for the lecturers of Novi Sad University

Did you participate in a professional conference whose emphasis was on education?	Have you tried to provide feedback from students as part of the institutional evaluation
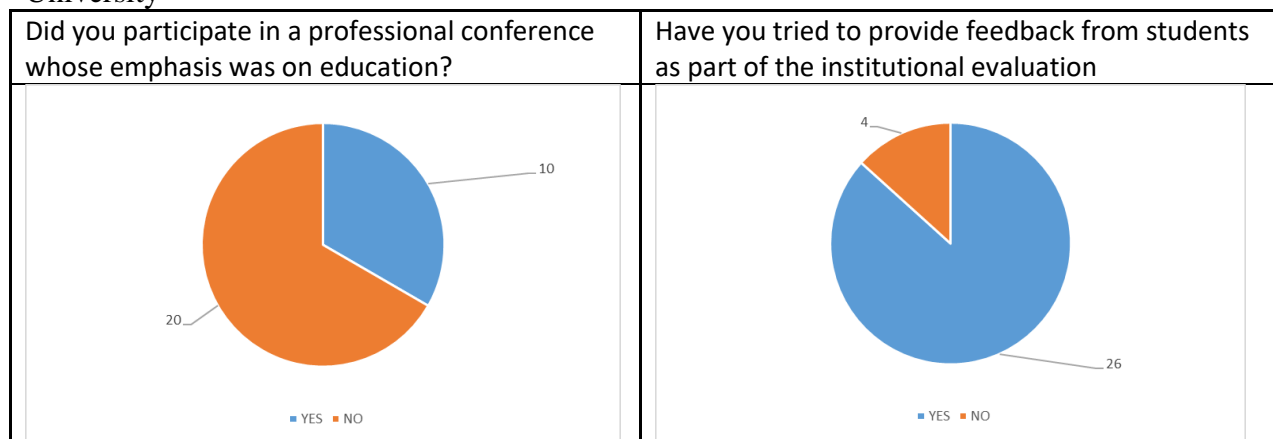
Table 5.4.5 Percentage distribution of factors that have influenced the improvement of teaching skills for lecturers of the University of Novi Sad

Get more respect from colleagues or students	5	16.7%
Possibility of easier preparation of classes	7	23.3%
Achieve better quality of teaching	27	90.0%
Attracting more students to elective courses	15	50.0%
Getting some financial or material compensation	5	16.7%
You are not interested	1	3.3%

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CONCLUSION: The vast majority of the respondents (90%) said that their driving motive would be to achieve better quality of teaching, while very few respondents (5%) would have received some compensation or greater respect as motives.

5.5 University of Kragujevac, Serbia

Figure 5.5.1 proportionally share the ratio between teaching and learning to make education more successful at the University of Kragujevac
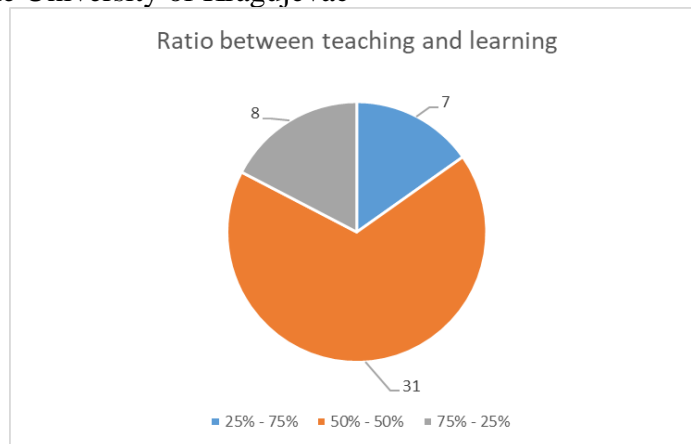
Table 5.5.1   Distribution of level of skills in English at the University of Kragujevac

	low	middle	high
Listening	3	16	28
Reading	0	15	32
Writing	1	22	24
Talk	5	30	12

CONCLUSION: Majority of lecturers has satisfactory English language competence.

Table 5.5.2 Percentage distribution of some of the disciplines followed during formal education for lecturers of the University of Kragujevac

Course	Yes	No
Pedagogy	30	15
Psychology	31	15
Teaching methodology	24	18
Application of new technologies in teaching	9	30
English language	42	4
You have not attended a course of any of these disciplines		17

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Table 5.5.3 Percentage distribution of some of the disciplines that you held a course or had educated yourself informally for lecturers of the University of Kragujevac

Course	Yes	No
Pedagogy	7	32
Psychology	9	31
Teaching methodology	17	26
Application of new technologies in teaching	18	22
English	25	17
You have not taught or learned a course of any of these disciplines	3	23

Table 5.5.4 Distribution of the level of agreement with the fact that teaching skills of university professors are very important for the quality of their classes for the lecturers of Kragujevac University

I totally agree	41
I partially agree	6
I do not agree	0

Figure 5.5.2 Percentage distribution of lecturers attending conferences focusing on teaching and feedback from students regarding quality of your teaching for the lecturers of Kragujevac University
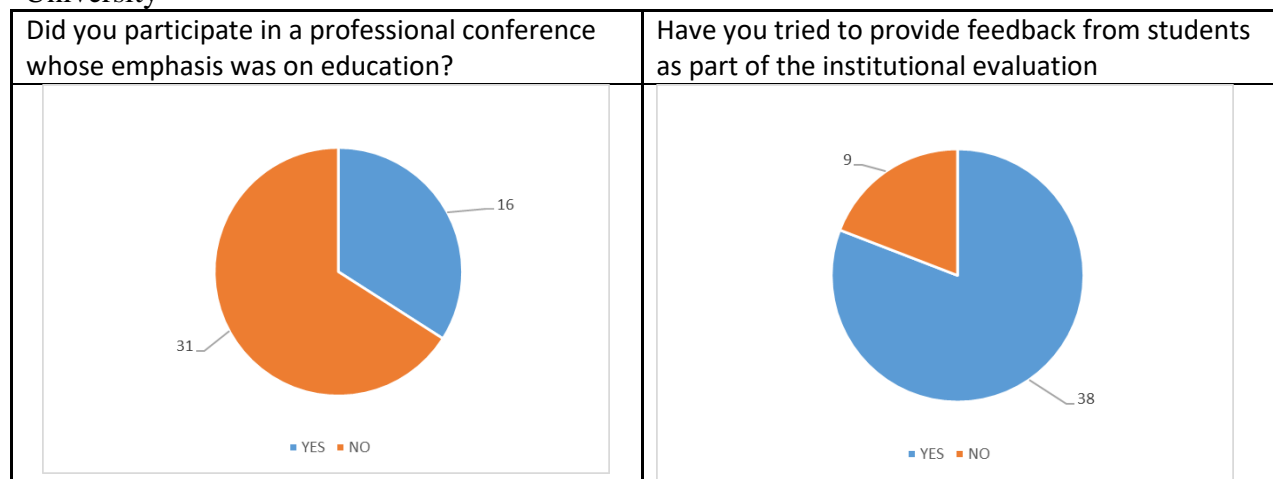
Table 5.5.5 Percentage distribution of factors that have influenced the improvement of teaching skills for lecturers of the University of Kragujevac

Get more respect from colleagues or students	11	23.40%
Possibility of easier preparation of classes	14	29.79%
Achieve better quality of teaching	37	78.72%
Attracting more students to elective courses	18	38.30%
Getting some financial or material compensation	14	29.79%
You are not interested	2	4.26%

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CONCLUSION: Most of the lecturers (about two thirds) attended courses Pedagogy, Psychology and Subject Methodology during their initial education, while only a quarter of them had a dedicated ICT course. Most of the lecturers (87.23%) consider the teaching skills very important for the quality of the teaching process, and also (78.72%) consider the increase in the quality of teaching as the most important motivation for working on the improvement of teaching skills. Only 4.26% of lecturers are not interested in improving their skills. All this indicates that there is a strong motivation for lecturers to improve teaching, which is good base for believe that well-designed training and/or prepared materials will give the desired result.

Chapter VI THE USE OF TEACHING STRATEGIES, ENGLISH LANGUAGE AND TECHNOLOGY IN TEACHING

6.1 University of Niŝ, Serbia

Figure 6.1.1 Average rating in implementation of teaching strategies involving students for lecturers of the Universities of Nis

	1	2	3	4	5
s1	0	1	0	9	21
s2	1	0	0	3	27
s3	2	1	4	9	15
s4	1	2	6	16	6
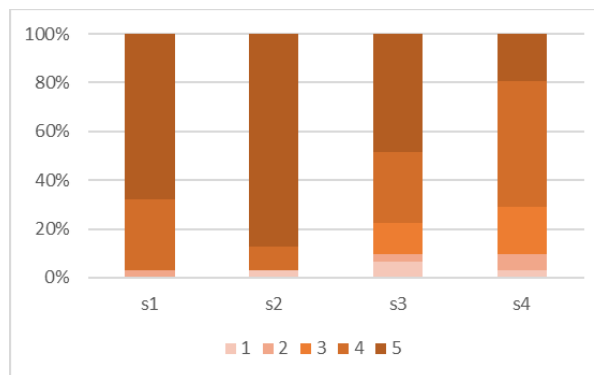
Table 6.1.1 Descriptive distribution of implementation of teaching strategies involving students and comparison between young and experienced lecturers at the University of Nis

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
s1	4.613	5	5	4.667	5	5	4.579	5	5
s2	4.774	5	5	4.917	5	5	4.684	5	5
s3	4.097	4	5	4.25	4	4	4	5	5
s4	3.774	4	4	3.583	4	4	3.895	4	4

 CONCLUSION: All the lecturers assessed with high-grade their educational strategies about involving students. About 90% of them provide clear information to students on how to evaluate the course, the truthfulness of the claim s1 is very good, too, while the smallest is number of lecturers (younger as well as experienced) who give students homework, short-term assignments or some other form of preparation for the coming time.

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Figure 6.1.2 Average rating in implementation of intellectual engagement and impact on learning for lecturers of the Universities of Nis

	1	2	3	4	5
a1	0	0	1	13	17
a2	1	0	2	15	13
a3	0	1	3	14	12
a4	0	0	3	12	16
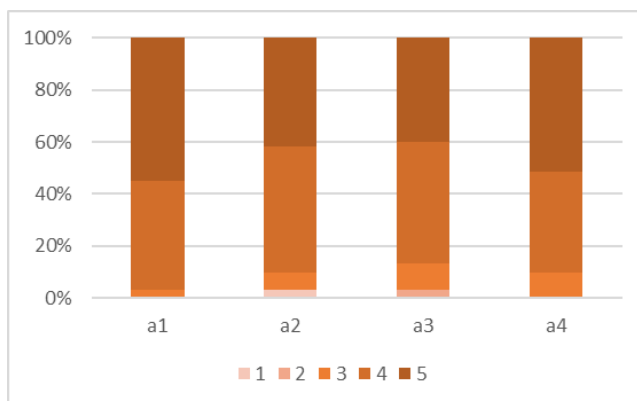
Table 6.1.2 Descriptive distribution of implementation of intellectual engagement and impact on learning and comparison between young and experienced lecturers at the University of Nis

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
a1	4.516	5	5	4.417	4	4	4.579	5	5
a2	4.258	4	4	4.333	4	4	4.211	4	5
a3	4.233	4	4	4.25	4	4	4.222	4	
a4	4.419	5	5	4.667	5	5	4.263	4	4

CONCLUSION: The respondents rated all the claims from this group with very high grades, which means that they agree with all the claims.

Figure 6.1.3 Average assessment of the factors that determine the teacher-student relationship according to the lecturers' perceptions of the Universities of Nis

	1	2	3	4	5
o1	0	0	0	12	19
o2	2	2	9	8	10
o3	0	0	0	5	26
o4	0	0	0	8	23

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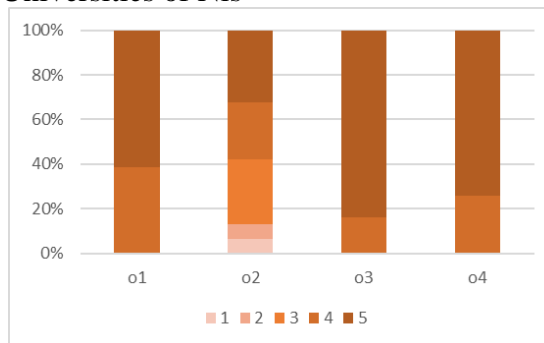Co-funded by the
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Table 6.1.3 Descriptive distribution of teacher-student relationship factors and comparison between young and experienced lecturers at the University of Nis

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
o1	4.613	5	5	4.667	5	5	4.579	5	5
o2	3.71	4		3.75	3.5	3	3.684	4	4
o3	4.839	5	5	5	5	5	4.737	5	5
o4	4.742	5	5	4.75	5	5	4.737	5	5

CONCLUSION: The responses show that the lecturers highly estimate their relations to students with respect, they communicate with students with smile and friendly tone, while the less number is open for communication through social networks.

Figure 6.1.4 Average assessment of the factors that determine the level of cooperation according to the lecturers' perceptions of the Universities of Nis

	1	2	3	4	5
b1	2	2	5	17	5
b2	1	4	5	8	13
b3	6	6	8	5	6
b4	0	0	2	10	18
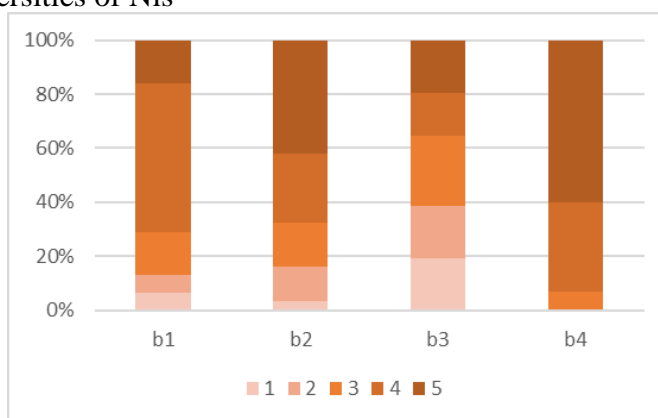
Table 6.1.4 Descriptive distribution of cooperation's factors and comparison between young and experienced lecturers at the University of Nis

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
b1	3.677	4	4	3.333	3.5	4	3.895	4	4
b2	3.903	4	5	3.417	3.5		4.211	5	5
b3	2.968	3	3	2.917	2.5		3	3	3
b4	4.533	5	5	4.417	4.5		4.611	5	5

CONCLUSION: In the group of claims on cooperation the lecturers very poorly use collaborative software in communication with students. About all demands both younger and experienced er respondents have almost the same assessment.

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Figure 6.1.5 Average assessment of the factors that determine the level of Student-centered teaching and learning according to the lecturers' perceptions of the Universities of Nis

	1	2	3	4	5
c1	0	0	1	13	17
c2	2	1	11	7	10
c3	0	0	2	15	14
c4	0	0	1	6	23

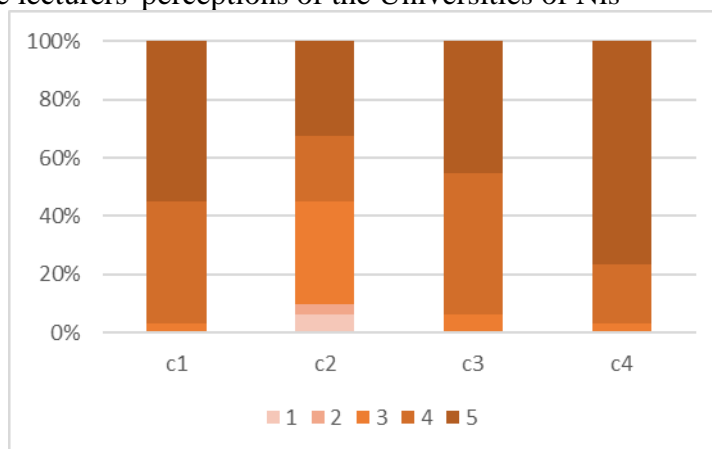

Table 6.1.5 Descriptive distribution of the factors that determine the level of Student-centered teaching and learning and comparison between young and experienced lecturers at the University of Nis

	TOTAL			YOUNGER			EXPERIENCED ER		
statements	mean	median	mod	mean	median	mod	mean	median	mod
c1	4.516	5	5	4.417	4.5		4.579	5	5
c2	3.71	4	3	3.417	3	3	3.895	4	5
c3	4.387	4	4	4.25	4	4	4.474	5	5
c4	4.733	5	5	4.545	5	5	4.842	5	5

CONCLUSION: Lecturers estimate that they are oriented to student-centered teaching and learning. They are very interested in students' opinion and take care of students' wishes and priorities to improve teaching process (the average for all claims is greater than 3.7). Students assessments of truthfulness of these statements are on the lower level and it would be useful to find deeper reasons for this disagreement.

Figure 6.1.6 Average assessment of the factors that determine the level of enthusiasm and style of teaching according to the lecturers' perceptions of the Universities of Nis

	1	2	3	4	5
d1	0	2	2	15	12
d2	1	2	4	9	15
d3	4	7	4	9	6
d4	1	1	3	12	14

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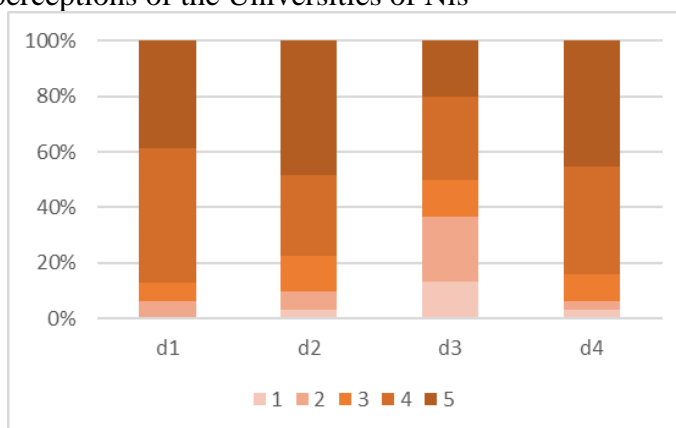Co-funded by the
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Table 6.1.6 Descriptive distribution of the factors that determine the level of enthusiasm and style of teaching and comparison between young and experienced lecturers at the University of Nis

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
d1	4.194	4	4	4.083	4	4	4.263	4	5
d2	4.129	4	5	3.333	3.5	4	4.632	5	5
d3	3.2	3.5	4	2.833	2.5	2	3.444	4	4
d4	4.194	4	5	4	4	4	4.316	5	5

CONCLUSION: Less than 50% of lecturers estimate the statement d3 that refers to the work in pairs or groups, workshops and other techniques during classes with highest level marks. Majority of lecturers (two-third of them) stated that in general they are in general or completely ready to adopt teaching methods to maintain students' interest adapt methods and type of work to students while 90% of respondents consider that they motivate students for active learning.

