

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

July 2019

Project acronym: Project full title:	TeComp Strengthening Teaching Competencesin Higher Education in Natural and Mathematical Sciences
Project No:	598434-EPP-1-2018-1-RS-EPPKA2-CBHE-JP
Number of grant contracts	2018-2467/001-001
Web address of project	www.tecomp.ni.ac.rs
Funding Scheme:	Erasmus+
Coordinator Institution:	University of NiŠ
Coordinator:	Prof. dr. Jelena IgnjatoviĆ
Project duration:	15.11.2018. – 14.11.2021.
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
Version of the document:	v.01
Status:	Final Draft
Dissemination level:	Internal

Table of Contents

Entry		5
CHAPTER I BASIC INFORMATION OF PARTICIPANTS		7
1.1 Universities of Gjirokastra and Korca, Albania	7	
Chapter II Previous education of lecturers that could influence on their teaching	competences and opinions 11	
2.1 Universities of Gjirokastra and Korca, Albania	11	
CHAPTER III SELF-ESTIMATION OF THE QUALITY OF TEACHING AND THE LECTURERS' KNOWLEDG TEACHING AND LEARNING	GE AND SKILLS IN USING MODERN INFORMATION TECHNOLOGIES IN	14
3.1 Self-estimation of the quality of teaching and opinions on importance of using mode 3.1.1 Universities of Gjirokastra and Korca, Albania 3.2.1 Universities of Gjirokastra and Korca, Albania	ern educational technologies 14	15 17
CHAPTER IV THE USING ONLINE PLATFORMS TECHNOLOGY IN TEACHING		20
4.1 Universities of Gjirokastra and Korca, Albania	20	
CHAPTER V PREVIOUS EDUCATION AND INTERESTS IN TEACHING SKILLS, THE USE OF TEACHING S	TRATEGIES AND PSYCHOLOGY IN TEACHING	24
5.1 Universities of Gjirokastra and Korca, Albania	24	
CHAPTER VI THE USE OF TEACHING STRATEGIES, ENGLISH LANGUAGE AND TECHNOLOGY IN TEA	CHING	29
6.2 Universities of Gjirokastra and Korca, Albania	29	
Appendix		40

Appendix 1 Survey for lecturers	40
Appendix 2 Survey for students	49

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 four Serbian universities (Nis, Belgrade, Novi Sad 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: 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.

Chapter I BASIC INFORMATION OF PARTICIPANTS

1.1 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.

Activity	average number of hours all	average number of hours- young lecturers	average number of hours – experienced lecturers	p-value	signifi cance
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

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

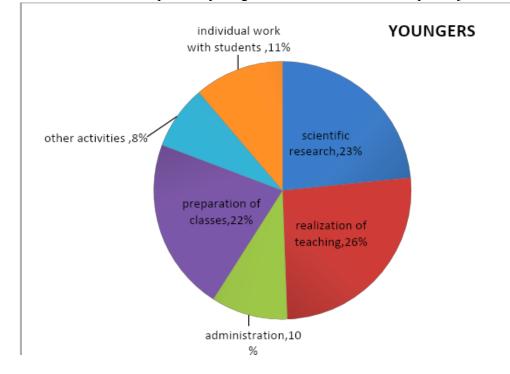
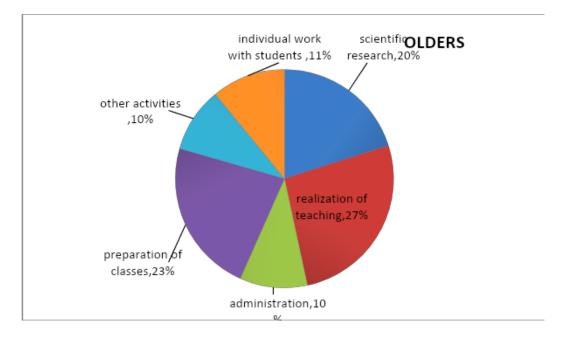


Figure 1.1.1 Percentage distribution in relation to total time spent on young lecturers for the University of Gjirokastra and Korça

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



From Table 1.1.1 and Figures 1.1.1 and 1.1.2 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 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 1.1.3 Distribution by percentage of students according to their fields of study in the universities of Gjirokastra and Korça

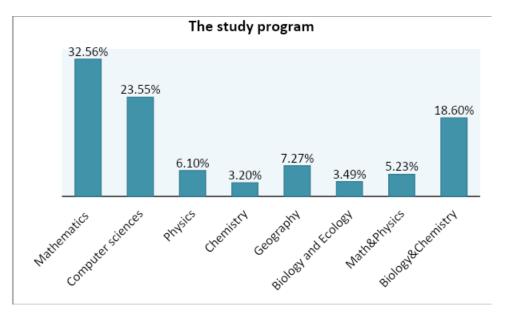
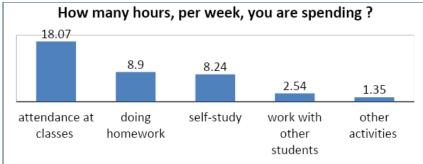


Figure 1.1.4 Distribution of average time spent by students of Gjirokastra and Korça Universities



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.

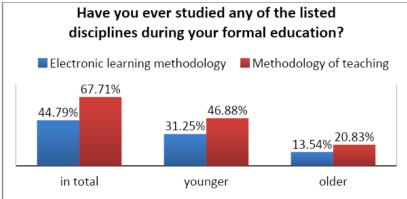
Chapter II PREVIOUS EDUCATION OF LECTURERS THAT COULD INFLUENCE ON THEIR TEACHING COMPETENCES AND OPINIONS

2.1 Universities of Gjirokastra and Korca, Albania

Table 2. 1.1 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 2.1.1 Graphic representation of percentage distribution of Courses in methodology and comparison between young and experienced lecturers at the University of Gjirokastra and Korça



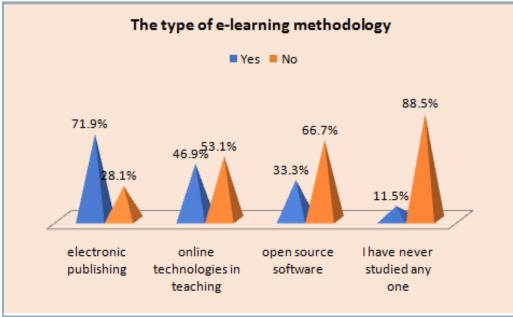
CONCLUSION: In the two Albanian universities, the majority of lecturers (67.71%) have studied traditional teaching methodologies and only 44.79% of them have studied electronic teaching methodologies. Compared to experienced lecturers, it is young lecturers who have studied to a great extent both types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

Table 2.1.2 Percentage distribution of the type of e-learning methodology at the University of Gjirokastra and Korça

pe of e feating methodology at the om terbity of officiation	una morça
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 2.1.2 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 (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 2.1.3 Graphic representation of percentage distribution of Type of e-learning methodology by students of the Universities of Gjirokastra and Korça

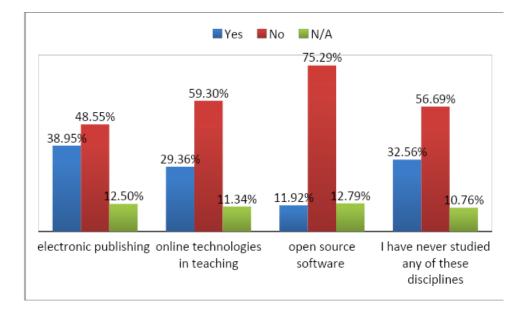
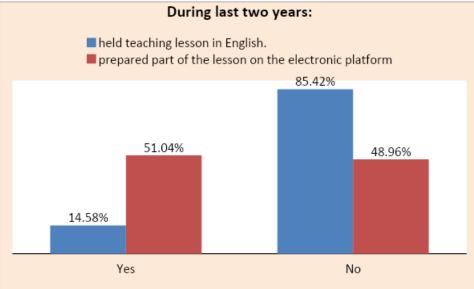


Figure 2.1.4 Graphic representation of percentage distribution of held teaching lesson in English and prepared part of lesson on electronic platform at the University of Gjirokastra and Korça



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).

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%

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 Gjirokastra and Korça

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.

Chapter III Self-estimation of the quality of teaching and the lecturers' knowledge and skills in using modern information technologies in teaching and learning

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)

notatio n	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.

p!	5 (11-5)	You want to improve your teaching skills using information technology, because it will bring you more respect from students.
р	6 (II-6)	You want to improve your teaching skills using information technology, because it will bring you more respect from colleagues

3.1.1 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

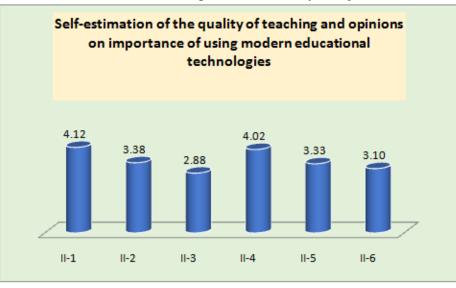
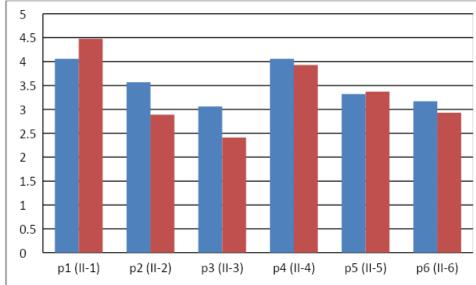


Table 3.1.2.1 Descriptive statistics of attitudes on the use of ICT in teaching and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

				Young lecturers			Experienced lecturers			
		TOTAL			-					
statemen			mod			mod		media		
t	mean	median	е	mean	median	е	mean	n	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

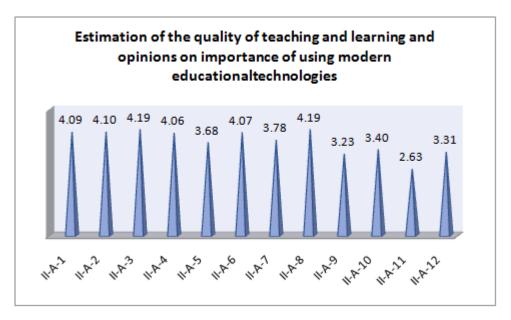


CONCLUSION: All the lecturers agree that the quality of their lectures will be better if they use the contemporary technologies in teaching. The least number of respondents (the average for question p3 is 2.88) consider that student presentations and discussions save time for the teacher. The results 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".

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



3.2.1 Universities of Gjirokastra and Korca, Albania

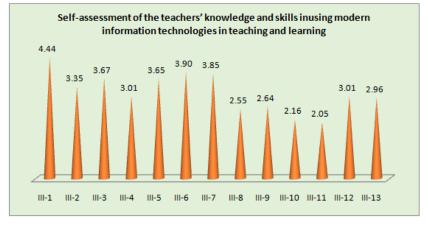


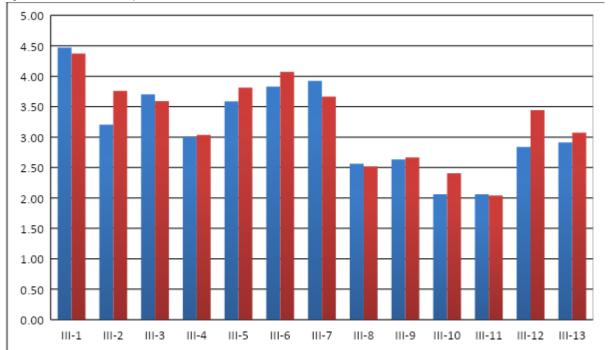
Figure 3.2.2.1 Average distribution of self assessments of ICT competences at the University of Gjirokastra and Korça

Table3.2.1.1 Descriptive statistics of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

	TOTAL			Young lecturers				Experienced lecturers		
	mea				media	mod		media		
statement	n	median	mode	mean	n	е	mean	n	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(111-9)	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 3.1.2.2 Average distribution of self assessments of ICT competences and comparison between young and experienced lecturers at the University of Gjirokastra and Korça



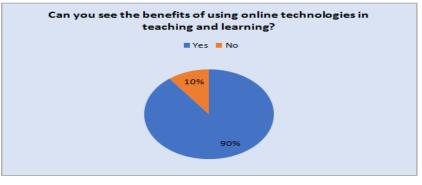
CONCLUSION: As it can be seen, the assessments of young and experienced er lecturers are pretty uniform here, too. The respondents assessed their knowledge and skills related to the Office software package with very high score (4.44) as well as using of electronic materials (presentations) as teaching 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.

Chapter IV THE USING ONLINE PLATFORMS TECHNOLOGY IN TEACHING

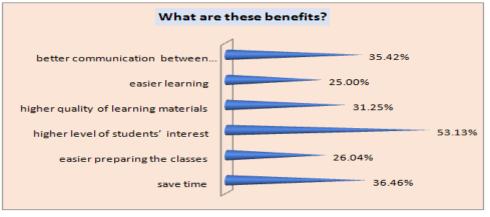
4.1 Universities of Gjirokastra and Korca, Albania

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



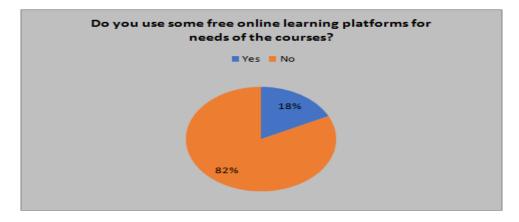
CONCLUSION: Regarding the benefits of using online technologies in teaching and learning, 90% of lecturers responded positively. 10% of lecturers have responded negatively, implying that traditional ways of teaching are still present in Albanian universities.

Figure 4.1.2 Average distribution of benefits of using online technologies in teaching and learning at the University of Gjirokastra and Korça



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 4.1.3 Percentage distribution of using some free online learning platforms for courses at the University of Gjirokastra and Korça

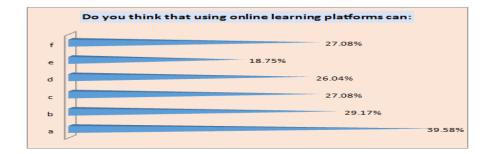


CONCLUSION: Unfortunately, most of the respondents (82.00%) do not use any learning platform. Using of online free learning platforms is needed to be promoted and implemented in teaching because of their importance for modernization of education.