Figure 6.1.7 Average assessment of the factors that determine the level of class structure according to the lecturers' perceptions of the Universities of Nis

	1	2	3	4	5
e1	0	0	0	15	16
e2	0	0	2	12	15
e3	0	0	5	9	17
e4	0	0	2	9	20
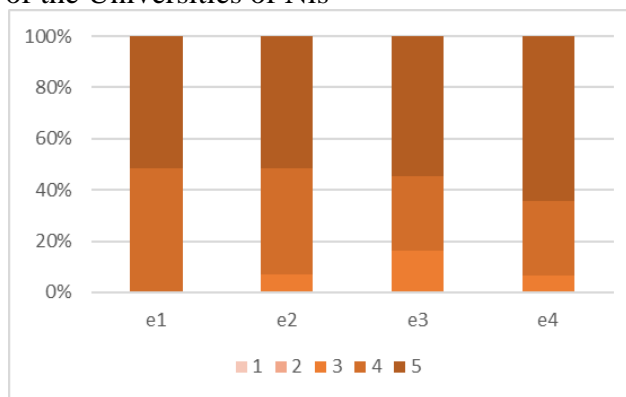
Table 6.1.7 Descriptive distribution of the factors that determine the level of class structure and comparison between young and experienced lecturers at the University of Nis

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
e1	4.516	5		4.333	4	4	4.632	5	5
e2	4.448	5	5	4.5	4.5	4	4.412	5	5
e3	4.387	5	5	4.333	4.5	5	4.421	5	5
e4	4.581	5	5	4.417	4	4	4.684	5	5

CONCLUSION: All the statements considering the structure of classes and teaching materials are rated high, especially by experienced er respondents, while about 50% of students stated that

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majority of lecturers practice the activities mentioned in the above statements. Nevertheless, a significant number of students chose the option *A few lecturers* which indicates that there is space for strengthening teaching competences for a large number of lecturers.

6.2 Universities of Gjirokastra and Korca, Albania

Figure 6.2.1 Average rating in implementation of teaching strategies involving students for lecturers of the Universities of Gjirokastra and Korca
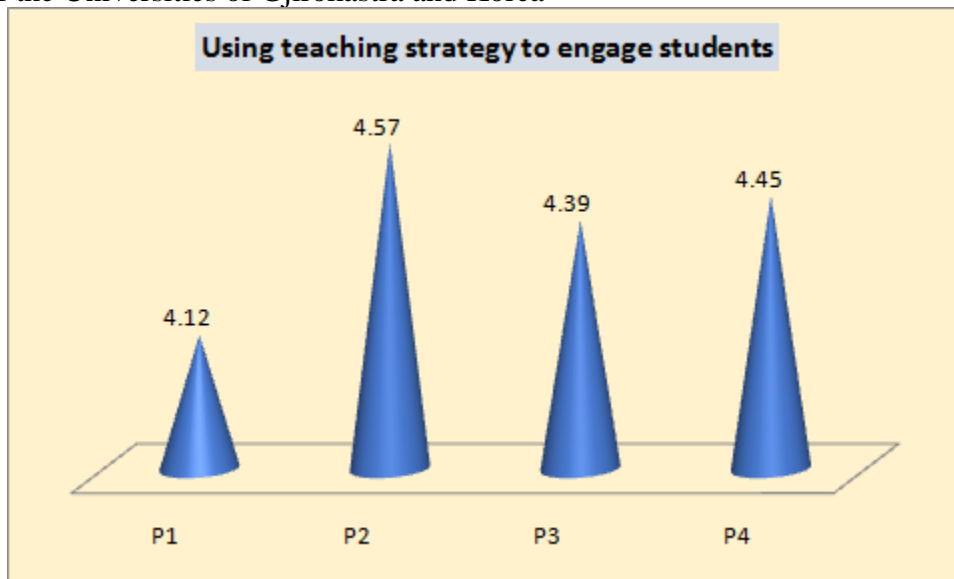
CONCLUSION: Concerning Teaching strategies involving students, the average perception of lecturers in the universities of Gjirokastra and Korca is among the values representing "Generally true" and "Totally true". They are almost completely confident of the clarity of information conveyed to students (4.57) and generally confident of providing prompt and detailed feedback on students' tests, assignments or works in progress (4.12).

Table 6.2.1 Descriptive distribution of implementation of teaching strategies involving students and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

	TOTAL			YOUNG			EXPERIENCED		
statement	mean	median	mod	mean	median	mod	mean	median	mod
s1 (P1)	4.12	4	4	4.15	4	4	4.04	4	4
s2 (P2)	4.57	5	5	4.64	5	5	4.41	5	5
s3 (P3)	4.39	5	5	4.45	5	5	4.23	4.5	5
s4 (P4)	4.45	5	5	4.43	5	5	4.48	5	5

Figure 6.2.2 Comparison of averages between young and experienced lecturers for factors of teaching strategies that include students, Universities of Gjirokastra and Korca

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	s1 (P1)	s2 (P2)	s3 (P3)	s4 (P4)
■ YOUNGER	4.15	4.64	4.45	4.43
■ OLDER	4.04	4.41	4.23	4.48
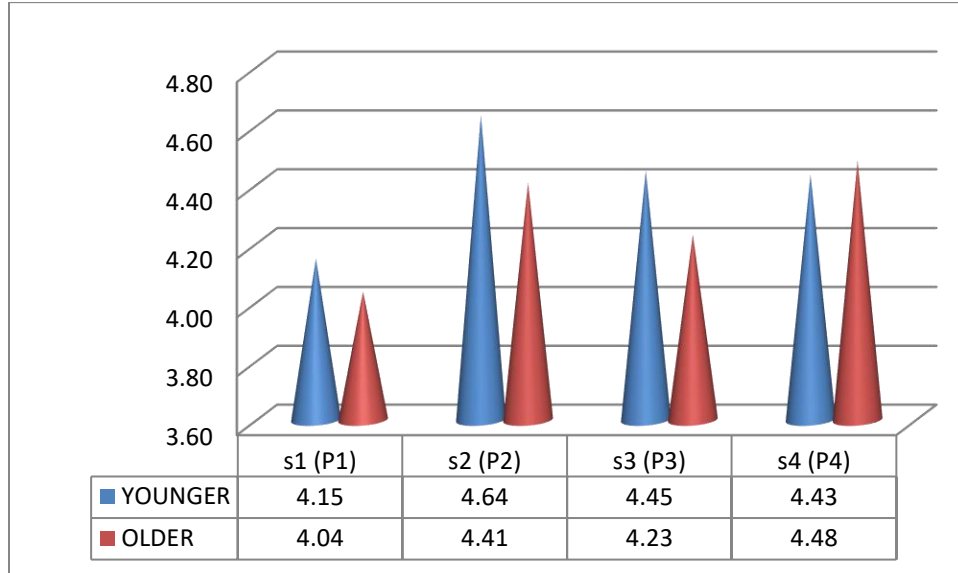
 CONCLUSION: A comparison of the averages for s1-s4 factors indicates that for the first three factors, younger lecturers are more optimistic than experienced er lecturers, despite the fact that this difference does not exceed the unit of perceived degree of choice, whereas experienced er lecturers are more optimistic that young lecturers about the s4 factor.

Figure 6.2.3 Average rating in implementation of intellectual engagement and impact on learning for lecturers of the Universities of Gjirokastra and Korca
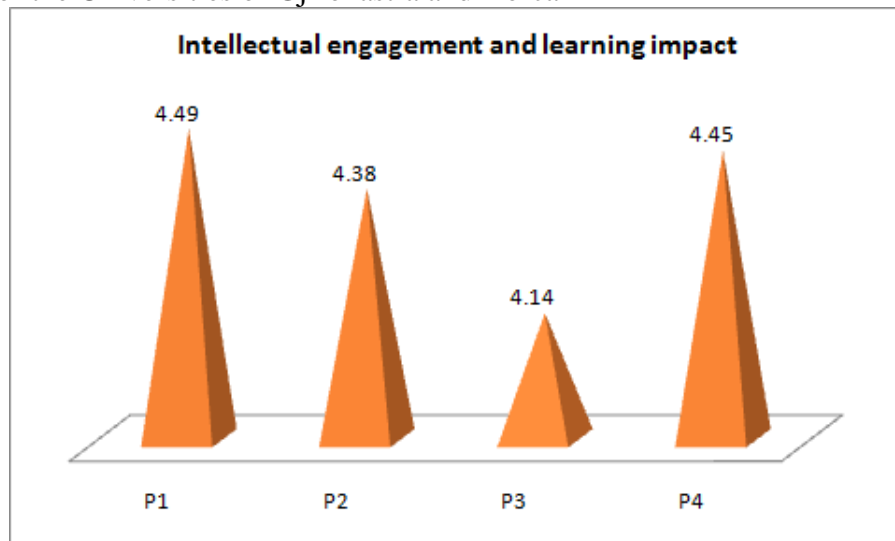
 CONCLUSION: Concerning intellectual engagement and impact on learning, the average perception of lecturers in the universities of Gjirokastra and Korca is among the values representing "Generally true" and "Totally true". They are almost completely confident of motivate and encourage students to develop new ideas and find creative solutions to problems during learning (4.49) and generally confident of fact that they discussion on classes about solving complex problems (4.14).

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Table 6.2.2 Descriptive distribution of implementation of intellectual engagement and impact on learning and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

statements	TOTAL			YOUNG			EXPERIENCED		
	mean	median	mod	mean	median	mod	mean	median	mod
a1	4.49	5	5	4.49	5	5	4.48	4	**4**
a2	4.38	5	5	4.43	5	5	4.22	4	**4**
a3	4.14	4	5	4.24	4	5	3.88	4	**5**
a4	4.45	5	5	4.48	5	5	4.37	5	**5**

Figure 6.2.4 Comparison of averages between young and experienced lecturers for factors of intellectual engagement and impact on learning, Universities of Gjirokastra and Korca

	a1	a2	a3	a4
■ YOUNGER	4.49	4.43	4.24	4.48
■ OLDER	4.48	4.22	3.88	4.37
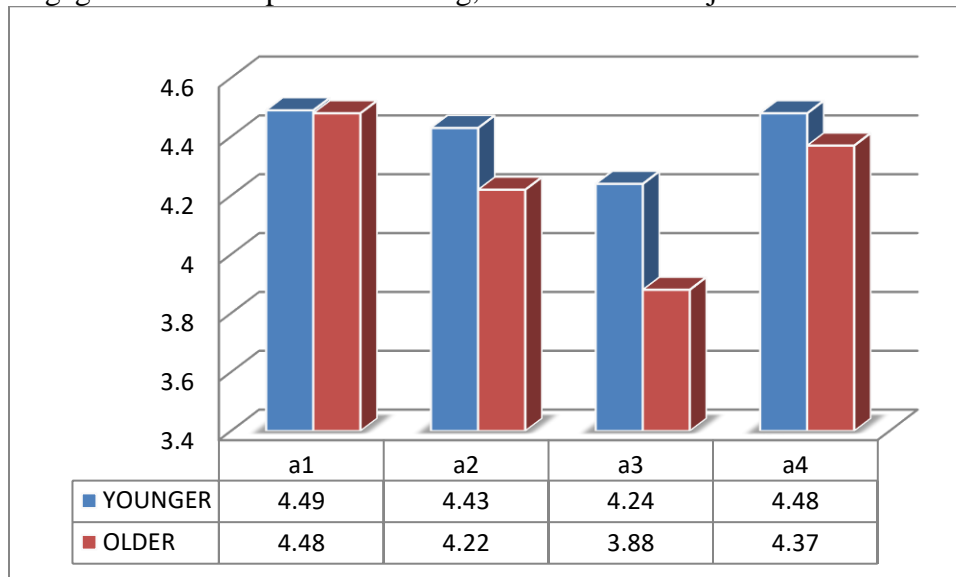
CONCLUSION: A comparison of averages for factors a1-a4 shows that for the last three factors, new lecturers are more optimistic than experienced er lecturers, despite the fact that these changes do not exceed the unit of perceived choice rate, while for factor a1, both groups have a same average perception.

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Figure 6.2.5 Average assessment of the factors that determine the teacher-student relationship according to the lecturers' perceptions of the Universities of Gjirokastra and Korça
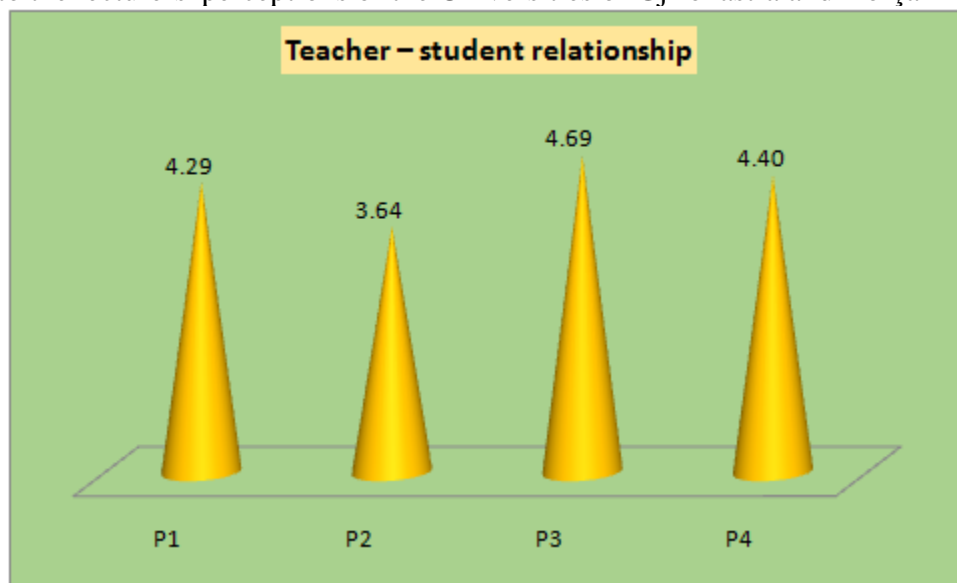
CONCLUSION: As for the factors that determine teacher-student relationships, it is noted that only factor o2 is below the "Generally true" level of perception (3.64). This means that teacher-student relationships are not helped by the different forms of electronic communication, but they are almost certain (4.69) that they treat their students with respect.

Table 6.2.3 Descriptive distribution of teacher-student relationship factors and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

statements	TOTAL			YOUNGER			EXPERIENCED ER		
	mean	median	mod	mean	median	mod	mean	median	mod
o1	4.29	4	5	4.32	5	5	4.22	4	4
o2	3.64	4	5	3.65	4	5	3.59	4	5
o3	4.69	5	5	4.71	5	5	4.63	5	5
o4	4.40	5	5	4.39	5	5	4.42	4.5	5

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Figure 6.2.6 Comparison of averages between young and experienced lecturers of teacher-student relationship factors, Universities of Gjirokastra and Korca

	o1	o2	o3	o4
■ YOUNGER	4.32	3.65	4.71	4.39
■ OLDER	4.22	3.59	4.63	4.42

CONCLUSION: A comparison of the mean values for the o1-o4 factors shows that the perceptions of young and experienced lecturers are the same.

Figure 6.2.7 Average assessment of the factors that determine the level of cooperation according to the lecturers' perceptions of the Universities of Gjirokastra and Korça
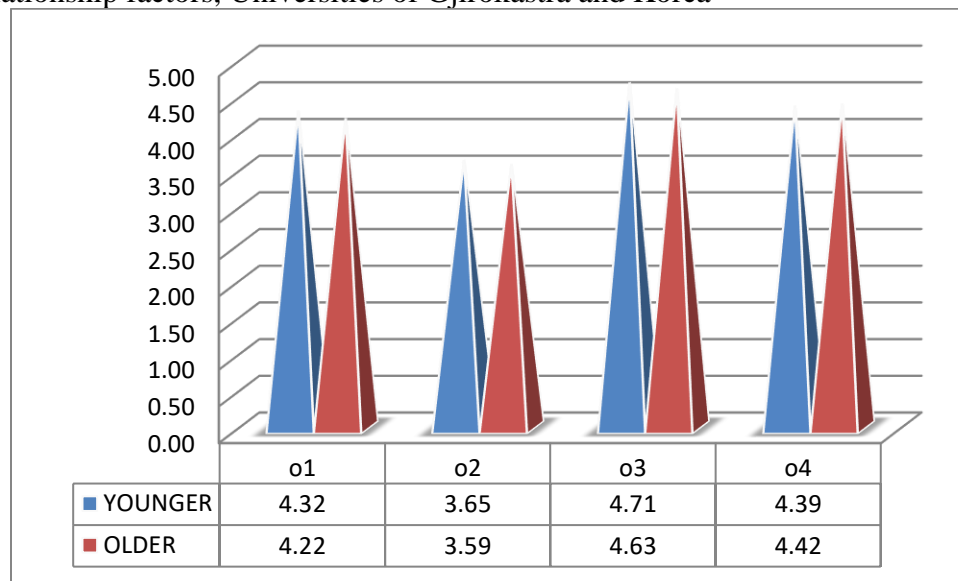

Collaboration
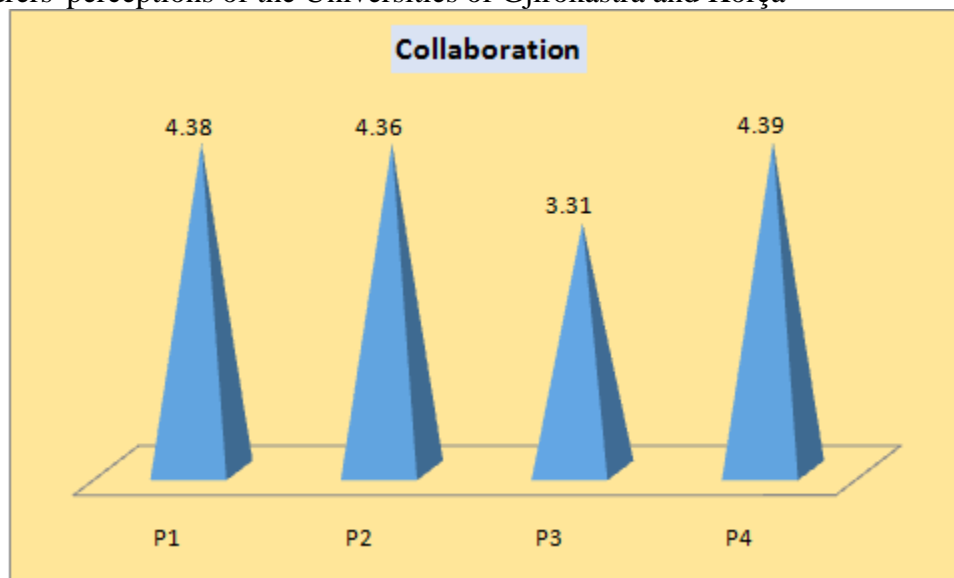
CONCLUSION: Results from teacher responses of Gjirokastra and Korça universities lecturers noted that with the exception of factor b3, the other three factors are at almost maximum levels of teacher perception (approximately 4.4). Factor b3, which corresponds to the demand for using software in communicating with students, is close to the average level of teacher perception