Table 4.1.3 Percentage distribution of s	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%

Figure 4.1.4 Percentage distribution of student benefits of using online technologies in teaching and learning at the University of Gjirokastra and Korça



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

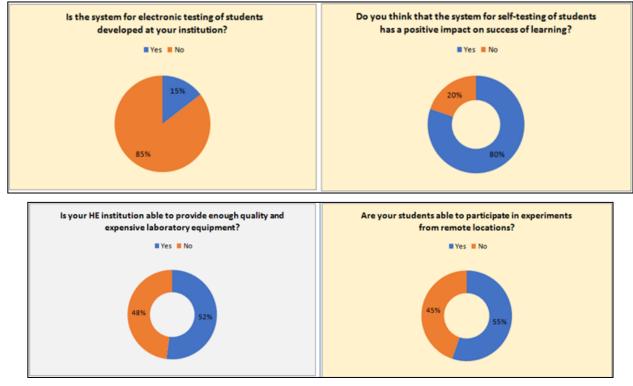
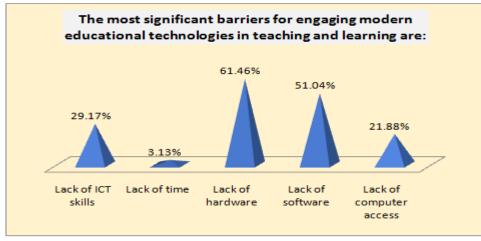


Table 4.1.6 Percentage distribution of the most important barriers to applying modern teaching technologies at the University of Gjirokastra and Korça

	%
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%

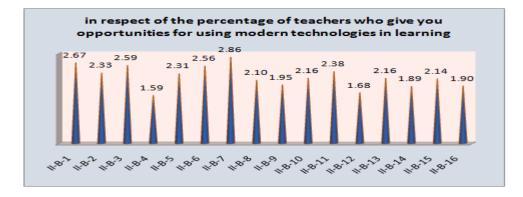
Figure 4.1.7 Percentage distribution of the most important barriers to applying modern teaching technologies at the University of Gjirokastra and Korça



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).

Figure 4.1.7 Distribution of assessment to lecturers who give students access to modern learning technologies (Universities of Gjirokastra and Korca)



Chapter V Previous education and interests in teaching skills, the use of teaching strategies and psychology in teaching

5.1 Universities of Gjirokastra and Korca, Albania

Figure 5.1.1 proportionally share the ratio between teaching and learning to make education more successful for the lecturers of Universities of Gjirokastra and Korça

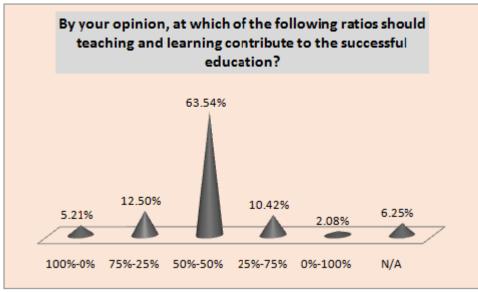
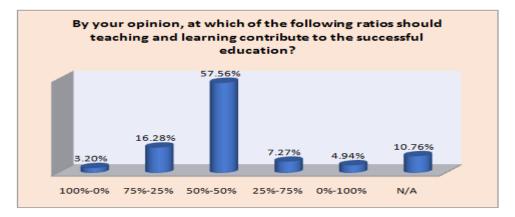
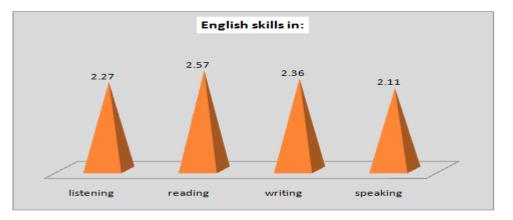


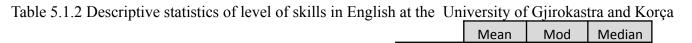
Figure 5.1.2 proportionally share the ratio between teaching and learning to make education more successful for students of Universities of Gjirokastra and Korça



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 5.1.3 Distribution of level of skills in English at the University of Gjirokastra and Korça





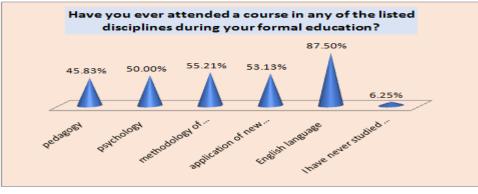
Listenin g	2.27	2	2
reading	2.57	3	3
writing	2.36	2	2
talk	2.11	2	2

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

Table 5.1.3 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%

Figure 5.1.4 Graphic representation of the Percentages of some of the disciplines followed during formal education at the University of Gjirokastra and Korça

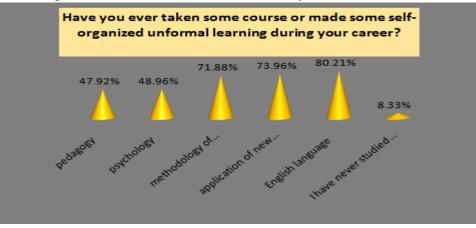


CONCLUSION: For the lecturers of the universities of Gjirokastra and Korca it is noted that 87.5% of them have attended English language courses, over 50% of them have attended courses in teaching methodologies, psychology and application of new teaching technologies. Less than 50% of them have attended courses in pedagogy, while 6.25% have not attended any of the courses listed in the questionnaire.

Table 5.1.5 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 5.1.6 Graphic representation of the Percentages of some of the courses delivered by the lecturers of the University of Gjirokastra and Korca



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 5.1.7 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

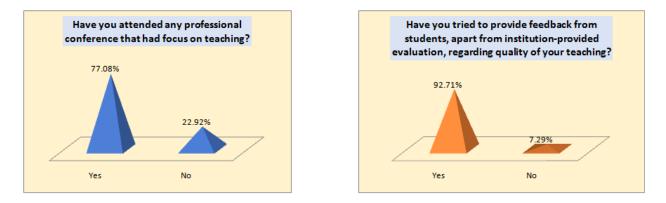
I totally agree	47.92%
I partially agree	25.00%
I do not agree	27.08%

Figure 5.1.8 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 5.1.9 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.

Table 5.1.10 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					
Possibility of easier preparation of classes					
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 5.1.11 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.

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

6.2 Universities of Gjirokastra and Korca, Albania



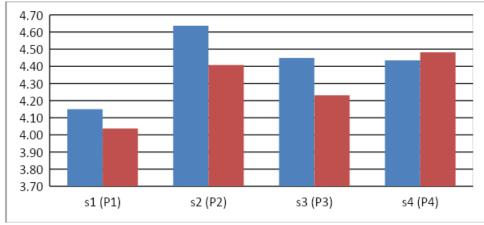
Figure 6.1.1 Average rating in implementation of teaching strategies involving students for lecturers of the Universities of Gjirokastra and Korca

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

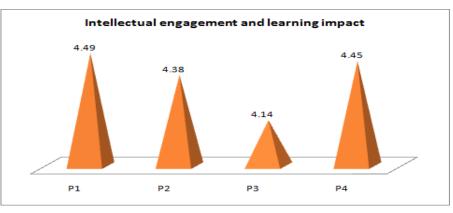
		TOTAL				YOUNG			EXPERIENCED		
statem	ent	mean	median	mod	mean	median	mod	mean	median	mod	
s1 (P	1)	4.12	4	4	4.15	4	4	4.04	4	4	
s2 (P	2)	4.57	5	5	4.64	5	5	4.41	5	5	
s3 (P	3)	4.39	5	5	4.45	5	5	4.23	4.5	5	
s4 (P	4)	4.45	5	5	4.43	5	5	4.48	5	5	

Figure 6.1.2 Comparison of averages between young and experienced lecturers for factors of teaching strategies that include students, Universities of Gjirokastra and Korca



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 6.1.3 Average rating in implementation of intellectual engagement and impact on learning for lecturers of the Universities of Gjirokastra and Korca

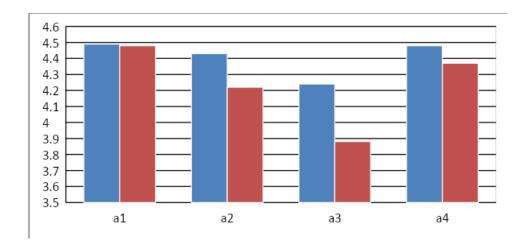


CONCLUSION: Concerning intellectual engagement and impact on learning, the average perception of lecturers in the universities of Gjirokastra and Korca is among the values representing "Generally true" and "Totally true". They are almost completely confident of motivate and encourage students to develop 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).

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 Gjirokastra and Korça	

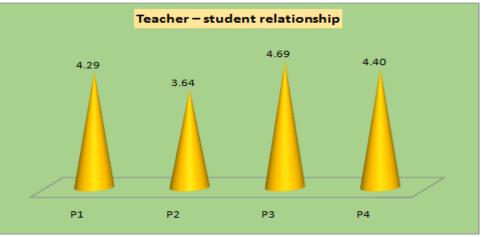
	TOTAL			YOUNG			EXPERIENCED		
statements	mean	median	mod	mean	median	mod	mean	median	mod
al	4.49	5	5	4.49	5	5	4.48	4	4
a2	4.38	5	5	4.43	5	5	4.22	4	4
a3	4.14	4	5	4.24	4	5	3.88	4	5
a4	4.45	5	5	4.48	5	5	4.37	5	5

Figure 6.1.4 Comparison of averages between young and experienced lecturers for factors of intellectual engagement and impact on learning, Universities of Gjirokastra and Korca



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.

Figure 6.1.5 Average assessment of the factors that determine the teacher-student relationship according to the lecturers' perceptions of the Universities of Gjirokastra and Korça

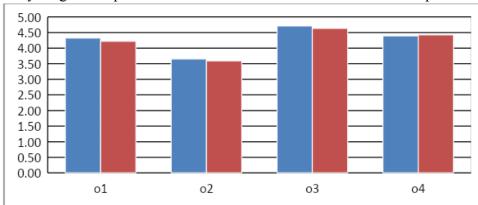


CONCLUSION: As for the factors that determine teacher-student relationships, it is noted that only factor o2 is below the "Generally true" level of perception (3.64). This means that teacher-student relationships are not helped by the different forms of electronic communication, but they are almost certain (4.69) that they treat their students with respect.

Table 6.1.3 Descriptive distribution of teacher-student relationship factors and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

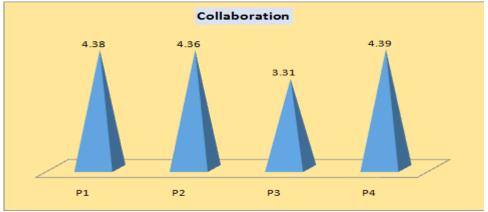
	TOTAL			YOUNGER			EXPERIENCED ER			
statements	mean	median	mod	mean	median	mod	mean	median	mod	
o1	4.29	4	5	4.32	5	5	4.22	4	4	
o2	3.64	4	5	3.65	4	5	3.59	4	5	
о3	4.69	5	5	4.71	5	5	4.63	5	5	
04	4.40	5	5	4.39	5	5	4.42	4.5	5	

Figure 6.1.6 Comparison of averages between young and experienced lecturers of teacher-student relationship factors, Universities of Gjirokastra and Korca



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

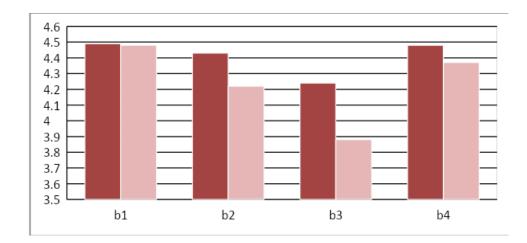


CONCLUSION: Results from teacher responses of Gjirokastra and Korça universities lecturers noted that with the exception of factor b3, the other three factors are at almost maximum levels of teacher perception (approximately 4.4). Factor b3, which corresponds to the demand for using software in communicating with students, is close to the average level of teacher perception (3.31). This indicates that lecturers generally do not use software to communicate with their students

Table 6.1.4 Descriptive distribution of cooperation's factors and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

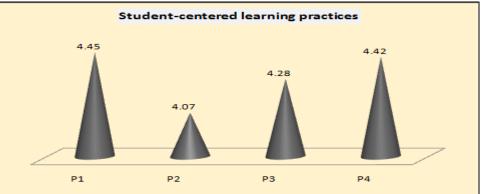
				Young lecturers			Experienced lecturers		
	TOTAL								
statements	mean	median	mod	mean	median	mod	mean	median	mod
b1	4.38	4.5	5	4.41	5	5	4.30	4	4
b2	4.36	5	5	4.36	5	5	4.37	5	5
b3	3.31	3	3	3.44	3	3	2.96	3	3
b4	4.39	4	5	4.37	4	5	4.44	5	5

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



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 6.1.9 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

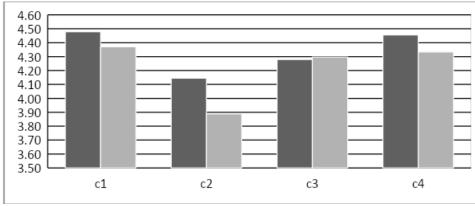


CONCLUSION: Lecturers estimate that they are oriented to student-centered teaching and learning. They are very interested in students' opinion and take care of students' wishes and priorities to improve teaching process (the average for all claims is greater than 4). Students assessments of truthfulness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

Table 6.1.5 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 Gjirokastra and Korça

		TOTAL		Young lect	urers		Experien	ced lecturers	
statements	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

Figure 6.1.10 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



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.

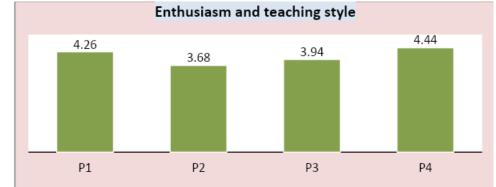


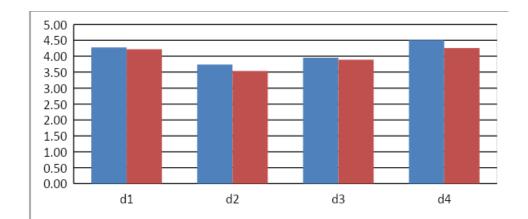
Figure 6.1.11 Average assessment of the factors that determine the level of enthusiasm and style of teaching according to the lecturers' perceptions of the Universities of Gjirokastra and Korça

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 6.1.6 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 Gjirokastra and Korça

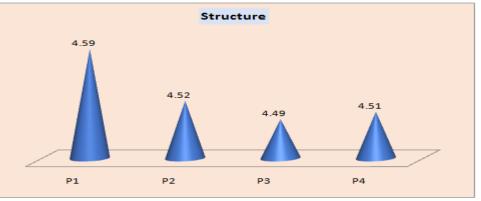
	TOTAL			Young lect	curers		Experienced lecturers			
statements	mean	median	mod	mean	median	mod	mean	median	mod	
d1	4.26	4	4	4.28	4	4	4.22	4	4	
d2	3.68	4	4	3.74	4	4	3.54	4	4	
d3	3.94	4	4	3.96	4	4	3.89	4	4	
d4	4.44	5	5	4.51	5	5	4.26	4	4	

Figure 6.1.12 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



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.