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(3.31). This indicates that lecturers generally do not use software to communicate with their students

Table 6.2.4 Descriptive distribution of cooperation's factors and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

| statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
b1	4.38	4.5	5	4.41	5	5	4.30	4	4
b2	4.36	5	5	4.36	5	5	4.37	5	5
b3	3.31	3	3	3.44	3	3	2.96	3	3
b4	4.39	4	5	4.37	4	5	4.44	5	5

Figure 6.2.8 Comparison of averages between young and experienced lecturers of cooperation's factors, Universities of Gjirokastra and Korca

	b1	b2	b3	b4
YOUNGER	4.49	4.43	4.24	4.48
OLDER	4.48	4.22	3.88	4.37
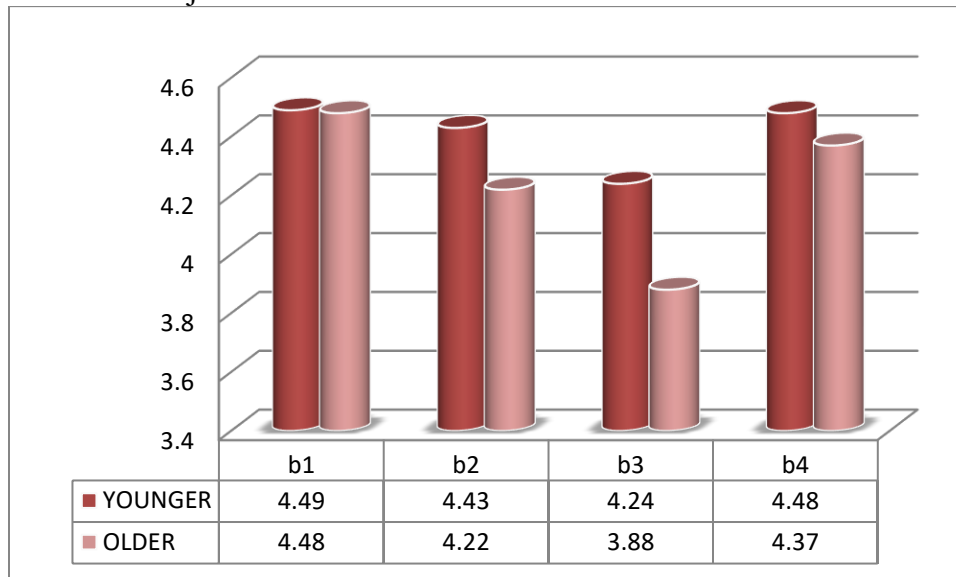
CONCLUSION In terms of comparing averages of teacher responses, younger lecturers have a higher level of perception of factors b2, b3 and b4, despite the differences being not very sensitive, except for factor b1 for which the level of perception for both groups are the same.

Figure 6.2.9 Average assessment of the factors that determine the level of Student-centered teaching and learning according to the lecturers' perceptions of the Universities of Gjirokastra and Korça

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Student-centered learning practices
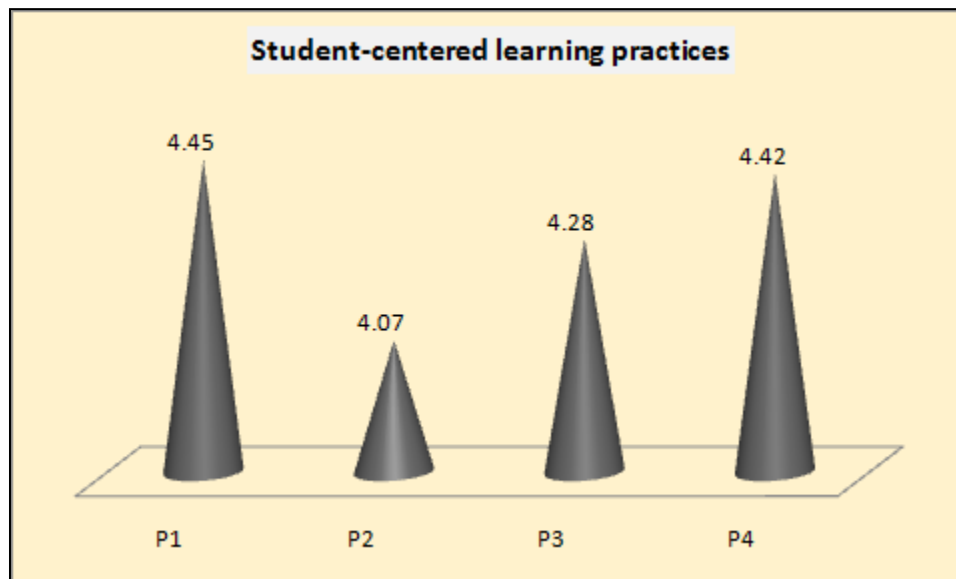
CONCLUSION: Lecturers estimate that they are oriented to student-centered teaching and learning. They are very interested in students' opinion and take care of students' wishes and priorities to improve teaching process (the average for all claims is greater than 4). Students assessments of truthfulness of these statements are on the lower level and it would be useful to find deeper reasons for this disagreement.

Table 6.2.5 Descriptive distribution of the factors that determine the level of Student-centered teaching and learning and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
c1	4.45	5	5	4.48	5	5	4.37	4	4
c2	4.07	4	5	4.14	4	5	3.89	4	4
c3	4.28	4	5	4.28	4	5	4.30	4	4
c4	4.42	5	5	4.46	5	5	4.33	5	5

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Figure 6.2.10 Comparison of averages between young and experienced lecturers of the factors that determine the level of student-centered teaching and learning, Universities of Gjirokastra and Korca

	c1	c2	c3	c4
■ YOUNGER	4.48	4.14	4.28	4.46
▪ OLDER	4.37	3.89	4.30	4.33
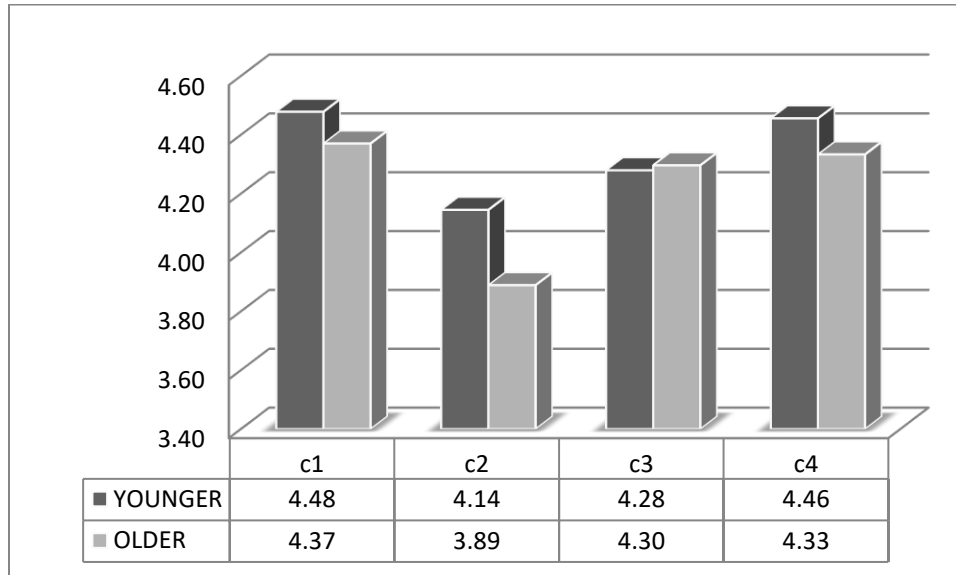
CONCLUSION: A comparison of the factor averages that determine the level of student-centered teaching and learning between junior and senior lecturers indicates that in the three factors c1, c2 and c4, junior lecturers are more optimistic than experienced er ones, regardless of the difference between them. is of small value. As for the c3 factor, "Link the contents of your courses with previous knowledge and experience of students" experienced er lecturers show higher average value than younger lecturers' opinion.

Figure 6.2.11 Average assessment of the factors that determine the level of enthusiasm and style of teaching according to the lecturers' perceptions of the Universities of Gjirokastra and Korça

**Enthusiasm and teaching style**

4.26 3.68 3.94 4.44

P1 P2 P3 P4

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CONCLUSION: Average ratings of the factors that determine the level of enthusiasm and teaching style that lecturers in the universities of Gjirokastra and Korça are oriented towards maximize their perceptions of motivating students to seek new teaching resources beyond required materials such as also critically evaluate their reliability (4.44). The lowest mean value is reached by the d2 factor (3.68), which indicates that the use of e-books, electronic presentations and more has a tendency towards average values of their perception level.

Table 6.2.6 Descriptive distribution of the factors that determine the level of enthusiasm and style of teaching and comparison between young and experienced lecturers at the University of Gjirokastra and Korça
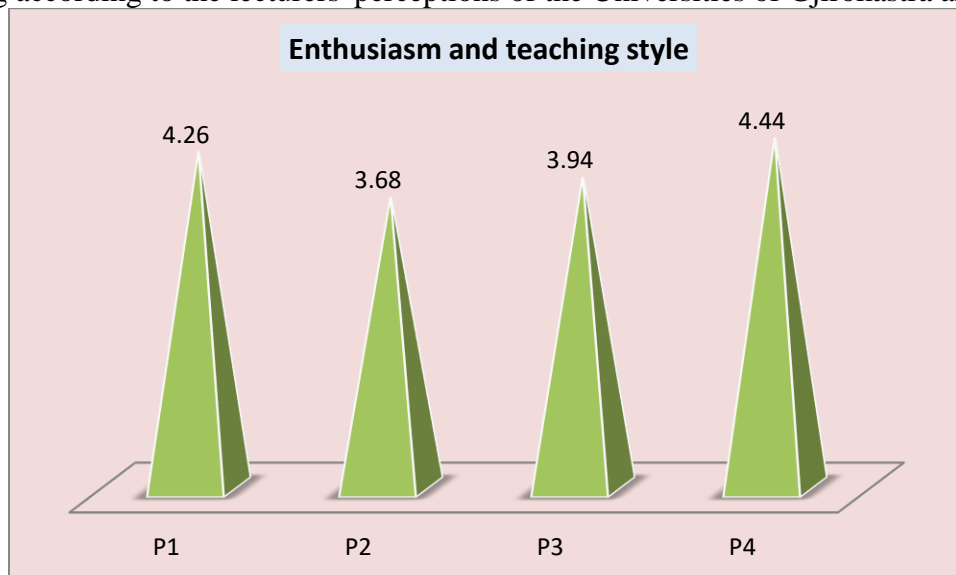
statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
d1	4.26	4	4	4.28	4	4	4.22	4	4
d2	3.68	4	4	3.74	4	4	3.54	4	4
d3	3.94	4	4	3.96	4	4	3.89	4	4
d4	4.44	5	5	4.51	5	5	4.26	4	4

Figure 6.2.12 Comparison of averages between young and experienced lecturers of the factors that determine the level of enthusiasm and style of teaching, Universities of Gjirokastra and Korca

	d1	d2	d3	d4
■ YOUNGER	4.28	3.74	3.96	4.51
■ OLDER	4.22	3.54	3.89	4.26
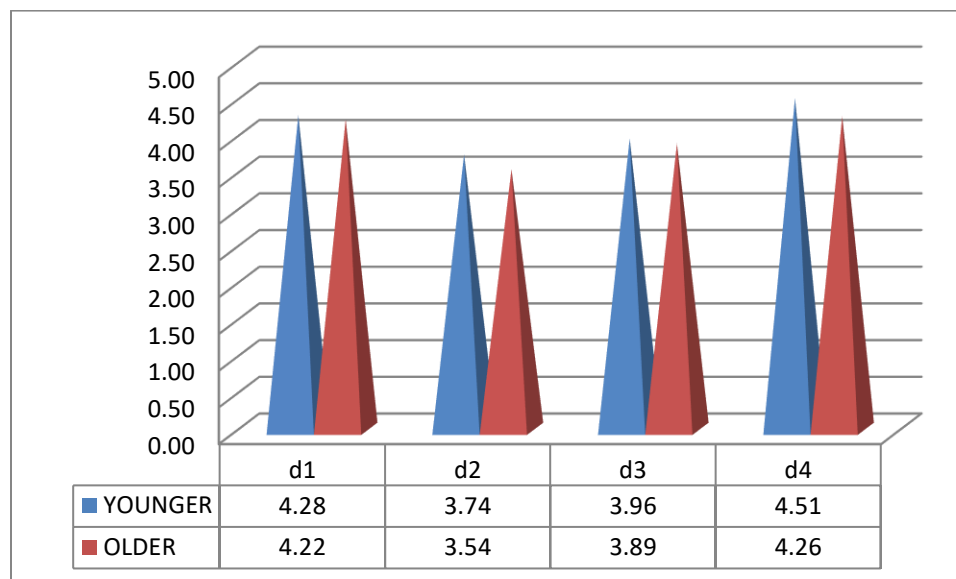
CONCLUSION: Comparison of survey averages for junior and senior lecturers shows that their perceptions of these factors are almost at the same level. The only exception is the d4 factor, which indicates that new lecturers are more inclined to motivate students to look for complementary materials and evaluate their quality.

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Figure 6.2.13 Average assessment of the factors that determine the level of class structure according to the lecturers' perceptions of the Universities of Gjirokastra and Korça
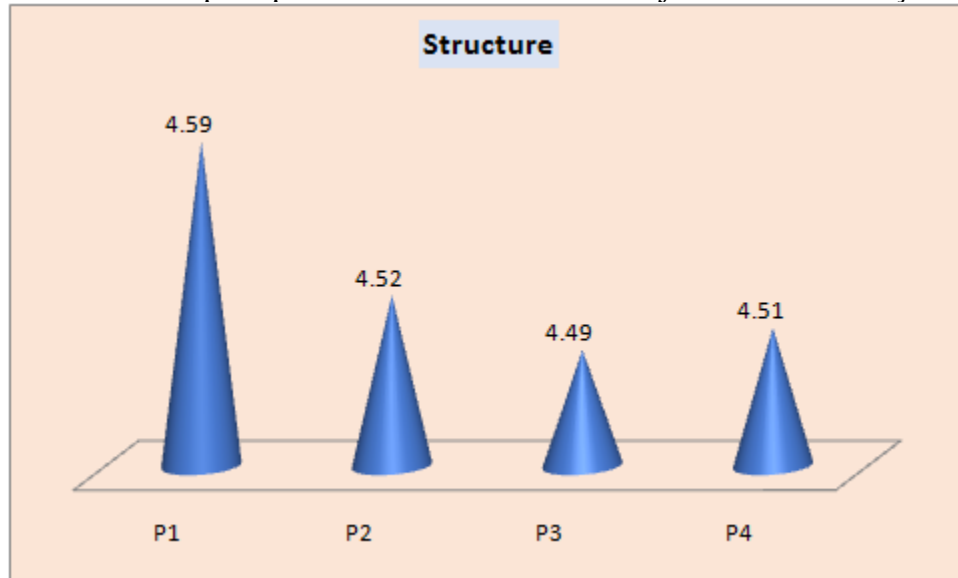
CONCLUSION: With respect to the factors chosen by observers to determine the level of class structure, it is noted that average values of perception tend towards the maximum possible of this perception, with a difference between them that is no more than 0.1 of the selected unit.

Table 6.2.7 Descriptive distribution of the factors that determine the level of class structure and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
e1	4.59	5	5	4.67	5	5	4.41	5	5
e2	4.52	5	5	4.55	5	5	4.44	5	5
e3	4.49	5	5	4.55	5	5	4.35	4	4
e4	4.51	5	5	4.57	5	5	4.33	4	5

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Figure 6.2.14 Comparison of averages between young and experienced lecturers of the factors that determine the level of class structure, Universities of Gjirokastra and Korca

	e1	e2	e3	e4
YOUNGER	4.67	4.55	4.55	4.57
OLDER	4.41	4.44	4.35	4.33
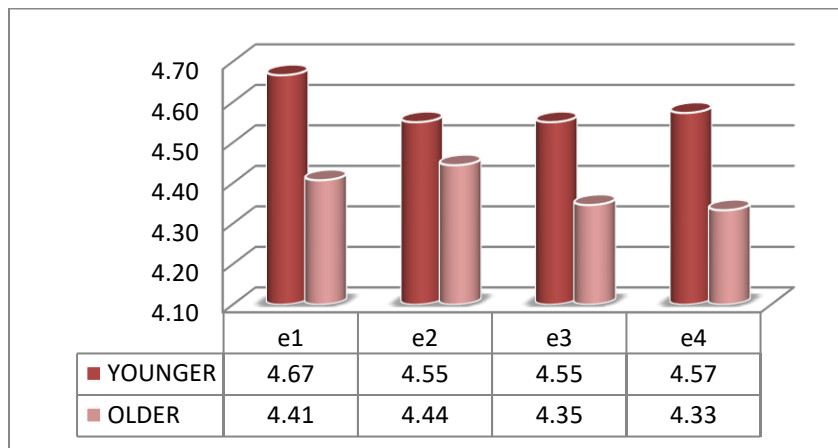
CONCLUSION: In comparing the responses given by junior and senior lecturers, it is noted that their mean values are for both groups above 4.3 units, but in all cases the average perception for younger lecturers is higher than average perception of experienced er lecturers

6.3 University of Belgrade, Serbia

Figure 6.3.1 Average rating in implementation of teaching strategies involving students for lecturers of the Universities of Belgrade

	1	2	3	4	5
s1	0	1	3	15	38
s2	0	0	1	8	48
s3	0	1	9	17	30
s4	2	8	11	18	17
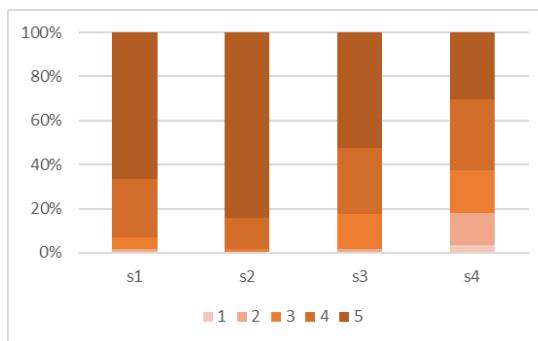
Table 6.3.1 Descriptive distribution of implementation of teaching strategies involving students and comparison between young and experienced lecturers at the University of Belgrade

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
s1	4.579	5	5	4.565	5	5	4.588	5	5
s2	4.825	5	5	4.913	5	5	4.765	5	5
s3	4.333	5	5	4.652	5	5	4.118	4	5
s4	3.714	4	4	3.957	4	4	3.545	4	3

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CONCLUSION: .....

Figure 6.3.2 Average rating in implementation of intellectual engagement and impact on learning for lecturers of the Universities of Belgrade

	1	2	3	4	5
a1	0	1	8	27	21
a2	1	0	9	27	20
a3	0	2	13	20	22
a4	0	0	6	21	30
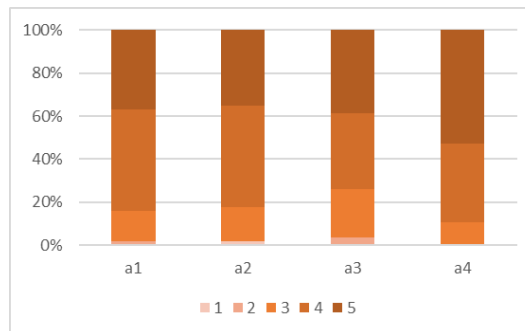
Table 6.3.2 Descriptive distribution of implementation of intellectual engagement and impact on learning and comparison between young and experienced lecturers at the University of Belgrade

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
a1	4.193	4	4	4.13	4	4	4.235	4	5
a2	4.14	4	4	4.043	4	4	4.206	4	
a3	4.088	4	5	4.087	4		4.088	4	
a4	4.421	5	5	4.565	5	5	4.324	4	5

CONCLUSION: .....

Figure 6.3.3 Average assessment of the factors that determine the teacher-student relationship according to the lecturers' perceptions of the Universities of Belgrade

	1	2	3	4	5
o1	0	0	7	24	26
o2	26	11	8	4	8
o3	0	0	1	5	51
o4	0	0	3	19	34

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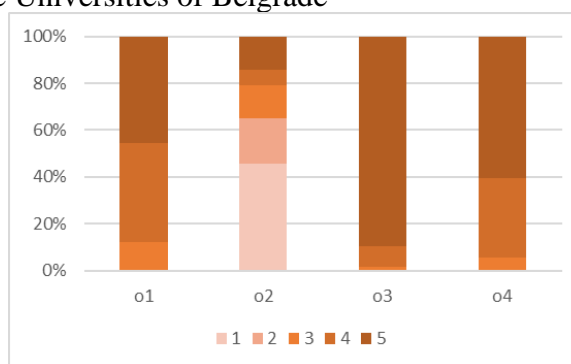Co-funded by the
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Table 6.3.3 Descriptive distribution of teacher-student relationship factors and comparison between young and experienced lecturers at the University of Belgrade

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
o1	4.333	4	5	4.348	4	4	4.324	4	5
o2	2.246	2	1	2.304	2	1	2.206	2	1
o3	4.877	5	5	4.957	5	5	4.824	5	5
o4	4.554	5	5	4.545	5	5	4.559	5	5

CONCLUSION: ....

Figure 6.3.4 Average assessment of the factors that determine the level of cooperation according to the lecturers' perceptions of the Universities of Belgrade

	1	2	3	4	5
b1	7	6	14	16	14
b2	3	3	14	19	18
b3	13	12	7	12	13
b4	0	0	3	11	43
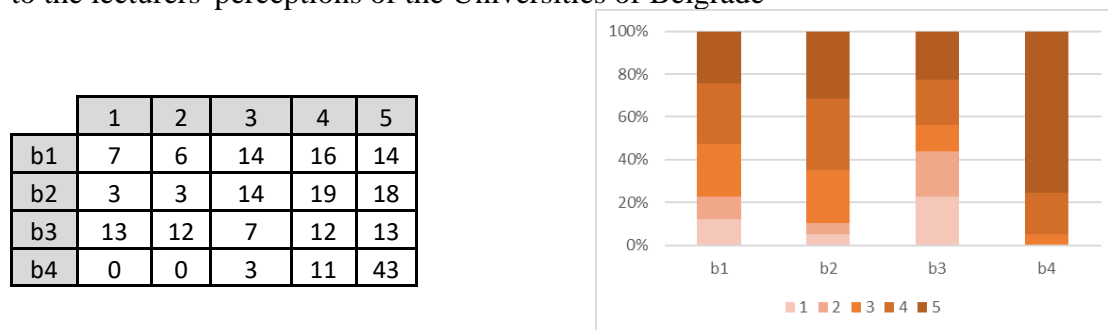
Table 6.3.4 Descriptive distribution of cooperation's factors and comparison between young and experienced lecturers at the University of Belgrade

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
b1	3.421	4	4	3.435	4	4	3.412	3	3
b2	3.807	4	4	3.913	4	4	3.735	4	
b3	3	3	1	3.174	3		2.882	2.5	2
b4	4.702	5	5	4.696	5	5	4.706	5	5

CONCLUSION: .....

Figure 6.3.5 Average assessment of the factors that determine the level of Student-centered teaching and learning according to the lecturers' perceptions of the Universities of Belgrade

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	1	2	3	4	5
c1	0	0	2	20	35
c2	1	6	19	20	11
c3	0	1	3	13	39
c4	0	0	3	5	48

Table 6.3.5 Descriptive distribution of the factors that determine the level of Student-centered teaching and learning and comparison between young and experienced lecturers at the University of Belgrade

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
c1	4.579	5	5	4.478	5	5	4.647	5	5
c2	3.596	4	4	3.478	4	4	3.676	4	
c3	4.607	5	5	4.522	5	5	4.667	5	5
c4	4.804	5	5	4.864	5	5	4.765	5	5

CONCLUSION: .....

Figure 6.3.6 Average assessment of the factors that determine the level of enthusiasm and style of teaching according to the lecturers' perceptions of the Universities of Belgrade

	1	2	3	4	5
d1	0	1	10	24	22
d2	2	0	5	16	34
d3	9	4	13	15	16
d4	2	0	11	22	22

Table 6.3.6 Descriptive distribution of the factors that determine the level of enthusiasm and style of teaching and comparison between young and experienced lecturers at the University of Belgrade

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
d1	4.175	4	4	4.043	4	4	4.265	4	
d2	4.404	5	5	4.261	5	5	4.5	5	5
d3	3.439	4		3.522	4	4	3.382	3.5	5
d4	4.088	4	4	4	4	4	4.147	4	5

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CONCLUSION: ....

Figure 6.3.7 Average assessment of the factors that determine the level of class structure according to the lecturers' perceptions of the Universities of Belgrade
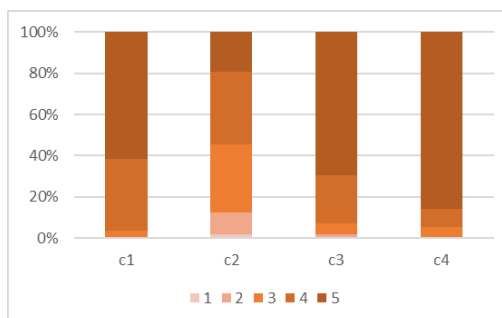
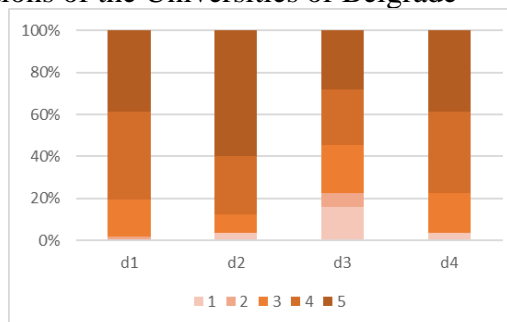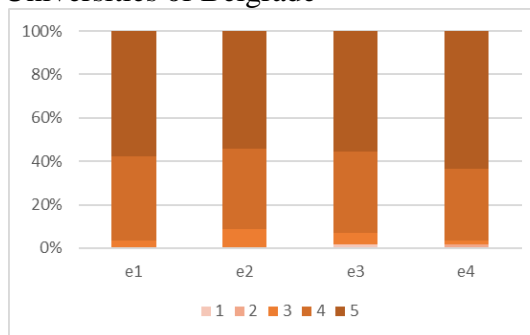|	1	2	3	4	5
e1	0	0	2	22	33
e2	0	0	5	21	31
e3	1	0	3	21	31
e4	0	1	1	18	35

Table 6.3.7 Descriptive distribution of the factors that determine the level of class structure and comparison between young and experienced lecturers at the University of Belgrade

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
e1	4.544	5	5	4.565	5	5	4.529	5	5
e2	4.456	5	5	4.522	5	5	4.412	5	5
e3	4.446	5	5	4.478	5	5	4.424	5	5
e4	4.582	5	5	4.739	5	5	4.469	5	5

CONCLUSION: These answers show that there is a both a great need and a space for the development of pedagogical competences among lecturers and improvement of their work

6.4 University of Novi Sad

Figure 6.4.1 Average rating in implementation of teaching strategies involving students for lecturers of the Universities of Novi Sad

	1	2	3	4	5
s1	1	1	0	10	18
s2	0	0	0	4	26
s3	0	3	6	10	11
s4	1	2	10	7	10

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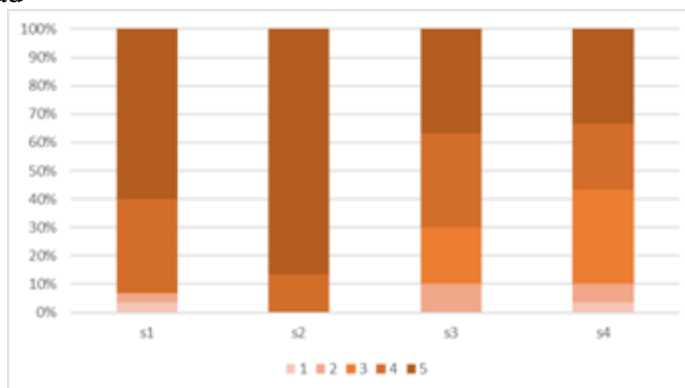Co-funded by the
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Table 6.4.1 Descriptive distribution of implementation of teaching strategies involving students and comparison between young and experienced lecturers at the University of Novi Sad

statement	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
s1	4.433	5	5	4.438	5	5	4.429	5	5
s2	4.867	5	5	4.875	5	5	4.857	5	5
s3	3.967	4		3.813	4	4	4.143	4	
s4	3.767	4	3	3.563	3.5	3	4	4.5	5

CONCLUSION: All respondents highly assessed the truthfulness of all claims related to strategies involving students. This particularly applies to the statement s2. The weakest in this group is the truthfulness of the claim s4 (you give homework to students, short-term borrowings, the obligation to read something, or some other form of preparation for the next class). It can be noted that experienced er lecturers often give homework, while younger ones often give clear instructions for the next class.

Figure 6.4.2 Average rating in implementation of intellectual engagement and impact on learning for lecturers of the Universities of Novi Sad

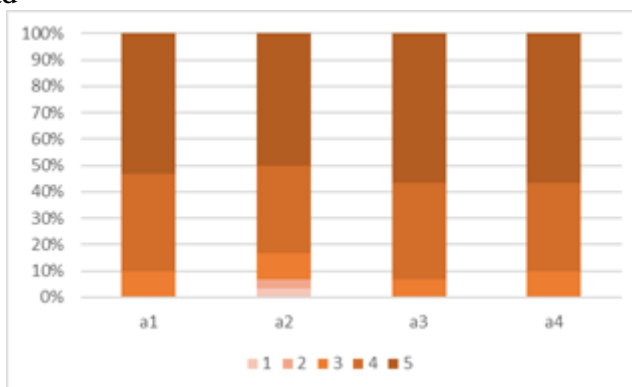|	1	2	3	4	5
a1	0	0	3	11	16
a2	1	1	3	10	15
a3	0	0	2	11	17
a4	0	0	3	10	17

Table 6.4.2 Descriptive distribution of implementation of intellectual engagement and impact on learning and comparison between young and experienced lecturers at the University of Novi Sad

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
a1	4.433	5	5	4.563	5	5	4.286	4	4
a2	4.233	4.5	5	4.438	5	5	4	4	
a3	4.5	5	5	4.688	5	5	4.286	4	4
a4	4.467	5	5	4.688	5	5	4.214	4	

CONCLUSION: The respondents rated all the claims from this group with an extremely high grade, i.e., they fully agree with all four claims. However, younger respondents more often stated

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that the claims were quite correct, while the experienced er ones chose the option to be generally correct. In other words, the younger ones evaluated all the claims more strongly for one grade.

Figure 6.4.3 Average assessment of the factors that determine the teacher-student relationship according to the lecturers' perceptions of the Universities of Novi Sad

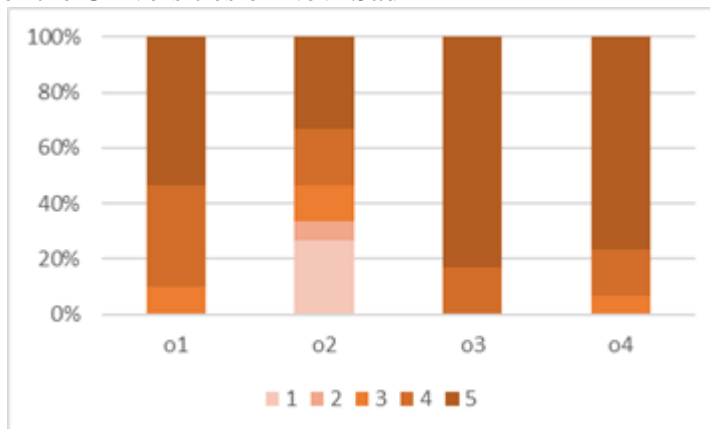|	1	2	3	4	5
o1	0	0	3	11	16
o2	8	2	4	6	10
o3	0	0	0	5	25
o4	0	0	2	5	23

Table 6.4.3 Descriptive distribution of teacher-student relationship factors and comparison between young and experienced lecturers at the University of Novi Sad

	TOTAL			Young lecturers			Experienced lecturers		
statements	mean	median	mod	mean	median	mod	mean	median	mod
o1	4.433	5	5	4.5	4.5	4	4.357	5	5
o2	3.267	4	5	3.438	4	4	3.071	3.5	1
o3	4.833	5	5	4.813	5	5	4.857	5	5
o4	4.7	5	5	4.875	5	5	4.5	5	5

CONCLUSION: Respondents highly assessed their relationship with students; stating that they are almost or completely correct to communicate with students openly and freely (o1), to respect communicate with students with respect (o3) and to welcome students with a smile and friendly tone (o4). Their only openness for various forms of electronic communication (o2) was considerably weaker.

Figure 6.4.4 Average assessment of the factors that determine the level of cooperation according to the lecturers' perceptions of the Universities of Novi Sad

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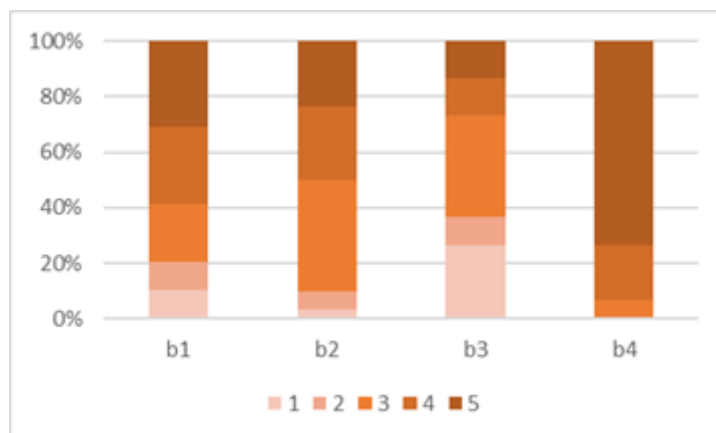|	1	2	3	4	5
b1	3	3	6	8	9
b2	1	2	12	8	7
b3	8	3	11	4	4
b4	0	0	2	6	22

Table 6.4.4 Descriptive distribution of cooperation's factors and comparison between young and experienced lecturers at the University of Novi Sad

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
b1	3.586	4		3.5	3.5		3.692	4	4
b2	3.621	4	3	3.625	4		3.615	3	3
b3	2.828	3	3	3	3	3	2.615	3	1
b4	4.655	5	5	4.75	5	5	4.538	5	5

CONCLUSION: In the group of claims on cooperation, the weakest assessment is the claim b3, i.e. respondents are very poorly using collaborative software. In the group of experienced ly respondents, most of them chose option 1 (not at all true), which indicates that experienced er respondents are almost not using collaborative software. On the other hand, all respondents expect students to get involved in the discussion and express their opinion (average 4.65).

Figure 6.4.5 Average assessment of the factors that determine the level of Student-centered teaching and learning according to the lecturers' perceptions of the Universities of Novi Sad

	1	2	3	4	5
c1	0	0	2	12	16
c2	0	4	8	8	10
c3	0	0	3	9	18
c4	0	0	0	8	22

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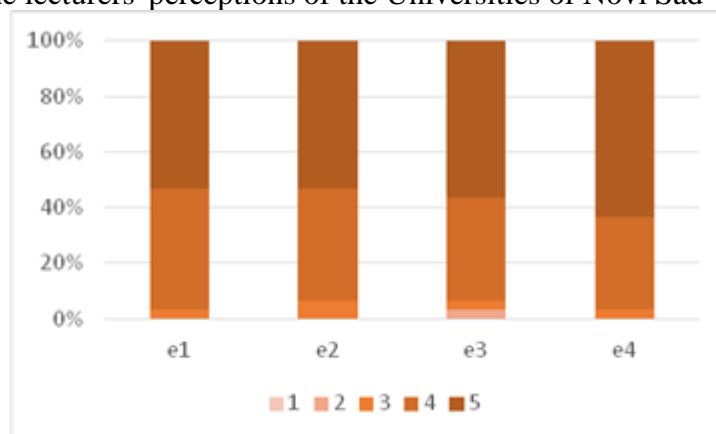Co-funded by the
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Table 6.4.5 Descriptive distribution of the factors that determine the level of Student-centered teaching and learning and comparison between young and experienced lecturers at the University of Novi Sad

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
c1	4.467	5	5	4.563	5	5	4.357	4	4
c2	3.8	4	5	3.813	4	4	3.786	4	
c3	4.5	5	5	4.438	5	5	4.571	5	5
c4	4.733	5	5	4.75	5	5	4.714	5	5

CONCLUSION: In the group of assertions on teaching and learning directed at students, the respondents rated the most, that is, they fully consider the truth of c4 (*You are interested in the opinion of students*). The least agreement was found with the claim c2.