Figure 6.1.13 Average assessment of the factors that determine the level of class structure according to the lecturers' perceptions of the Universities of Gjirokastra and Korça

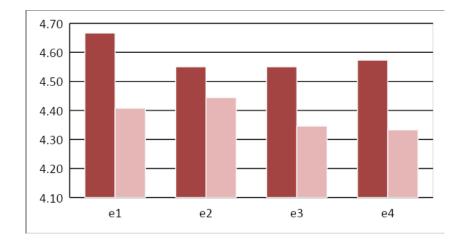


CONCLUSION: With respect to the factors chosen by observers to determine the level of class structure, it is noted that average values of perception tend towards the maximum possible of this perception, with a difference between them that is no more than 0.1 of the selected unit.

Table 6.1.7 Descriptive distribution of the factors that determine the level of class structure and comparison between young and experienced lecturers at the University of Gjirokastra and Korça

				Υοι	Young lecturers Experienced lect			ienced lectur	ers
		TOTAL							
statements	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

Figure 6.1.14 Comparison of averages between young and experienced lecturers of the factors that determine the level of class structure, Universities of Gjirokastra and Korca



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

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	Physics	Chemistry	Geography	Biology and
	sciences				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

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.	€ YES	€NO
If YES, indicate where and when		
You have prepared at least part of the lesson on the electronic platform.	€ YES	€NO
If YES, indicate on which platform:		

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	Generally	Equally	Generally	Completely
		true	not true	true and	true	true
		at all		not true		
1.	Using contemporary technology in	1	2	3	4	5
	university teaching is very important for					
	the quality of classes.					
2.	Group work, multimedia presentations and	1	2	3	4	5
	modern software opportunities waste					
	valuable teaching time.					
3.	Students' presentations and discussions	1	2	3	4	5
	waste valuable teaching time.					
4.	I want to improve my teaching skills in the	1	2	3	4	5
	use of information technologies because it					
	will help me prepare classes more easily.					
5.	I want to improve my teaching skills in the	1	2	3	4	5
	use of educational technologies because it					
	will bring me more respect among					
	students.					
6.	I want to improve my teaching skills in the	1	2	3	4	5
	use of educational technologies because it					
	will bring me more respect among					
	colleagues.					

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	1	2	3	4	5
	conferencing software:					
4.	The level of my knowledge and skills in using	1	2	3	4	5
	Learning Management System (LMS) software:					
5.	The level of my knowledge and skills in using online	1	2	3	4	5
	learning platforms:					
6.	I use electronic materials (presentations) as	1	2	3	4	5
	educational material.					
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	1	2	3	4	5
	communication in teaching and learning.					
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	1	2	3	4	5
	through social networks (Facebook, Twitter, etc.).					

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

3.	I give students clear instructions how to	1	2	3	4		5	
	prepare for the next class.							
4.	I give students homework assignments,	1	2	3	4		5	
	short-term tasks, or some obligatory reading							
	or other form of class preparation.							
Intell	ectual engagement and learning impact							
5.	I encourage students to produce new ideas	1	2	3		4		5
	and find creative solutions to the problems							
	we study.							
6.	I stimulate students to find multiple solutions	1	2	3	1	4		5
	to the problem and compare them.							
7.	I usually initiate discussions in class over	1	2	3	1	4		5
	complex problems.							
8.	I ask students to explain their ideas.	1	2	3		4		5
Teach	ner – student relationship		-	•				
9.	Students communicate with me openly and	1	2	3		4		5
	freely.							
10.	I am open for different forms of electronic	1	2	3		4		5
	communication and social networking with							
	students (Facebook, Twitter, etc.).							
11.	I treat students with respect.	1	2	3		4		5
12.	I welcome students with a smile and warm	1	2	3		4		5
	and friendly tone.							
Colla	boration			•		•		
13.	I give students group tasks to perform during	1	2	3		4		5
	class or at home.							
14.	I encourage students to help each other	1	2	3		4		5
	understand content and communicate during							
	classes and while preparing for exams.							
15.	I use collaborative editing software with my	1	2	3		4		5
	students (Google Docs, Wikis, etc.).							

Lask students to involve in discussions and	1	2	3	1	5
		2	5		5
					-
		2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
siasm and teaching style					
I change teaching methods in order to keep	1	2	3	4	5
students interested.					
I use e-books, presentations, video clips,	1	2	3	4	5
films, etc. in my classes.					
I use work in pairs, group work, workshops or	1	2	3	4	5
other techniques that promote interaction					
during classes.					
I encourage students to look for the learning	1	2	3	4	5
resources apart from obligatory materials					
and critically estimate their reliability.					
ure	-	-	-		
During classes I summarize and emphasize	1	2	3	4	5
important points.					
During classes I am aware of time and keep it	1	2	3	4	5
well adjusted.					
I structure and organize learning material.	1	2	3	4	5
I take care that all my classes are well	1	2	3	4	5
structured.					
	 I change teaching methods in order to keep students interested. I use e-books, presentations, video clips, films, etc. in my classes. I use work in pairs, group work, workshops or other techniques that promote interaction during classes. I encourage students to look for the learning resources apart from obligatory materials and critically estimate their reliability. ure During classes I summarize and emphasize important points. During classes I am aware of time and keep it well adjusted. I structure and organize learning material. I take care that all my classes are well 	introduce their opinion.ent-centered learning practicesI am ready to make slight changes in content or methods of my course in order to fit it to students' needs.I respect student's preferences and wishes when giving individual assignments.I connect the idea from my courses to students' prior experiences and knowledge.I am interested in students' opinion.I change teaching methods in order to keep students interested.I use e-books, presentations, video clips, films, etc. in my classes.I encourage students to look for the learning resources apart from obligatory materials and critically estimate their reliability.During classes I summarize and emphasize important points.During classes I am aware of time and keep it well adjusted.I take care that all my classes are well1 take care that all my classes are well	introduce their opinion.ent-centered learning practicesI am ready to make slight changes in content or methods of my course in order to fit it to students' needs.12I respect student's preferences and wishes when giving individual assignments.12I connect the idea from my courses to students' prior experiences and knowledge.12I am interested in students' opinion.12stage teaching methods in order to keep students interested.12I use e-books, presentations, video clips, films, etc. in my classes.12I encourage students to look for the learning resources apart from obligatory materials and critically estimate their reliability.12During classes I summarize and emphasize important points.12During classes I am aware of time and keep it well adjusted.12I take care that all my classes are well12	introduce their opinion.Image: Second Se	introduce their opinion.Image: constraint of the second secon

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:

		Undergrad	uate studies	Master s	tudies	Doctoral	studies
f)	The year of your studies is:						
	fi	rst	second	third	fourth	fifth	
g)	The study program you are cu	rrently attending Mathematics	is in the field Computer sciences	of: Physics C	hemistry 🗌 Ge	eography	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.
- 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?	€ YES	€NO
If YES, indicate on which platform:		

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		Not true	Generally	Equally	Generally	Completely
(prese	ntations), animations/movies, online	at all	not true	true and	true	true
learnir	ng platforms, web-conferences			not true		
7.	The use of new technologies in teaching	1	2	3	4	5
	motivates students to get more involved					
	in learning activities.					