Figure 6.4.6 Average assessment of the factors that determine the level of enthusiasm and style of teaching according to the lecturers' perceptions of the Universities of Novi Sad

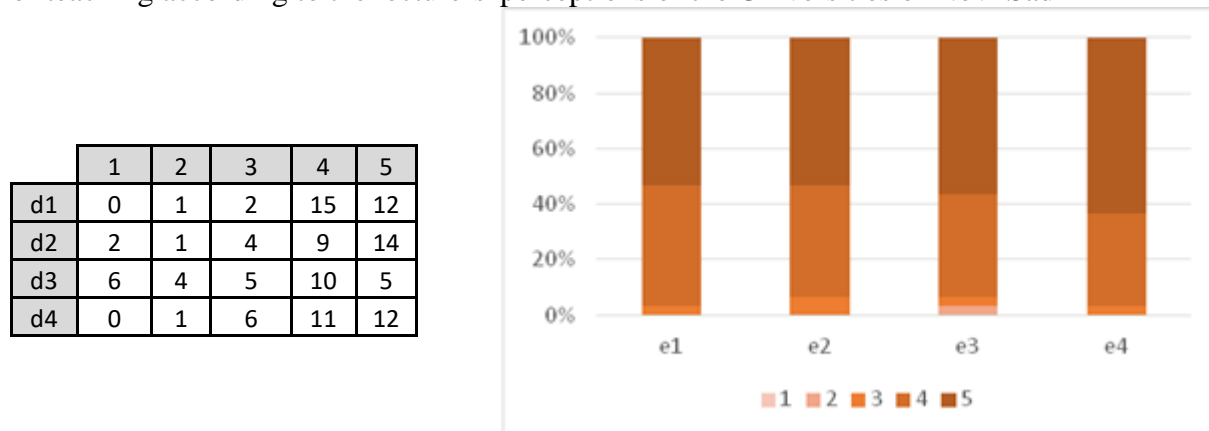|	1	2	3	4	5
d1	0	1	2	15	12
d2	2	1	4	9	14
d3	6	4	5	10	5
d4	0	1	6	11	12

 Table 6.4.6 Descriptive distribution of the factors that determine the level of enthusiasm and style of teaching and comparison between young and experienced lecturers at the University of Novi Sad

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
d1	4.267	4	4	4.25	4	4	4.286	4	4
d2	4.067	4	5	3.938	4	5	4.214	4.5	5
d3	3.133	3.5	4	3	3	4	3.286	4	4
d4	4.133	4		3.938	4	4	4.357	5	5

CONCLUSION: The smallest agreement is observed with the statement d3 that refers to the work in pairs or group work, which is probably the consequence or lack of time or lack of conditions (a large number of students). Significant agreement (4.27) respondents showed with

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the assertion that they changed teaching methods to maintain students' interest. However, the answers to these two questions are to a certain extent inconsistent.

Figure 6.4.7 Average assessment of the factors that determine the level of class structure according to the lecturers' perceptions of the Universities of Novi Sad

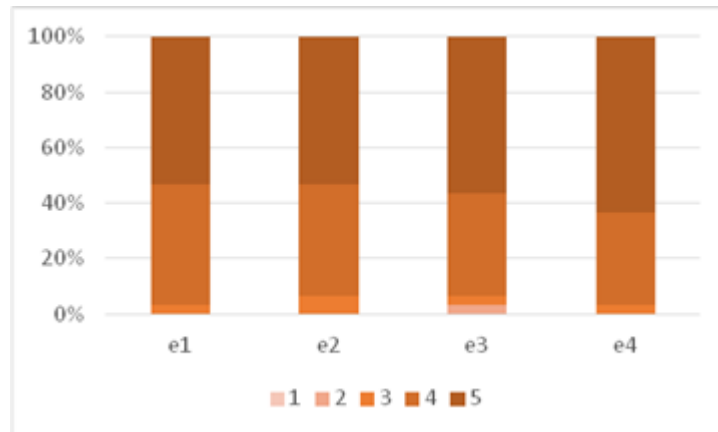|	1	2	3	4	5
e1	0	0	1	13	16
e2	0	0	2	12	16
e3	0	1	1	11	17
e4	0	0	1	10	19

Table 6.4.7 Descriptive distribution of the factors that determine the level of class structure and comparison between young and experienced lecturers at the University of Novi Sad

	TOTAL			Young lecturers			Experienced lecturers		
statements	mean	median	mod	mean	median	mod	mean	median	mod
e1	4.5	5	5	4.438	4	4	4.571	5	5
e2	4.467	5	5	4.5	5	5	4.429	4.5	
e3	4.467	5	5	4.5	5	5	4.429	5	5
e4	4.6	5	5	4.625	5	5	4.571	5	5

CONCLUSION: All the claims concerning the structure are rated very high, that is, the responders consider almost all of the above claims almost or completely true.

6.5 University of Kragujevac, Serbia

Figure 6.5.1 Average rating in implementation of teaching strategies involving students for lecturers of the Universities of Kragujevac

	1	2	3	4	5
s1	1	1	3	11	29
s2	0	0	1	6	39
s3	0	4	2	15	24
s4	0	7	5	18	15

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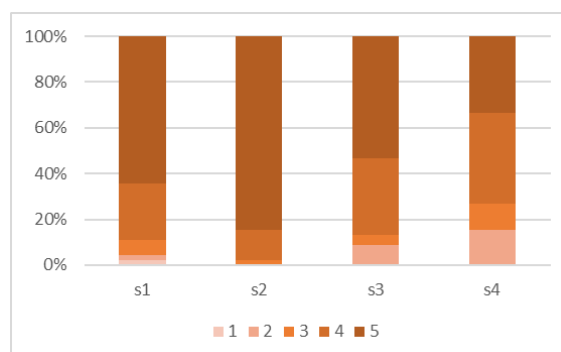tecomp@ni.ac.rs
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Table 6.5.1 Descriptive distribution of implementation of teaching strategies involving students and comparison between young and experienced lecturers at the University of Kragujevac

statement	TOTAL			YOUNGER			EXPERIENCED ER		
	mean	median	mod	mean	median	mod	mean	median	mod
s1	4.467	5	5	4.333	5	5	4.583	5	5
s2	4.826	5	5	4.81	5	5	4.84	5	5
s3	4.311	5	5	4.476	5	5	4.167	4.5	5
s4	3.911	4	4	3.952	4	4	3.875	4	4

CONCLUSION: Lecturers rated with high-grade their teaching strategies (communication with students in order to achieve optimum results in teaching and learning). As for the first three statements (S1, S2 and S3), the students agree with those answers.

Figure 6.5.2 Average rating in implementation of intellectual engagement and impact on learning for lecturers of the Universities of Kragujevac

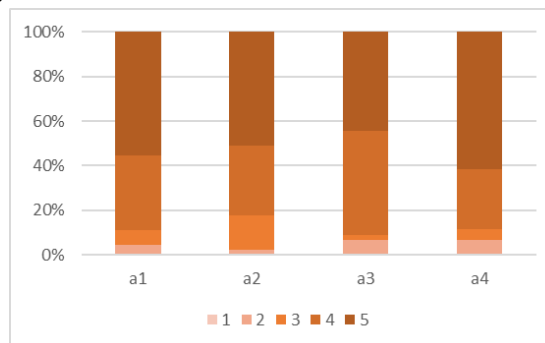|	1	2	3	4	5
a1	0	2	3	15	25
a2	0	1	7	14	23
a3	0	3	1	21	20
a4	0	3	2	12	27

Table 6.5.2 Descriptive distribution of implementation of intellectual engagement and impact on learning and comparison between young and experienced lecturers at the University of Kragujevac

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
a1	4.4	5	5	4.381	5	5	4.417	5	5
a2	4.311	5	5	4.333	5	5	4.292	4	5
a3	4.289	4	4	4.286	4		4.292	4	4
a4	4.432	5	5	4.476	5	5	4.391	5	5

CONCLUSION: Lecturers have relatively highly estimated their engagement in actively engaging students during lectures, which is not fully supported by student responses. It would be desirable to inspect the reasons for this disagreement.

Figure 6.5.3 Average assessment of the factors that determine the teacher-student relationship according to the lecturers' perceptions of the Universities of Kragujevac

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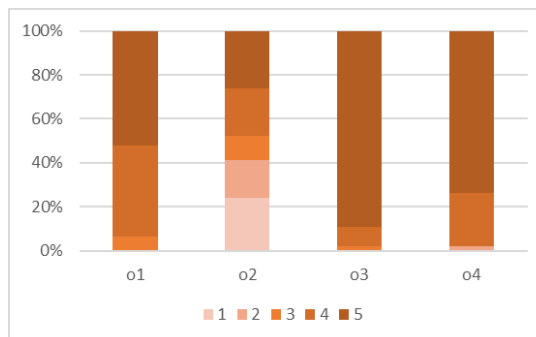|	1	2	3	4	5
o1	0	0	3	19	24
o2	11	8	5	10	12
o3	0	0	1	4	41
o4	0	1	0	11	34

Table 6.5.3 Descriptive distribution of teacher-student relationship factors and comparison between young and experienced lecturers at the University of Kragujevac

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
o1	4.457	5	5	4.476	4	4	4.44	5	5
o2	3.087	3		3	3	1	3.16	3	5
o3	4.87	5	5	4.952	5	5	4.8	5	5
o4	4.696	5	5	4.714	5	5	4.68	5	5

CONCLUSION: The teacher-student relationship was generally characterized by lecturers as being very good, which agrees with the assessment given by students. This is very important, because good communication with mutual respect is a prerequisite for a good working atmosphere.

Figure 6.5.4 Average assessment of the factors that determine the level of cooperation according to the lecturers' perceptions of the Universities of Kragujevac

	1	2	3	4	5
b1	2	6	10	13	14
b2	1	2	9	16	17
b3	13	10	8	11	3
b4	0	0	3	7	34

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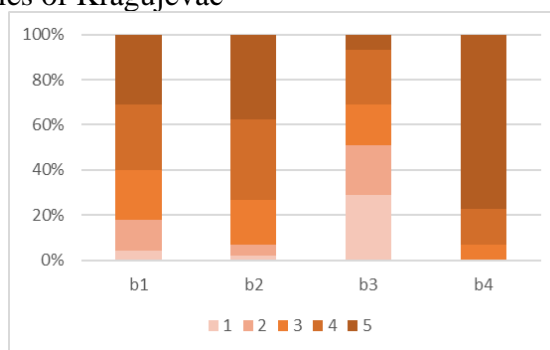Erasmus+ Programme
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Table 6.5.4 Descriptive distribution of cooperation's factors and comparison between young and experienced lecturers at the University of Kragujevac

statements	TOTAL			YOUNGER			EXPERIENCED ER		
	mean	median	mod	mean	median	mod	mean	median	mod
b1	3.689	4		3.667	4		3.708	4	5
b2	4.022	4		3.952	4		4.083	4	4
b3	2.578	2	1	2.524	2	1	2.625	2.5	1
b4	4.705	5	5	4.7	5	5	4.708	5	5

CONCLUSION: According to lecturers, they generally consider that in a good way (the average for b1, b2 and b4 is greater than 3.5) stimulate student collaboration during classes and learning, except in case of using collaborative software and communicating with students (the average for b3 is 2.578). Students are slightly less likely to evaluate these teacher activities as good, but they agree that using collaborative software in communication with students is the least represented.

Figure 6.5.5 Average assessment of the factors that determine the level of student-centered teaching and learning according to the lecturers' perceptions of the Universities of Kragujevac

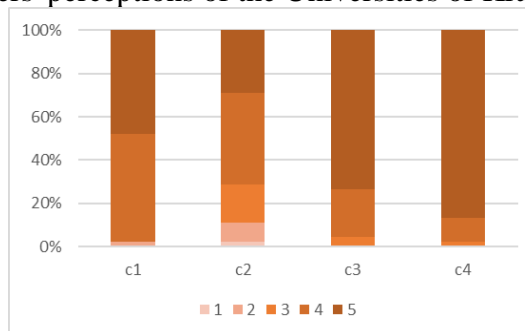|	1	2	3	4	5
c1	0	1	0	23	22
c2	1	4	8	19	13
c3	0	0	2	10	33
c4	0	0	1	5	39

Table 6.5.5 Descriptive distribution of the factors that determine the level of Student-centered teaching and learning and comparison between young and experienced lecturers at the University of Kragujevac

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
c1	4.435	4	4	4.571	5	5	4.32	4	4
c2	3.867	4	4	3.857	4	4	3.875	4	4
c3	4.689	5	5	4.714	5	5	4.667	5	5
c4	4.844	5	5	4.905	5	5	4.792	5	5

CONCLUSION: Lecturers estimate that they, taking into account the knowledge, interests and abilities of the students, shaped in an enviable manner (the average for c1, c2, c3 and c4 is greater than 3.5) teaching process. In this case again students evaluate these teacher activities as

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less adequate. It would be important and useful to examine deeper the reasons for this disagreement.

Figure 6.5.6 Average assessment of the factors that determine the level of enthusiasm and style of teaching according to the lecturers' perceptions of the Universities of Kragujevac

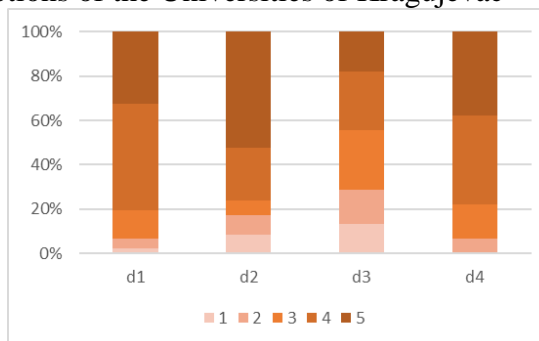|	1	2	3	4	5
d1	1	2	6	22	15
d2	4	4	3	11	24
d3	6	7	12	12	8
d4	0	3	7	18	17

Table 6.5.6 Descriptive distribution of the factors that determine the level of enthusiasm and style of teaching and comparison between young and experienced lecturers at the University of Kragujevac

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
d1	4.043	4	4	4.143	4	4	3.96	4	4
d2	4.022	5	5	4.095	4	5	3.96	5	5
d3	3.2	3		3.238	3	3	3.167	3	4
d4	4.089	4	4	4	4	4	4.167	4	

CONCLUSION: Majority of lecturers estimate that they adapt methods and type of work to students to a great extent. On the contrary, the students consider that only a few professors do it properly. Again, it would be great and helpful to inspect the reasons for this disagreement.

Figure 6.5.7 Average assessment of the factors that determine the level of class structure according to the lecturers' perceptions of the Universities of Kragujevac

	1	2	3	4	5
e1	0	0	2	14	30
e2	0	0	2	16	28
e3	0	0	2	10	33
e4	0	0	1	7	38

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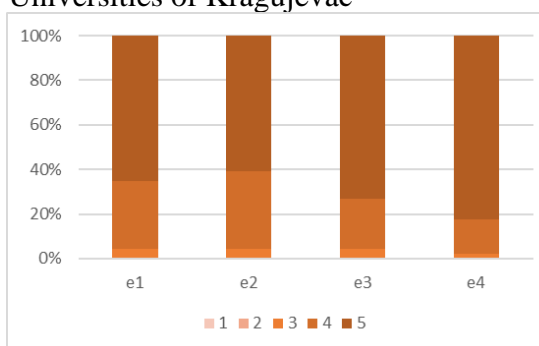Co-funded by the
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Table 6.5.7 Descriptive distribution of the factors that determine the level of class structure and comparison between young and experienced lecturers at the University of Kragujevac

statements	TOTAL			Young lecturers			Experienced lecturers		
	mean	median	mod	mean	median	mod	mean	median	mod
e1	4.609	5	5	4.571	5	5	4.64	5	5
e2	4.565	5	5	4.524	5	5	4.6	5	5
e3	4.689	5	5	4.667	5	5	4.708	5	5
e4	4.804	5	5	4.81	5	5	4.8	5	5

CONCLUSION: Lecturers estimate the structure of their classes and lectures as excellent, which stays in line with student assessments.

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APPENDIX

Appendix 1   Survey for lecturers

The TeComp main objective is improvement of the quality of higher education in Serbia and Albania. These questionnaires will be base for the comparative analysis of the current situation at the EU and Serbian and Albanian institutions.

PART I: Basic data of the research participants and the data on their previous education that could influence their teaching competences and opinions

Dear participants,

The survey in front of you is anonymous and its results will be used for scientific purposes. Please, answer the questions as honestly and accurately as possible.

a)   Your gender is _____

b)   You have teaching experience at the university, including assistantship, of _____ years.

c)   The area of your teaching is

☐ Mathematics   ☐ Computer sciences   ☐ Physics   ☐ Chemistry   ☐ Geography   ☐ Biology and Ecology

A) The aim of this part of the survey is to identify "state-of-art" and to give detailed picture about the using of modern information technologies in teaching and learning in the field of natural and mathematical sciences at the PC HEIs.

1.   Please rate how many hours, per week, you are spending on the following activities:

activity	hour
scientific research	
realization of teaching	
administration	
preparation of classes	
other activities (managing, popularizing the domain, writing reviews...)	
individual work with students (consultation, conducting study research works, etc.)	

2.   Have you ever studied any of the listed disciplines during your formal education?

Discipline		
methodology of e-learning	☐ YES	☐ NO
methodology of teaching	☐ YES	☐ NO

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3. Please specify the type of e-learning methodology

Discipline		
electronic publishing (Latex, HTML, XML, PDF etc.)	☐ YES	☐ NO
online technologies in teaching	☐ YES	☐ NO
open source software (MOODLE, Python, GeoGebra, MOOC etc.)	☐ YES	☐ NO
I have never studied any of these disciplines	☐ YES	☐ NO

4. During last two years:

You have held at least one teaching lesson in English. If YES, indicate where and when	☐ YES	☐ NO
You have prepared at least part of the lesson on the electronic platform. If YES, indicate on which platform:	☐ YES	☐ NO

5. Have you attended any professional conference that had focus on using innovative technologies in teaching?
   a. YES
   b. NO
6. Have you ever discussed with students about the influence of using comprehensive technologies to the quality of teaching?
   a. YES
   b. NO

PART II: Self-estimation of the quality of teaching and opinions on importance of using modern educational technologies

To what degree are the following statements true to you or closet to your beliefs?

		Not true at all	Generally not true	Equally true and not true	Generally true	Completely true
1.	Using contemporary technology in university teaching is very important for the quality of classes.	1	2	3	4	5
2.	Group work, multimedia presentations and modern software opportunities waste valuable teaching time.	1	2	3	4	5
3.	Students' presentations and discussions waste valuable teaching time.	1	2	3	4	5

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4.	I want to improve my teaching skills in the use of information technologies because it will help me prepare classes more easily.	1	2	3	4	5
5.	I want to improve my teaching skills in the use of educational technologies because it will bring me more respect among students.	1	2	3	4	5
6.	I want to improve my teaching skills in the use of educational technologies because it will bring me more respect among colleagues.	1	2	3	4	5

PART III: Self-assessment of the lecturers' knowledge and skills in using modern information technologies in teaching and learning

Point out to what level the following statements true to you.

		none	few	average	fine	excellent
1.	The level of my knowledge and skills in using Office package software:	1	2	3	4	5
2.	The level of my knowledge and skills in using Open source software:	1	2	3	4	5
3.	The level of my knowledge and skills in using Web conferencing software:	1	2	3	4	5
4.	The level of my knowledge and skills in using Learning Management System (LMS) software:	1	2	3	4	5
5.	The level of my knowledge and skills in using online learning platforms:	1	2	3	4	5
6.	I use electronic materials (presentations) as educational material.	1	2	3	4	5
7.	I use e-books/ e-textbooks as educational material.	1	2	3	4	5
8.	I use animations/movies as educational material.	1	2	3	4	5
9.	I use forums or other forms of online communication in teaching and learning.	1	2	3	4	5
10.	I use online courses as educational material.	1	2	3	4	5
11.	I use web-conferences as educational material	1	2	3	4	5
12.	I use databases in teaching and learning	1	2	3	4	5
13.	I am open for communication with students through social networks (Facebook, Twitter, etc.).	1	2	3	4	5

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PART IV: The use online platforms technology in teaching.

1. Can you see the benefits of using online technologies in teaching and learning?
    a. YES
    b. NO

2. What are these benefits?
    a. save time
    b. easier preparing the classes
    c. higher level of students' interest
    d. higher quality of learning materials
    e. easier learning
    f. better communication between teacher and students

3. Do you use some free online learning platforms for needs of the courses?
   If your answer is yes, please, submit which platform do you use.
    a. YES, _____
    b. NO

4. Do you think that using online learning platforms can
    a. allow students easier and faster access to the learning material
    b. allow students easier and faster access to the relevant information
    c. allow students access at any time
    d. contribute to the realization of the active role of students
    e. contribute to the realization of individualization of learning
    f. better communication between teacher and students

5. Is the system for electronic testing of students developed at your institution?
    a. YES
    b. NO

6. Do you think that the system for self-testing of students has a positive impact on success of learning?
    a. YES
    b. NO

7. Is your HE institution able to provide enough quality and expensive laboratory equipment?
    a. YES
    b. NO

8. Are your students able to participate in experiments from remote locations?
    a. YES
    b. NO

9. The most significant barriers for engaging modern educational technologies in teaching and learning are
    a. Lack of ICT skills
    b. Lack of time
    c. Lack of hardware
    d. Lack of software

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    e. Lack of computer access

Part V

Based on your opinion, at which of the following ratios should teaching and learning contribute to the successful education?

a) 100%-0% b) 75%-25% c) 50%-50% d) 25%-75% e) 0%-100%

B) The aim of this part of the survey is to collect the data of the research participants, Their previous education, interests in teaching skills, the use of teaching strategies and psychology in teaching. It measures how often lecturers use chosen pedagogical methods.

1. Please estimate your English skills in

listening	☐LOW	☐MID	☐HIGH
reading	☐LOW	☐MID	☐HIGH
writing	☐LOW	☐MID	☐HIGH
speaking	☐LOW	☐MID	☐HIGH

2. Have you ever attended a course in any of the listed disciplines during your formal education?

Discipline		
pedagogy	☐ YES	☐ NO
psychology	☐ YES	☐ NO
methodology of teaching	☐ YES	☐ NO
application of new technologies in teaching	☐ YES	☐ NO
English language	☐ YES	☐ NO
I have never studied any of these disciplines	☐ YES	☐ NO

3. Have you ever taken some course or made some self-organized unformal learning (consulted any of the resources: books, articles, online resources, professional organizations, senior colleagues, mentors and so on) in any of the listed disciplines during your career?

Discipline		
pedagogy	☐ YES	☐ NO
psychology	☐ YES	☐ NO

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methodology	☐ YES	☐ NO
application of new technologies in teaching	☐ YES	☐ NO
English language	☐ YES	☐ NO
I have never studied any of these disciplines	☐ YES	☐ NO

4. Do you find teaching skills of university lecturers very important for the quality of their classes?
   a) I completely agree
   b) I partially agree
   c) I disagree

5. Have you attended any professional conference that had focus on teaching?
   a) YES
   b) NO

6. Have you tried to provide feedback from students, apart from institution-provided evaluation, regarding quality of your teaching?
   a) YES
   b) NO

7. What would motivate you to engage in improving your teaching skills?
   a) Gaining more respect among colleagues or/and students
   b) Enablingeasier preparation of classes
   c) Achieving better quality teaching
   d) Attracting more students to elective courses
   e) Gaining some financial or material reward
   f) I am not interested

PART VI: The use of teaching strategies, English language and technology in teaching.

The following statements present the number of different pedagogical and methodological procedures used in teaching. Please answer how frequently you use them in your teaching practice.

Using teaching strategy to engage students						
		Not true at all	Generally not true	Equally true and not true	Generally true	Completely true
1.	I provide prompt and detailed feedback on students' tests, assignments or works in progress.	1	2	3	4	5
2.	I provide clear information about the way in which the course is going to be evaluated.	1	2	3	4	5
3.	I give students clear instructions how to prepare for the next class.	1	2	3	4	5
4.	I give students homework assignments,	1	2	3	4	5

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	short-term tasks, or some obligatory reading or other form of class preparation.					
Intellectual engagement and learning impact						
5.	I encourage students to produce new ideas and find creative solutions to the problems we study.	1	2	3	4	5
6.	I stimulate students to find multiple solutions to the problem and compare them.	1	2	3	4	5
7.	I usually initiate discussions in class over complex problems.	1	2	3	4	5
8.	I ask students to explain their ideas.	1	2	3	4	5
Teacher – student relationship						
9.	Students communicate with me openly and freely.	1	2	3	4	5
10.	I am open for different forms of electronic communication and social networking with students (Facebook, Twitter, etc.).	1	2	3	4	5
11.	I treat students with respect.	1	2	3	4	5
12.	I welcome students with a smile and warm and friendly tone.	1	2	3	4	5
Collaboration						
13.	I give students group tasks to perform during class or at home.	1	2	3	4	5
14.	I encourage students to help each other understand content and communicate during classes and while preparing for exams.	1	2	3	4	5
15.	I use collaborative editing software with my students (Google Docs, Wikis, etc.).	1	2	3	4	5
16.	I ask students to involve in discussions and introduce their opinion.	1	2	3	4	5
Student-centered learning practices						
17.	I am ready to make slight changes in content or methods of my course in order to fit it to students' needs.	1	2	3	4	5
18.	I respect student's preferences and wishes when giving individual assignments.	1	2	3	4	5
19.	I connect the idea from my courses to students' prior experiences and knowledge.	1	2	3	4	5
20.	I am interested in students' opinion.	1	2	3	4	5
Enthusiasm and teaching style						

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21.	I change teaching methods in order to keep students interested.	1	2	3	4	5
22.	I use e-books, presentations, video clips, films, etc. in my classes.	1	2	3	4	5
23.	I use work in pairs, group work, workshops or other techniques that promote interaction during classes.	1	2	3	4	5
24.	I encourage students to look for the learning resources apart from obligatory materials and critically estimate their reliability.	1	2	3	4	5
Structure						
25.	During classes I summarize and emphasize important points.	1	2	3	4	5
26.	During classes I am aware of time and keep it well adjusted.	1	2	3	4	5
27.	I structure and organize learning material.	1	2	3	4	5
28.	I take care that all my classes are well structured.	1	2	3	4	5

Appendix 2 Survey for students

The TeComp main objective is improvement of the quality of higher education in Serbia and Albania. These questionnaires will be base for the comparative analysis of the current situation at the EU and Serbian and Albanian institutions.

PART I: Basic data of the research participants and the data on their previous education that could influence their teaching competences and opinions

Dear participants,

the survey in front of you is anonymous and its results will be used for scientific purposes. Please, answer the questions as honestly and accurately as possible.

d) Your gender is _____

e) The level of your study is:

☐ Undergraduate studies   ☐ Master studies   ☐ Doctoral studies

f) The year of your studies is:

☐ first   ☐ second   ☐ third   ☐ fourth   ☐ fifth

g) The study program you are currently attending is in the field of:

☐ Mathematics ☐ Computer sciences ☐ Physics ☐ Chemistry ☐ Geography ☐ Biology and Ecology

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A) The aim of this part of the survey is to identify "state-of-art" and to give detailed picture about the using of modern information technologies in teaching and learning in the field of natural and mathematical sciences at the PC HEIs.

7. Please rate how many hours, per week, you are spending on the following activities:

activity	hour
attendance at classes (lectures and exercises)	
doing homework and other activities	
self-study	
work (learning) with other students	
other activities which are realized at the Faculty	

8. Have you ever attended a course in any of the listed disciplines during your education?

Discipline		
methodology of e-learning	☐ YES	☐ NO
methodology of teaching	☐ YES	☐ NO

9. Please specify the type of disciplines in e-learning methodologywhich you have studied during your education

Discipline		
electronic publishing (Latex, HTML, XML, PDF etc.)	☐ YES	☐ NO
online technologies in teaching	☐ YES	☐ NO
open source software (MOODLE, Python, GeoGebra, MOOC etc.)	☐ YES	☐ NO
I have never studied any of these disciplines	☐ YES	☐ NO

10. During your study:

You attended at least one lecture, in the field of your study realized in English. If YES, indicate where and when	☐ YES	☐ NO
You have an opportunity to attend some course (or a part of course) realized on an electronic platform? If YES, indicate on which platform:	☐ YES	☐ NO

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PART II: Estimation of the quality of teaching and learning and opinions on importance of using modern educational technologies

A. To what extent do you agree with the following statements?

New technologies - electronic materials (presentations), animations/movies, online learning platforms, web-conferences	Not true at all	Generally not true	Equally true and not true	Generally true	Completely true
7. The use of new technologies in teaching motivates students to get more involved in learning activities.	1	2	3	4	5
8. The use of modern technologies in teaching help students acquire knowledge more successfully.	1	2	3	4	5
9. The use of contemporary technology in university teaching allows students to be more creative and imaginative.	1	2	3	4	5
10. The use of modern technologies in teaching promotes the development of students' interpersonal skills (e.g., ability to relate or work with others).	1	2	3	4	5
11. The use of modern technology in increases students' confidence to participate actively in the class.	1	2	3	4	5
12. Using online learning platforms allow students easier and faster access to the relevant information.	1	2	3	4	5
13. The use of online learning platforms contribute to the realization of individualization of learning.	1	2	3	4	5
14. The use of new technologies in teaching and learning is essential to prepare students to live and work in the 21st century.	1	2	3	4	5
15. Lecturers who use modern technology in teaching are more respected by students.	1	2	3	4	5
16. It is very important that lecturers are open for communication with studentsthrough social networks (Facebook, Twitter, etc.).	1	2	3	4	5
17. The use of online learning platforms increases the amount of stress and	1	2	3	4	5

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	anxiety among students.					
18.	The use of modern technologies in teachingcontributes to students being less interestedin the contents of lectures.	1	2	3	4	5

B. Please answerthe following statements, in respect of the percentage of lecturers who give you opportunities for using modern technologies in learning.

		None of lecturers	Few of them	Some of them	The most of them
14	Students can communicate to lecturers through forums or other forms of online communication.	1	2	3	4
15	Lecturers are open for communication with students through social networks (Facebook, Twitter, etc.).	1	2	3	4
16	Lecturers post the results of tests, give assignments, and share other valuable information with students online.	1	2	3	4
17	Lecturers use online examination system to test students.	1	2	3	4
18	Lecturers share with students electronic textbooks and use multimedia learning software and platforms (Moodle for example).	1	2	3	4
19	During classes lecturers use electronic materials (presentations), animations/movies, etc. as educational material.	1	2	3	4
20	Lecturers encourage us to use e-books, e-textbooks and other online material as educational material.	1	2	3	4
21	Students are encouraged by the lecturers to use online courses as educational material.	1	2	3	4
22	Lecturers use online learning platforms in classes.	1	2	3	4
23	Lecturers encourage students to work in groups by creating online forums to discuss about certain topic.	1	2	3	4
24	Students are instructed how to use	1	2	3	4

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		1	2	3	4
	online tools, learning platforms and other internet and electronic sources when completing their assignments.				
25	Lecturers create online questionnaires for the purpose of facilitating students' self-testing process.	1	2	3	4
26	Students get prompt answers to questions asked through online communication tools.	1	2	3	4
27	Lecturers expect students to use collaborative editing software in communication with them and other students (Google Docs, Wikis, etc.).	1	2	3	4
28	Lecturers make available electronic bases of secondary sources that they recommend for individual or group research tasks.	1	2	3	4
29	During classes, lecturers use web-conferences as educational material.	1	2	3	4

Part III

Based on your opinion, at which of the following ratios should teaching and learning contribute to the successful education?

a) 100%-0% b) 75%-25% c) 50%-50% d) 25%-75% e) 0%-100%

B) The aim of this part of the survey is to collect the data of the importance on using different pedagogical and methodological procedures in learning.

1. Have you ever attended a course in any of the listed disciplines during your formal education?

Discipline		
pedagogy	☐ YES	☐ NO
psychology	☐ YES	☐ NO
Methodology of teaching	☐ YES	☐ NO
application of new technologies in teaching	☐ YES	☐ NO
English language	☐ YES	☐ NO
I have never studied any of these disciplines	☐ YES	☐ NO

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2. Have you ever been involved in giving feedback and evaluation of your study program or teaching quality at your institution?
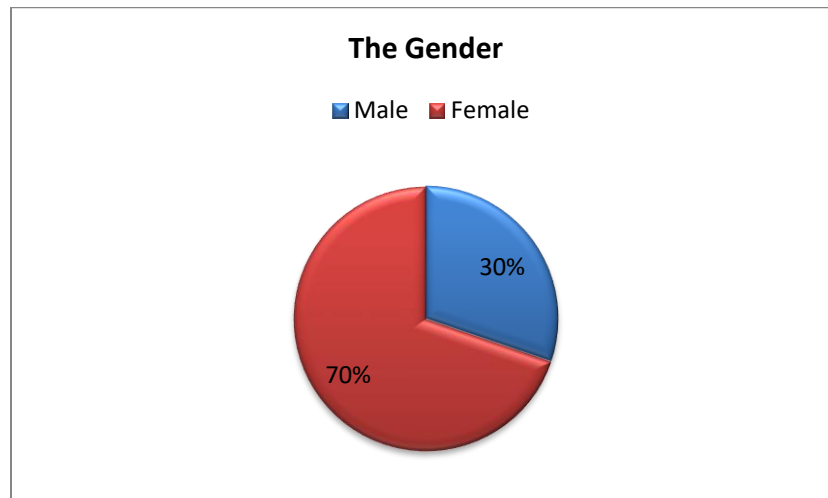   c) YES
   d) NO

Please answer the listed statements, in respect of the percentage of the teacher who gave you opportunities for different pedagogical and methodological procedures

		None of lecturers	Few of them	Some of them	The most of them
Teaching strategies that engage students					
29.	I get feedback from my lecturers on my tests, assignments or works in progress.	1	2	3	4
30.	I get clear information about the way in which the course is going to be evaluated.	1	2	3	4
31.	I get clear instructions from lecturers how to prepare for the next class.	1	2	3	4
32.	Lecturers give us homework assignments, short-term tasks, or some obligatory reading or other form of preparation for the next class.	1	2	3	4
Intellectual engagement and learning impact					
33.	We were encouraged to produce new ideas and find creative solutions to the problems we studied.	1	2	3	4
34.	In classes we seek for multiple solutions to the problem and compare them.	1	2	3	4
35.	In classes, we usually have discussions over complex problems.	1	2	3	4
36.	Lecturers ask us to explain our ideas.	1	2	3	4
Teacher – student relationship					
37.	I can communicate to the lecturers openly and freely.	1	2	3	4
38.	I can communicate to lecturers through social networks (Facebook, Twitter, etc.).	1	2	3	4
39.	Lecturers treat me with respect.	1	2	3	4
40.	Lecturers welcome us with smile and friendly tone.	1	2	3	4
Collaboration					
41.	We are often assigned group tasks to perform in class or at home.	1	2	3	4
42.	Students are encouraged to share their knowledge and help other students in classes or while	1	2	3	4

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	preparing for exams.				
43.	Lecturers expect us to use collaborative editing software in communication with them and other students (Google Docs, Wikis, etc.).	1	2	3	4
44.	Lecturers expect us to get involved by stating our opinion.	1	2	3	4
Student-centered learning practices					
45.	Lecturers show flexibility concerning content or methods of their course in order to fit it to students' needs.	1	2	3	4
46.	I can freely choose the themes of individual assignments in accordance with my wishes and preferences.	1	2	3	4
47.	Lecturers try to connect the contents of their courses with our prior experiences and knowledge.	1	2	3	4
48.	Lecturers show interest in students' opinions.	1	2	3	4
Enthusiasm and teaching style					
49.	Lecturers keep students interested by changing methods and way of work from class to class.	1	2	3	4
50.	Lecturers use e-books, presentations, video clips, films, etc. in classes.	1	2	3	4
51.	Lecturers use work in pairs, group work, workshops or other techniques that promote interaction among students during classes.	1	2	3	4
52.	Lecturers encourage us to look for the learning resources other than obligatory materials and critically estimate their reliability.	1	2	3	4
Structure					
25.	During classes lecturers summarize and emphasize important points.	1	2	3	4
26.	Lecturers adjust the timing of the classes and manage the time of the classes well.	1	2	3	4
27.	Learning materials are well structured and organized.	1	2	3	4
28.	Classes are well structured.	1	2	3	4