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 anxiety among students.	1	2	3	4	5

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

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

		None of	Few of	Some of	The most
		lecturers	them	them	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	1	2	3	4
	classes.				
23	Lecturers encourage students to work in	1	2	3	4
	groups by creating online forums to				
	discuss about certain topic.				
24	Students are instructed how to use online	1	2	3	4
	tools, learning platforms and other				
	internet and electronic sources when				
	completing their assignments.				
25	Lecturers create online questionnaires for	1	2	3	4
	the purpose of facilitating students'				
	self-testing process.				
26	Students get prompt answers to	1	2	3	4
	questions asked through online				
	communication tools.				
27	Lecturers expect students to use	1	2	3	4
	collaborative editing software in				
	communication with them and other				
	students (Google Docs, Wikis, etc.).				
28	Lecturers make available electronic bases	1	2	3	4
	of secondary sources that they				
	recommend for individual or group				
	research tasks.				
29	During classes, lecturers use	1	2	3	4
	web-conferences as educational material.				

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

- 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	Few of	Some	The
		lecturers	them	of	most
				them	of
					them
Teach	ing strategies that engage students				
29.	I get feedback from my lecturers on my tests,	1	2	3	4
	assignments or works in progress.				
30.	I get clear information about the way in which the	1	2	3	4
	course is going to be evaluated.				
31.	I get clear instructions from lecturers how to	1	2	3	4
	prepare for the next class.				
32.	Lecturers give us homework assignments,	1	2	3	4
	short-term tasks, or some obligatory reading or				
	other form of preparation for the next class.				
Intell	ectual engagement and learning impact				
33.	We were encouraged to produce new ideas and	1	2	3	4
	find creative solutions to the problems we studied.				

24					
34.	In classes we seek for multiple solutions to the	1	2	3	4
	problem and compare them.				
35.	In classes, we usually have discussions over	1	2	3	4
	complex problems.				
36.	Lecturers ask us to explain our ideas.	1	2	3	4
Teach	ner – student relationship				
37.	I can communicate to the lecturers openly and	1	2	3	4
	freely.				
38.	I can communicate to lecturers through social	1	2	3	4
	networks (Facebook, Twitter, etc.).				
39.	Lecturers treat me with respect.	1	2	3	4
40.	Lecturers welcome us with smile and friendly tone.	1	2	3	4
Colla	boration			I	
41.	We are often assigned group tasks to perform in	1	2	3	4
	class or at home.				
42.	Students are encouraged to share their knowledge	1	2	3	4
	and help other students in classes or while				
	preparing for exams.				
43.	Lecturers expect us to use collaborative editing	1	2	3	4
	software in communication with them and other				
	students (Google Docs, Wikis, etc.).				
44.	Lecturers expect us to get involved by stating our	1	2	3	4
	opinion.				
Stud	lent-centered learning practices	-		•	
45.	Lecturers show flexibility concerning content or	1	2	3	4
	methods of their course in order to fit it to				
	students' needs.				
46.	I can freely choose the themes of individual	1	2	3	4
	assignments in accordance with my wishes and				
	preferences.				
47.	Lecturers try to connect the contents of their	1	2	3	4
	courses with our prior experiences and knowledge.				

48.	Lecturers show interest in students' opinions.	1	2	3	4
Enthu	usiasm and teaching style				
49.	Lecturers keep students interested by changing	1	2	3	4
	methods and way of work from class to class.				
50.	Lecturers use e-books, presentations, video clips,	1	2	3	4
	films, etc. in classes.				
51.	Lecturers use work in pairs, group work, workshops	1	2	3	4
	or other techniques that promote interaction				
	among students during classes.				
52.	Lecturers encourage us to look for the learning	1	2	3	4
	resources other than obligatory materials and				
	critically estimate their reliability.				
Struc	ture				
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

Appendix 3. REPORT ON STUDENTS' SURVEY

Structure of the sample

The questionnaire consisted of 79 questions. Respondents who answered less than 35 questions (in total 5 respondents) were excluded from the sample. The total number of questionnaires that were considered was 344. The survey was conducted electronically in April and May 2019.

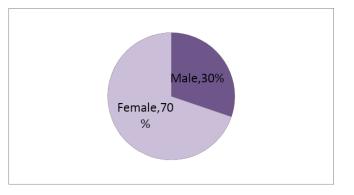
Note: The average number of responses per questionnaire is 76.4. Due to the small number of missing data, no filling was done, but the analysis was based directly on the answers given by students.

The questionnaire was filled out by students of two state universities: 121 students (making 34.67% of the sample) from the University of Gjirokastra, 228 students (65.33% of the sample) from the University of Korca.

Note: The results in the reports are presented collectively for both universities and the abbreviation (ALB) is used for these results. The cases when the student did not prefer to answer the respective question are marked with N/R (No response) or N/A (No answer).

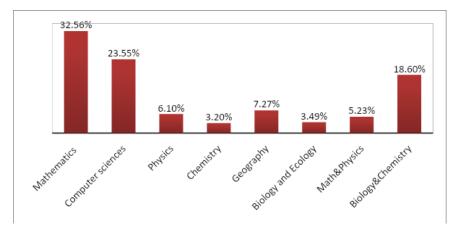
The structure of the sample is based on gender, area of study, level of studies and year of studies is given in Tables 1-4. The charts are given for the whole sample, i.e., for ALB.

Gender	ALB	ALB%		
		30.23		
Male	104	%		
		69.77		
Female	240	%		
Total	344	100%		
Table 1: Gender				



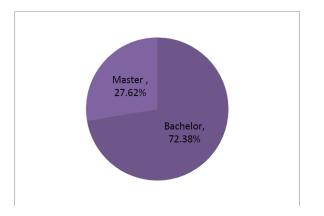
	AL	
Area	В	ALB%
Biology&Chemistr		18.60
у	64	%
Biology&Ecology	12	3.49%
Physics	21	6.10%
Geography	25	7.27%
Chemistry	11	3.20%
		32.56
Mathematics	112	%
Math&Physics	18	5.23%
		23.55
Computer science	81	%

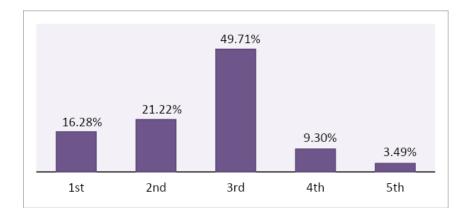
Table 2: Areas of studies



	AL	
Level	В	ALB%
		72.38
Bachelor	249	%
		27.62
Master	95	%
PhD	0	0.00%

Table 3: Level of studies





	AL	
Year	B	ALB%
		16.28
1st	56	%
		21.22
2nd	73	%
		49.71
3rd	171	%
4th	32	9.30%
5th	12	3.49%
Table 4: Year	of stud	ies

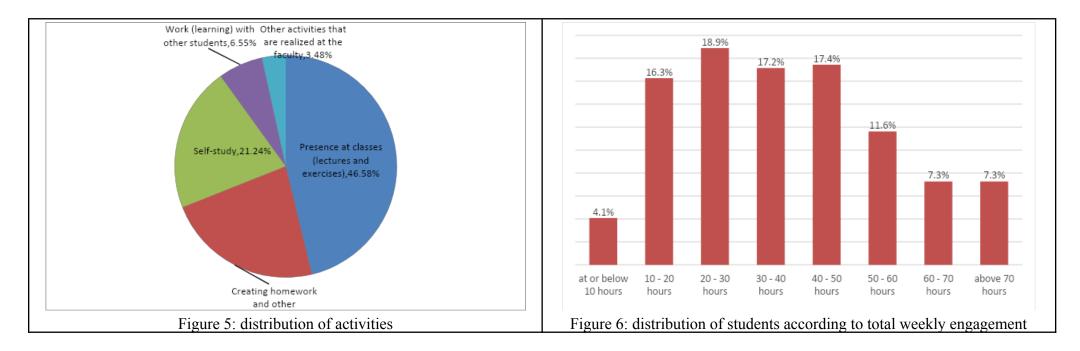
Evaluation of weekly engagement

	ALB		
Activity	average hours	SD ¹	
Presence at classes (lectures and exercises)	18.07	7.90	
Creating homework and other activities	8.90	7.10	

Self-study	8.24	6.71
Work (learning) with other students	2.54	3.27
Other activities that are realized at the		
faculty	1.35	2.26
Total	38.79	20.28

¹ SD – standard deviation

Table 5: distribution of weekly engagement

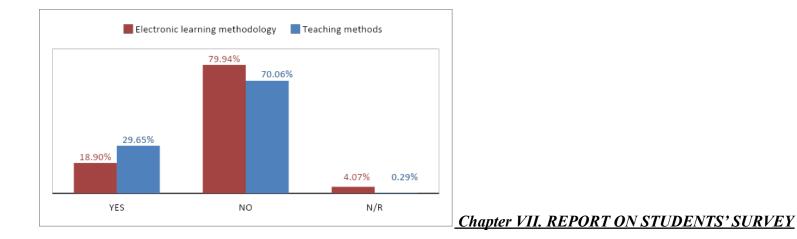


CONCLUSION: Looking at the total engagement of students, we notice that they have estimated their load at about 38 hours, which is slightly less than the anticipated load of 40 hours. However, a standard deviation of 20.28 hours indicates that student self-assessment is in a wide range (Figure 6). About half of students (53.5%) estimated their weekly workload in the very wide range of 20 to 50 hours. The two activities taking most of the time are Presence at classes (lectures and exercises) and Self-study (Table 5 and Figure 5).

Courses in methodology

course	YES	NO	N/R	YES	NO	N/R
Electronic learning methodology	65	275	14	18.90 %	79.94 %	4.07%
Teaching methods	102	241	1	29.65 %	70.06 %	0.29%

Table 6: Absolute frequency of students who listened (or not) two courses in the methodology



Structure of the sample

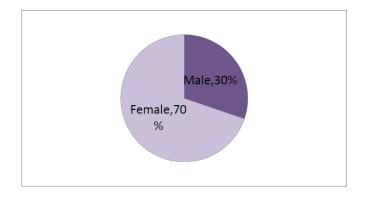
The questionnaire consisted of 79 questions. Respondents who answered less than 35 questions (in total 5 respondents) were excluded from the sample. The total number of questionnaires that were considered was 344. The survey was conducted electronically in April and May 2019.

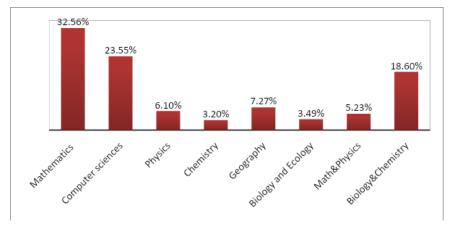
Note: The average number of responses per questionnaire is 76.4. Due to the small number of missing data, no filling was done, but the analysis was based directly on the answers given by students.

The questionnaire was filled out by students of two state universities: 121 students (making 34.67% of the sample) from the University of Gjirokastra, 228 students (65.33% of the sample) from the University of Korca.

Note: The results in the reports are presented collectively for both universities and the abbreviation (ALB) is used for these results. The cases when the student did not prefer to answer the respective question are marked with N/R (No response) or N/A (No answer).

The structure of the sample is based on gender, area of study, level of studies and year of studies is given in Tables 1-4. The charts are given for the whole sample, i.e., for ALB.





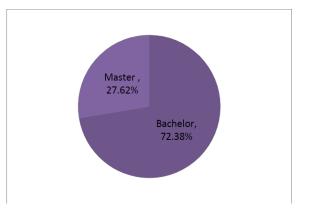
Gender	ALB	ALB%		
		30.23		
Male	104	%		
		69.77		
Female	240	%		
Total	344	100%		
Table 1: Gender				

AL B ALB% Area Biology&Chemistr 18.60 64 % V Biology&Ecology 3.49% 12 Physics 21 6.10% 25 7.27% Geography Chemistry 3.20% 11 32.56 Mathematics 112 % Math&Physics 18 5.23% 23.55 Computer science 81 %

Table 2: Areas of studies

Level	AL B	ALB%
Bachelor	249	72.38 %
Master	95	27.62 %
PhD	0	0.00%

Table 3: Level of studies

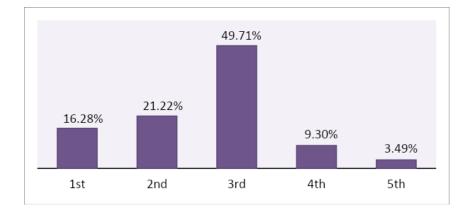


	AL	
Year	B	ALB%
		16.28
1st	56	%
		21.22
2nd	73	%
		49.71
3rd	171	%
4th	32	9.30%
5th	12	3.49%

Table 4: Year of studies

Evaluation of weekly engagement

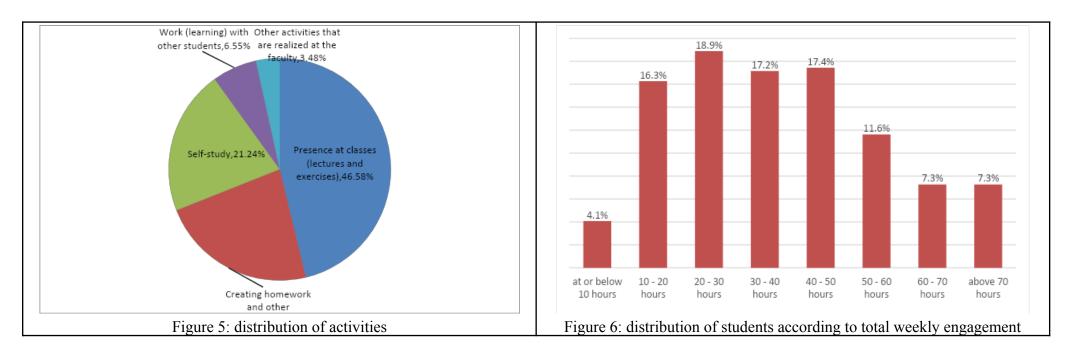
	ALI	3
Activity	average hours	SD ¹
Presence at classes (lectures and exercises)	18.07	7.90
Creating homework and other activities	8.90	7.10
Self-study	8.24	6.71



Work (learning) with other students	2.54	3.27
Other activities that are realized at the		
faculty	1.35	2.26
Total	38.79	20.28

¹ SD – standard deviation

Table 5: distribution of weekly engagement



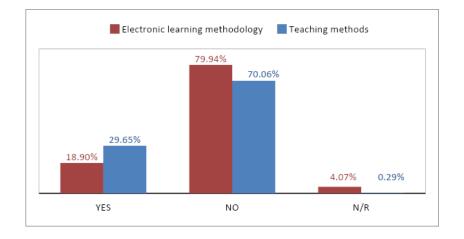
CONCLUSION: Looking at the total engagement of students, we notice that they have estimated their load at about 38 hours, which is slightly less than the anticipated load of 40 hours. However, a standard deviation of 20.28 hours indicates that student self-assessment is in a wide range (Figure 6). About half of students (53.5%) estimated their weekly workload in the very wide range of 20 to 50 hours. The two activities taking most of the time are Presence at classes (lectures and exercises) and Self-study (Table 5 and Figure 5).