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Appendix 3   Results of survey for students for the Universities of Gjirokastra and Korca

h)   Your gender is _____

The Gender

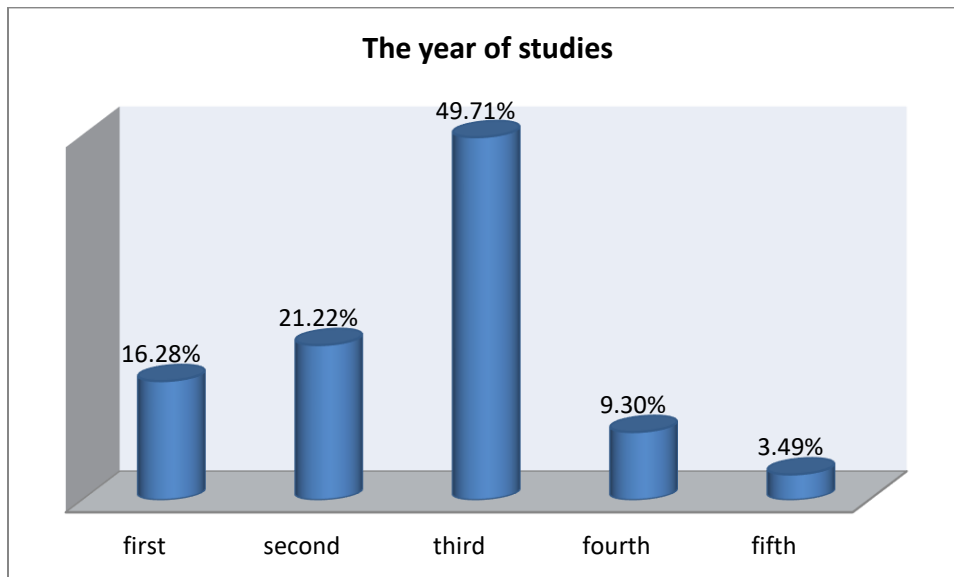i)   The level of your study is:
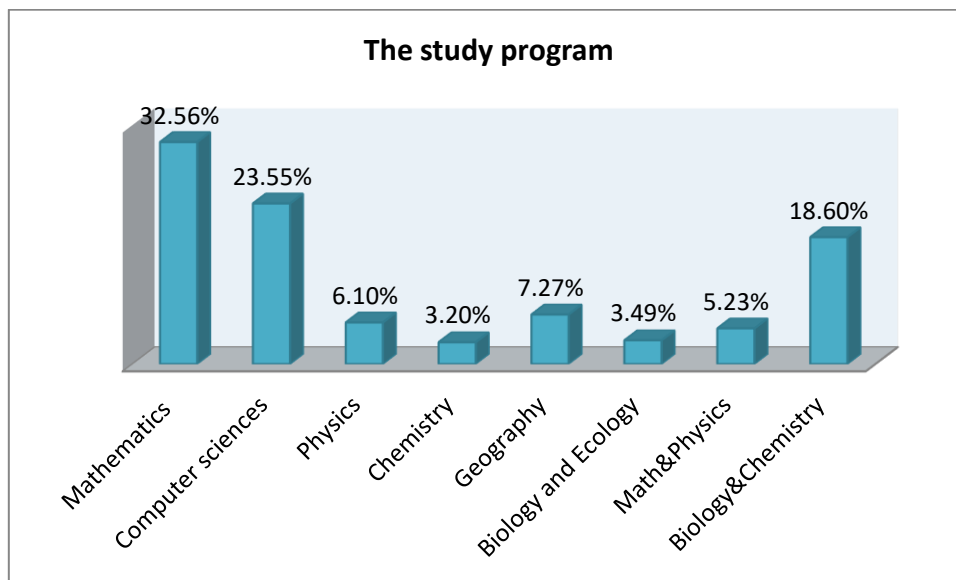
☐ Undergraduate studies   ☐ Master studies   ☐ Doctoral studies

The level of study

j)   The year of your studies is:

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☐ first ☐ second ☐ third ☐ fourth ☐ fifth
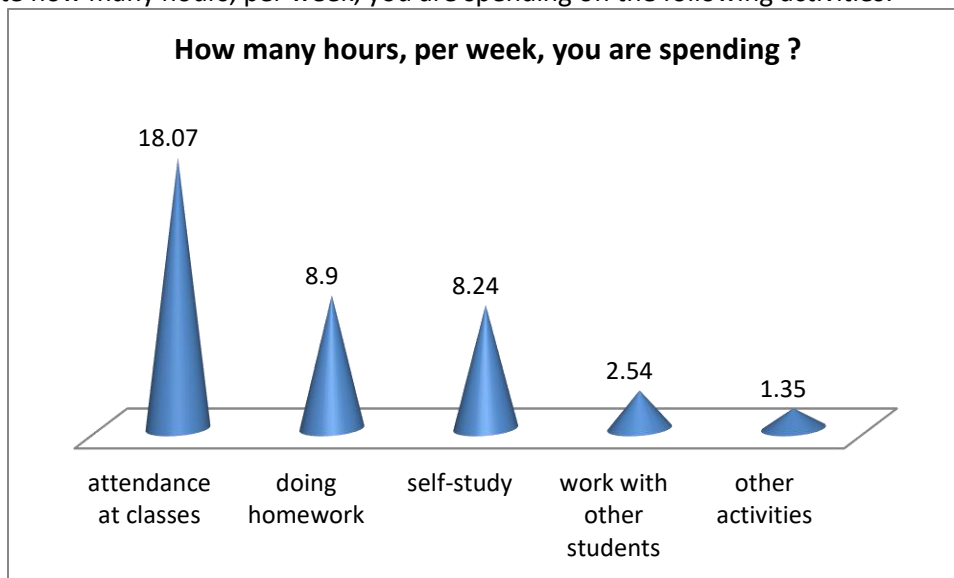
The year of studies

k) The study program you are currently attending is in the field of:

☐ Mathematics ☐ Computer sciences ☐ Physics ☐ Chemistry ☐ Geography ☐ Biology and Ecology
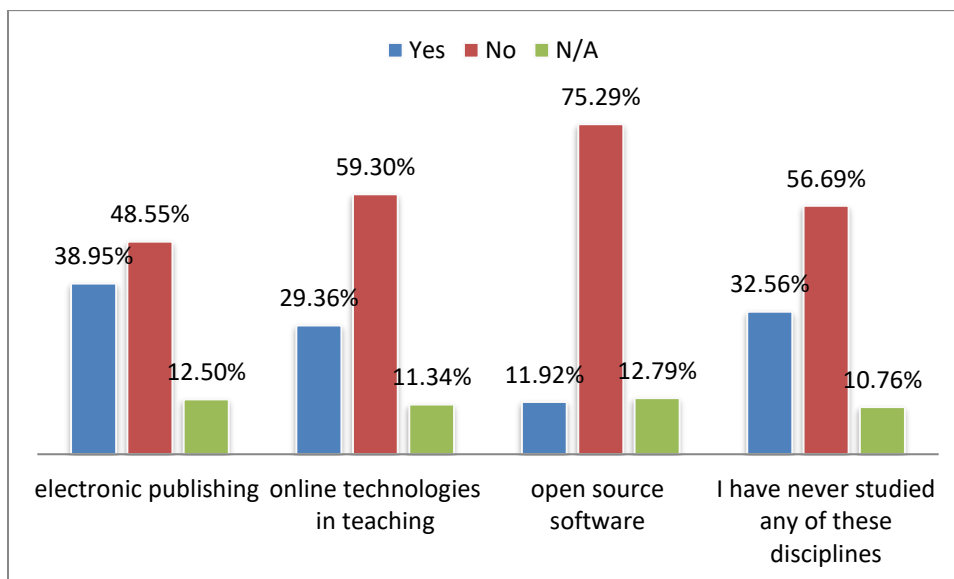
The study program

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11. Please rate how many hours, per week, you are spending on the following activities:

How many hours, per week, you are spending ?

- attendance at classes: 18.07
- doing homework: 8.9
- self-study: 8.24
- work with other students: 2.54
- other activities: 1.35

12. Have you ever attended a course in any of the listed disciplines during your education?

- methodology of e-learning
- methodology of teaching

	methodology of e-learning	methodology of teaching
Yes	18.90%	29.36%
No	79.94%	70.06%
N/A	1.16%	0.58%

13. Please specify the type of disciplines in e-learning methodologywhich you have studied during your education

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14. During your study:

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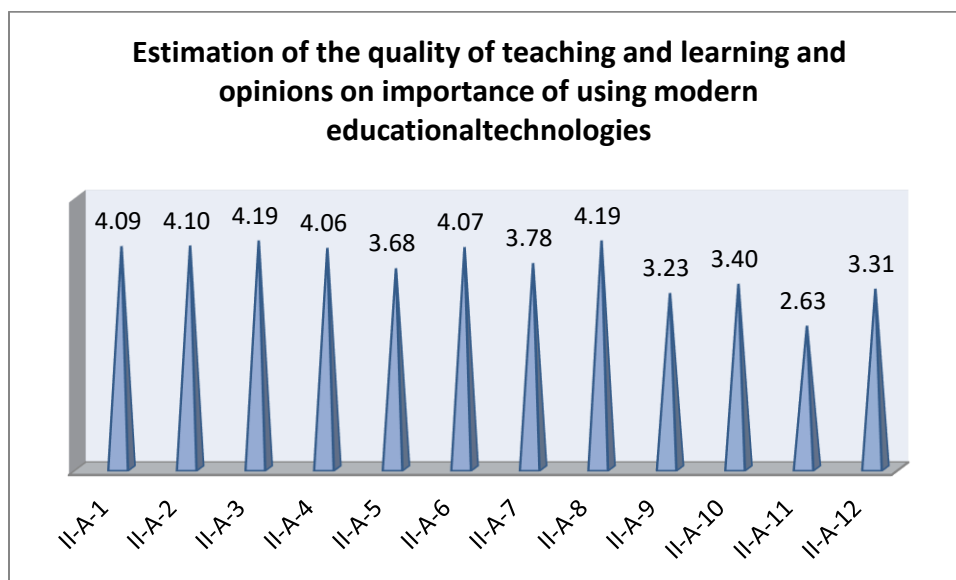Co-funded by the
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PART II: Estimation of the quality of teaching and learning and opinions on importance of using modern educational technologies

C. To what extent do you agree with the following statements?

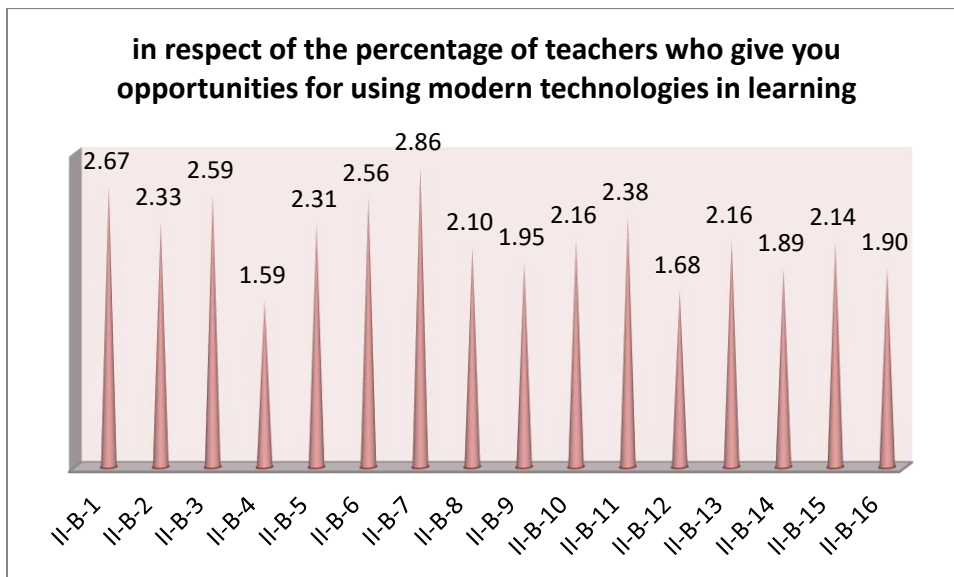| New technologies - electronic materials (presentations), animations/movies, online learning platforms, web-conferences		Not true at all	Generally not true	Equally true and not true	Generally true	Completely true
19.	The use of new technologies in teaching motivates students to get more involved in learning activities.	1	2	3	4	5
20.	The use of modern technologies in teaching help students acquire knowledge more successfully.	1	2	3	4	5
21.	The use of contemporary technology in university teaching allows students to be more creative and imaginative.	1	2	3	4	5
22.	The use of modern technologies in teaching promotes the development of students' interpersonal skills (e.g., ability to relate or work with others).	1	2	3	4	5
23.	The use of modern technology in increases students' confidence to participate actively in the class.	1	2	3	4	5
24.	Using online learning platforms allow students easier and faster access to the relevant information.	1	2	3	4	5
25.	The use of online learning platforms contribute to the realization of individualization of learning.	1	2	3	4	5
26.	The use of new technologies in teaching and learning is essential to prepare students to live and work in the 21st century.	1	2	3	4	5
27.	Lecturers who use modern technology in teaching are more respected by students.	1	2	3	4	5
28.	It is very important that lecturers are open for communication with studentsthrough social networks (Facebook, Twitter, etc.).	1	2	3	4	5

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29.	The use of online learning platforms increases the amount of stress and anxiety among students.	1	2	3	4	5
30.	The use of modern technologies in teachingcontributes to students being less interestedin the contents of lectures.	1	2	3	4	5

Estimation of the quality of teaching and learning and opinions on importance of using modern educationaltechnologies

D. Please answer the following statements, in respect of the percentage of lecturers who give you opportunities for using modern technologies in learning.

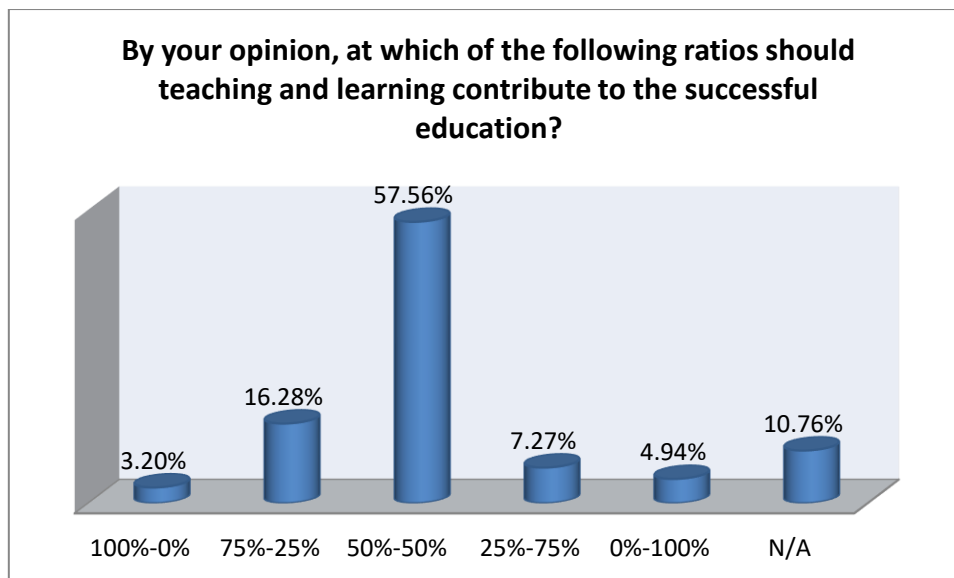|		None of lecturers	Few of them	Some of them	The most of them
30	Students can communicate to lecturers through forums or other forms of online communication.	1	2	3	4
31	Lecturers are open for communication with students through social networks (Facebook, Twitter, etc.).	1	2	3	4
32	Lecturers post the results of tests, give assignments, and share other valuable information with students online.	1	2	3	4
33	Lecturers use online examination system to test students.	1	2	3	4

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34	Lecturers share with students electronic textbooks and use multimedia learning software and platforms (Moodle for example).	1	2	3	4
35	During classes lecturers use electronic materials (presentations), animations/movies, etc. as educational material.	1	2	3	4
36	Lecturers encourage us to use e-books, e-textbooks and other online material as educational material.	1	2	3	4
37	Students are encouraged by the lecturers to use online courses as educational material.	1	2	3	4
38	Lecturers use online learning platforms in classes.	1	2	3	4
39	Lecturers encourage students to work in groups by creating online forums to discuss about certain topic.	1	2	3	4
40	Students are instructed how to use online tools, learning platforms and other internet and electronic sources when completing their assignments.	1	2	3	4
41	Lecturers create online questionnaires for the purpose of facilitating students' self-testing process.	1	2	3	4
42	Students get prompt answers to questions asked through online communication tools.	1	2	3	4
43	Lecturers expect students to use collaborative editing software in communication with them and other students (Google Docs, Wikis, etc.).	1	2	3	4
44	Lecturers make available electronic bases of secondary sources that they recommend for individual or group research tasks.	1	2	3	4
45	During classes, lecturers use web-conferences as educational material.	1	2	3	4

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in respect of the percentage of teachers who give you opportunities for using modern technologies in learning
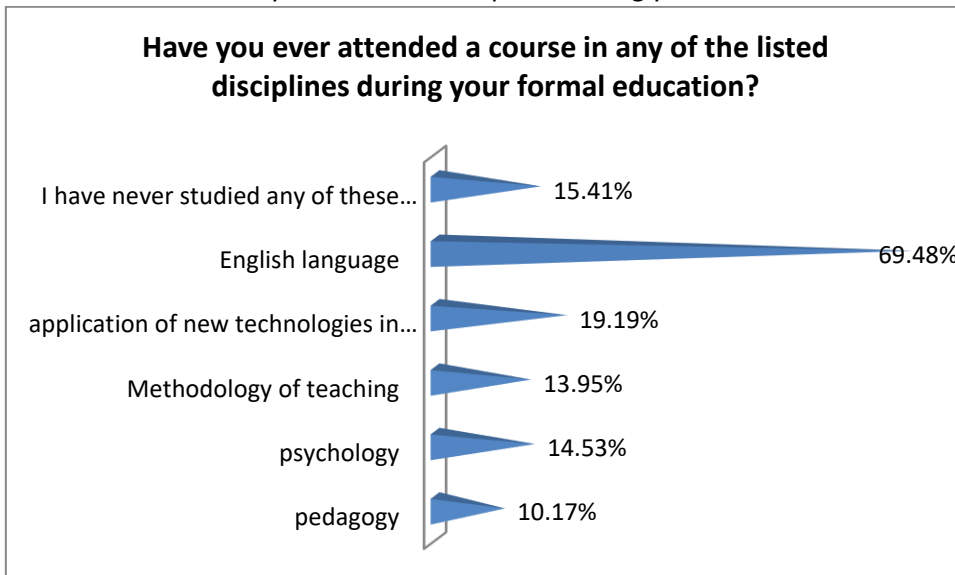

Part III

Based on your opinion, at which of the following ratios should teaching and learning contribute to the successful education?

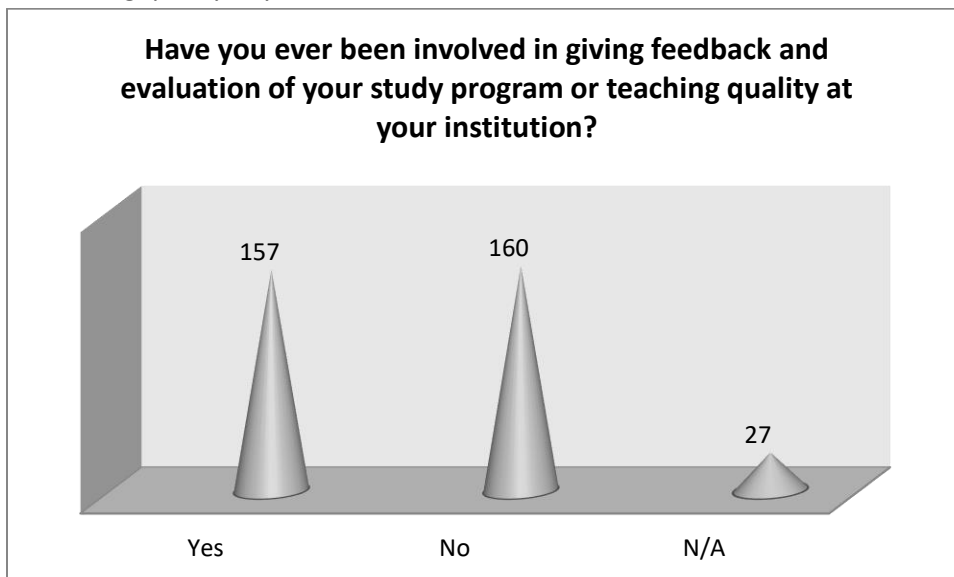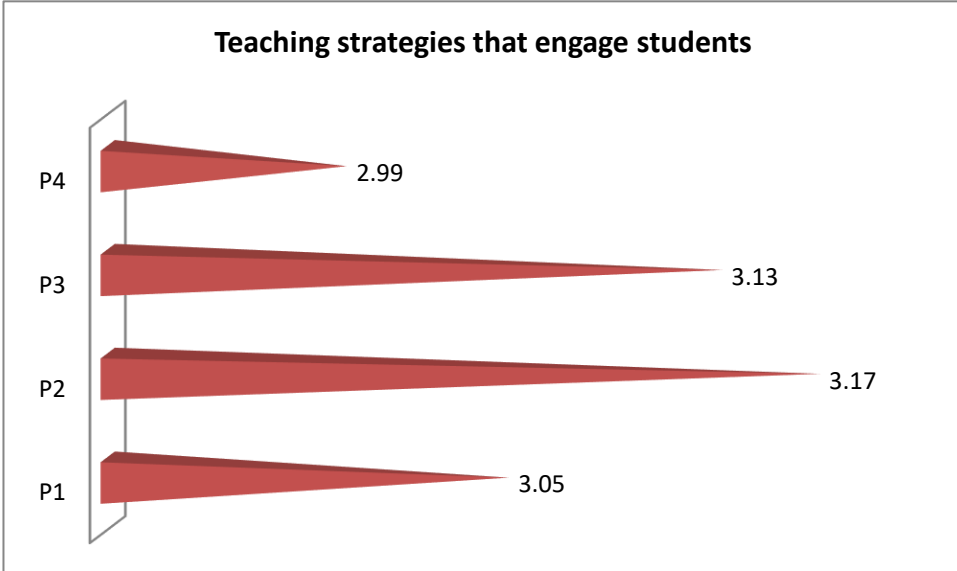a) 100%-0% b) 75%-25% c) 50%-50% d) 25%-75% e) 0%-100%

By your opinion, at which of the following ratios should teaching and learning contribute to the successful education?

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3. Have you ever attended a course in any of the listed disciplines during your formal education?

**Have you ever attended a course in any of the listed
disciplines during your formal education?**

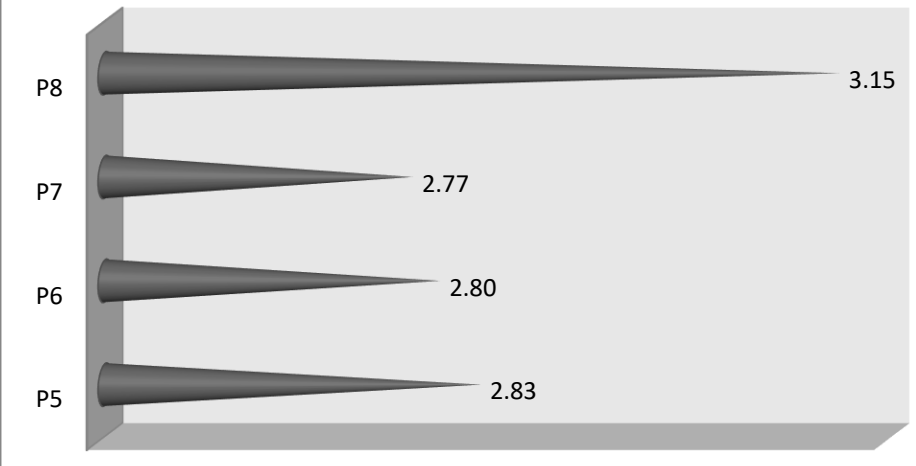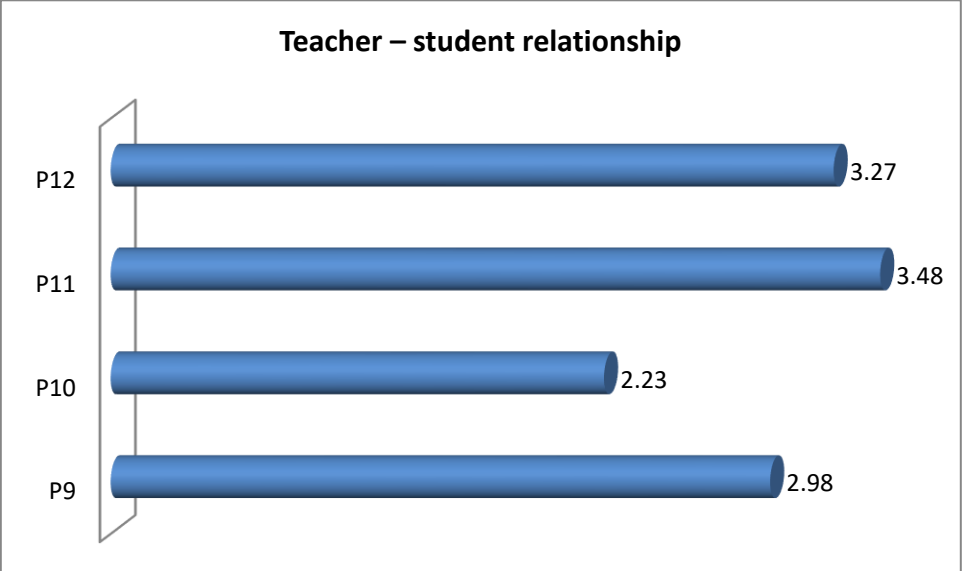| Category	Percentage
I have never studied any of these…	15.41%
English language	69.48%
application of new technologies in…	19.19%
Methodology of teaching	13.95%
psychology	14.53%
pedagogy	10.17%

4. Have you ever been involved in giving feedback and evaluation of your study program or teaching quality at your institution?

**Have you ever been involved in giving feedback and
evaluation of your study program or teaching quality at
your institution?**

| Yes	No	N/A
157	160	27

Please answer the listed statements, in respect of the percentage of the teacher who gave you opportunities for different pedagogical and methodological procedures

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	None of lecturers	Few of them	Some of them	The most of them
Teaching strategies that engage students				

Teaching strategies that engage students

- P4 — 2.99
- P3 — 3.13
- P2 — 3.17
- P1 — 3.05

		None of lecturers	Few of them	Some of them	The most of them
53.	I get feedback from my lecturers on my tests, assignments or works in progress.	1	2	3	4
54.	I get clear information about the way in which the course is going to be evaluated.	1	2	3	4
55.	I get clear instructions from lecturers how to prepare for the next class.	1	2	3	4
56.	Lecturers give us homework assignments, short-term tasks, or some obligatory reading or other form of preparation for the next class.	1	2	3	4
Intellectual engagement and learning impact					

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Intellectual engagement and learning impact

- P8 — 3.15
- P7 — 2.77
- P6 — 2.80
- P5 — 2.83

57.	We were encouraged to produce new ideas and find creative solutions to the problems we studied.	1	2	3	4
58.	In classes we seek for multiple solutions to the problem and compare them.	1	2	3	4
59.	In classes, we usually have discussions over complex problems.	1	2	3	4
60.	Lecturers ask us to explain our ideas.	1	2	3	4

Teacher – student relationship

Teacher – student relationship

- P12 — 3.27
- P11 — 3.48
- P10 — 2.23
- P9 — 2.98

61.	I can communicate to the lecturers openly and freely.	1	2	3	4

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62.	I can communicate to lecturers through social networks (Facebook, Twitter, etc.).	1	2	3	4
63.	Lecturers treat me with respect.	1	2	3	4
64.	Lecturers welcome us with smile and friendly tone.	1	2	3	4

Collaboration

Collaboration

- P16 — 3.02
- P15 — 2.28
- P14 — 2.71
- P13 — 3.05
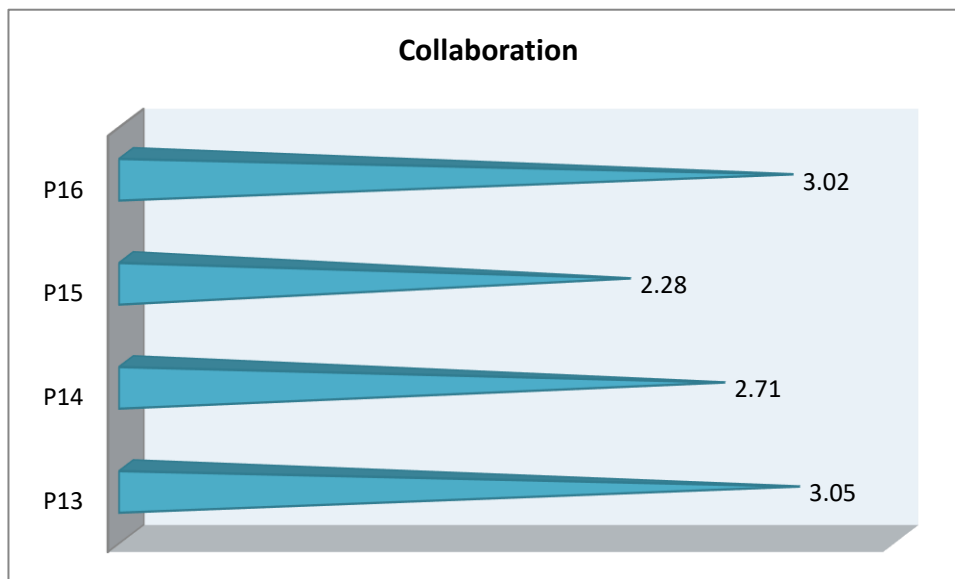
65.	We are often assigned group tasks to perform in class or at home.	1	2	3	4
66.	Students are encouraged to share their knowledge and help other students in classes or while preparing for exams.	1	2	3	4
67.	Lecturers expect us to use collaborative editing software in communication with them and other students (Google Docs, Wikis, etc.).	1	2	3	4
68.	Lecturers expect us to get involved by stating our opinion.	1	2	3	4
	Student-centered learning practices				

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TeComp

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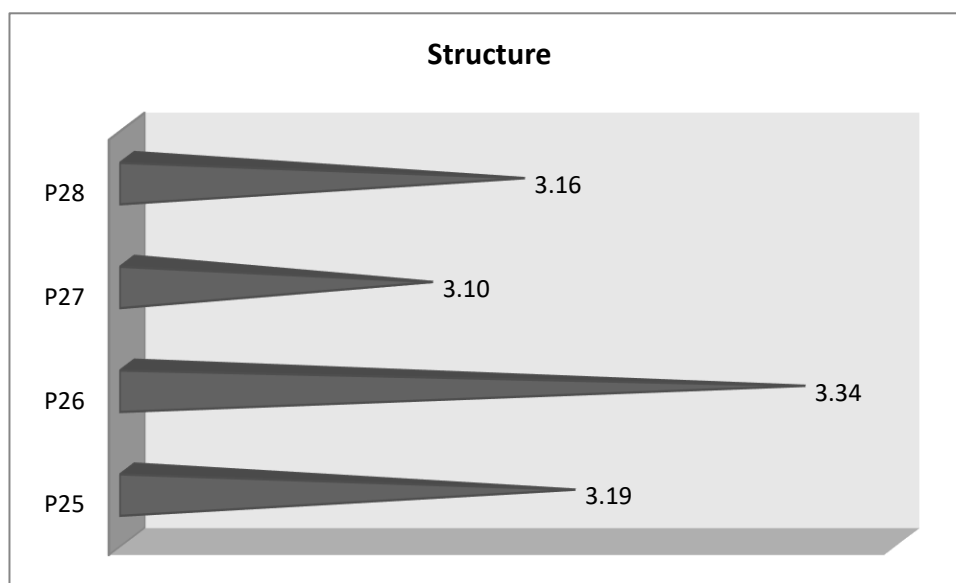## Student-centered learning practices

P20 — 3.15
P19 — 2.93
P18 — 2.70
P17 — 3.00
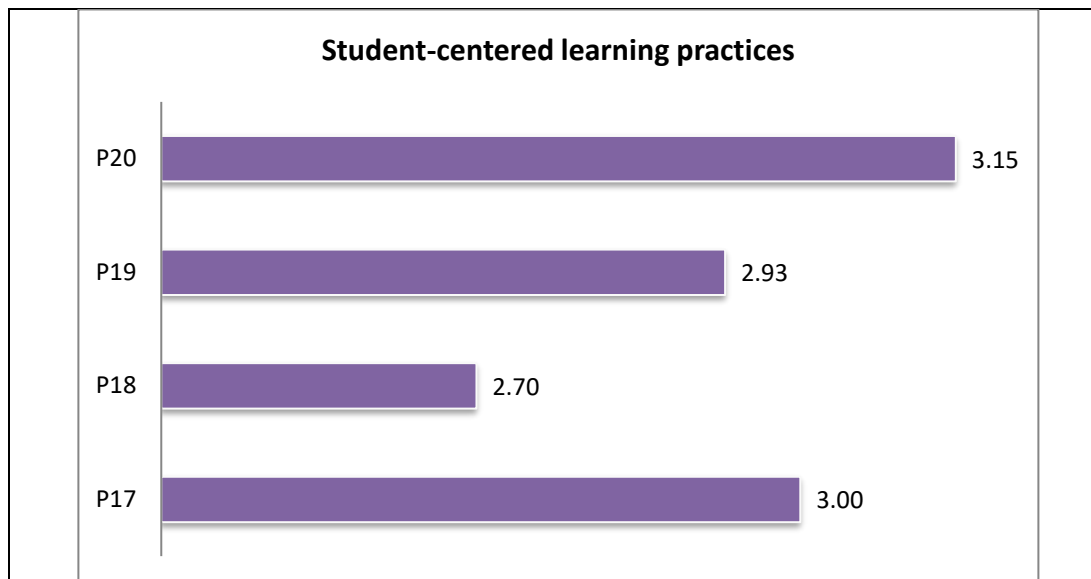
69.	Lecturers show flexibility concerning content or methods of their course in order to fit it to students' needs.	1	2	3	4
70.	I can freely choose the themes of individual assignments in accordance with my wishes and preferences.	1	2	3	4
71.	Lecturers try to connect the contents of their courses with our prior experiences and knowledge.	1	2	3	4
72.	Lecturers show interest in students' opinions.	1	2	3	4

Enthusiasm and teaching style

Enthusiasm and teaching style

P24 — 2.75
P23 — 2.54
P22 — 2.76
P21 — 2.77

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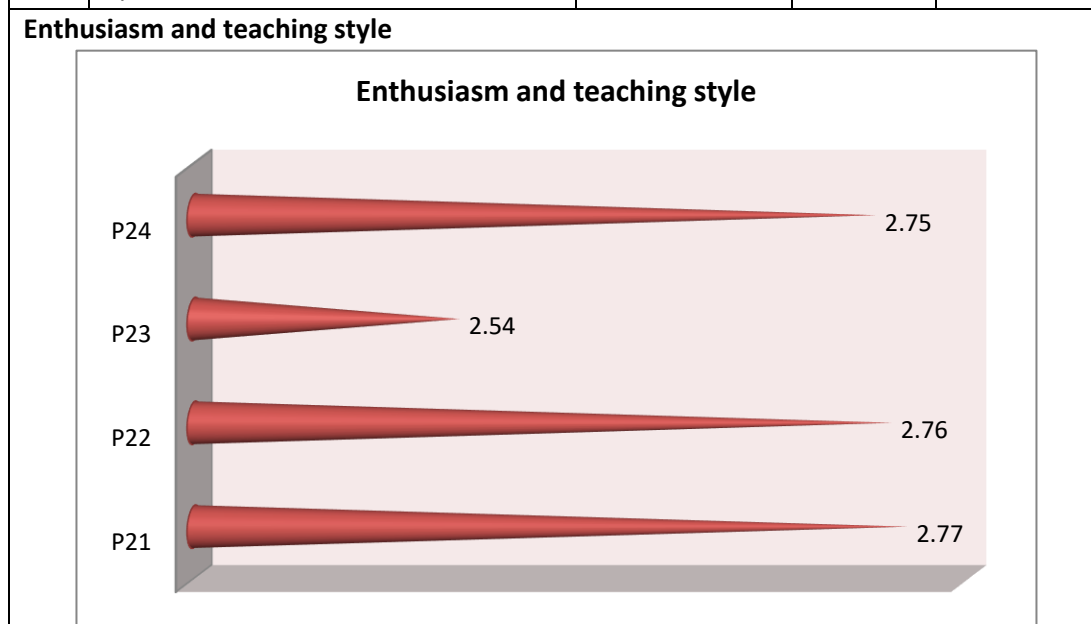
73.	Lecturers keep students interested by changing methods and way of work from class to class.	1	2	3	4
74.	Lecturers use e-books, presentations, video clips, films, etc. in classes.	1	2	3	4
75.	Lecturers use work in pairs, group work, workshops or other techniques that promote interaction among students during classes.	1	2	3	4
76.	Lecturers encourage us to look for the learning resources other than obligatory materials and critically estimate their reliability.	1	2	3	4

Structure

Structure

- P28 — 3.16
- P27 — 3.10
- P26 — 3.34
- P25 — 3.19

25.	During classes lecturers summarize and emphasize important points.	1	2	3	4
26.	Lecturers adjust the timing of the classes and manage the time of the classes well.	1	2	3	4
27.	Learning materials are well structured and organized.	1	2	3	4
28.	Classes are well structured.	1	2	3	4

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