Courses in methodology

	ALB				ALB %	
course	YES	NO	N/R	YES	NO	N/R

Electronic learning methodology	65	275	14	18.90 %	79.94 %	4.07%
Teaching methods	102	241	1	29.65 %	70.06 %	0.29%

Table 6: Absolute frequency of students who listened (or not) two courses in the methodology



г.	7
Figure	/
	'

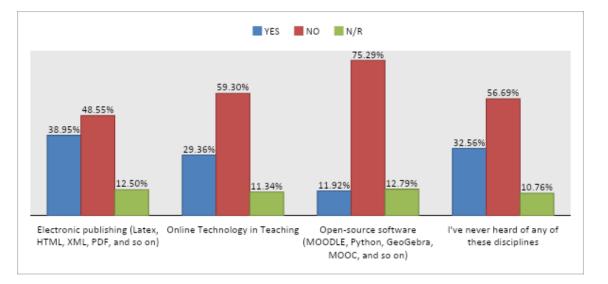
CONCLUSION: The answers to this question showed that the courses attended for traditional teaching methods that are part of the curriculum in the fields of study with teaching profile are more frequented than the courses attended for e-teaching methods. But in both cases, only about a quarter of the students who preferred to answer this question were able to attend at least one methodology course.

Types of disciplines of e-learning methodologies (which you had the opportunity to study at the studies)

		ALB			ALB %	
area	YE S	NO	N/R	YES	NO	N/R
Electronic publishing (Latex, HTML, XML, PDF, and so on)	134	167	43	38.95 %	48.55 %	12.50 %
Online Technology in Teaching	101	204	39	29.36 %	59.30 %	11.34 %
Open-source software (MOODLE, Python, GeoGebra, MOOC, and so on)	41	259	44	11.92 %	75.29 %	12.79 %

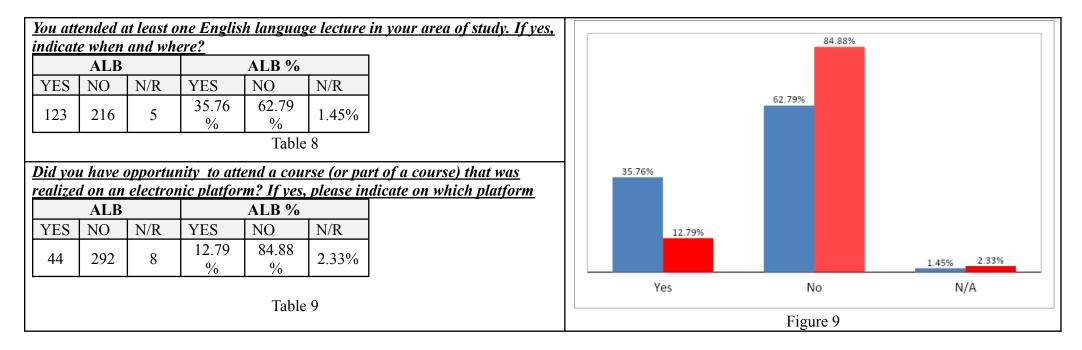
I've never heard of any of these disciplines	112	195	37	32.56 %	56.69 %	10.76 %
				/0	/0	/0

Table 7: Absolute frequency of students





CONCLUSION: The answers to this question depend mainly on the field of study. Thus, students in the field of informatics mainly answered these questions with YES, while students in other fields mainly answered NO. But it is noticed that there is a considerable number of students who have answered with YES the question "I have never heard of any of these disciplines (32.56%)



CONCLUSION: The data show that students had very little experience in attending classes in English. About of 1/3 said they attended a lecture in English, and in most cases, it was one time only. Even more unfavorable situation is in attending a course on an electronic platform. This experience had less than 1/8. Among students who have had the opportunity to attend online courses are mostly students of computer science.

New technologies - electronic materials (presentations), animations / films, online learning platforms, web conferences

Attitudes about the use of new technologies in teaching

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).

notatio	
n	statements
al	Using new technologies in teaching motivates students to get involved more actively in the learning process.
a2	The use of new technologies in teaching helps students to acquire new knowledge more effectively.
a3	Using modern technologies in higher education allows students to be more creative and imaginative.
a4	The use of new technologies in teaching promotes the development of students' interpersonal skills (i.e., the ability to talk and work with others).
a5	The use of modern technologies increases students' self-confidence to be more active at lessons.

a6	Using the online platform allows students easier and faster access to relevant information.
a7	Using the online learning platform contributes to the realization of the individualization of teaching.
a8	The use of new technologies in teaching and learning is the essence of preparing students to live and work in the 21st century.
a9	Students are more respected by teachers who use modern teaching technologies.
a10	It is very important that teachers are open to communicating with students through social networks (Facebook, Twitter, etc.).
a11	Using the online learning platform reduces the amount of stress and nervousness of students.
a12	The use of modern teaching technologies makes students less interested in the content of lessons.

		a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12
	Averag	4.0	4.1	4.1	4.0	3.6	4.0	3.7	4.1	3.2	3.4	2.6	3.3
	e	9	0	9	6	8	7	8	9	3	0	3	
	Median	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	3.0
AL		0	0	0	0	0	0	0	0	0	0	0	0
В	Mode	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	3.0	4.0	3.0	4.0
	with	0	0	0	0	0	0	0	0	0	0	0	0
	STD	0.9	0.9	0.8	0.9	1.0	0.9	0.9	0.9	1.2	1.2	1.2	1.1
	510	7	7	5	7	2	6	8	6	2	2	5	7

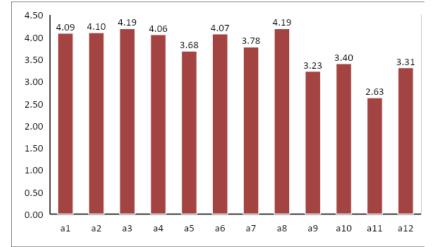


Table 10: Mean response values of the respondents



_		a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12
	1	12	9	5	12	8	5	8	6	46	36	84	30
	2	13	18	6	7	27	20	23	15	33	34	72	49
ALD	3	35	37	49	60	99	55	81	49	111	100	105	97
ALB	4	156	145	141	135	130	129	147	110	100	102	52	115
	5	127	134	142	129	76	134	79	163	51	70	30	51
	N/R	1	1	1	1	4	1	6	1	3	2	1	2

Table 11: Distribution of the responses to the twelve observed claims

CONCLUSION: The students had the highest agreement (the average grade above 4) in relation to the claims a3 (Using modern technologies in higher education allows students to be more creative and imaginative.) and a8 (The use of new technologies in teaching and learning is the essence of preparing the

students to live and work in the 21st century.) The least agreement (the average score more than 2.5 but below 3) was shown by students in relation to the claim all (Using the online learning platform reduces the amount of stress and nervousness of students.) Students showed relatively low agreement (average grade was more than score 3 but below than 3.5) with claims a9 (Students are more respected by teachers who use modern teaching technologies), a10 (It is very important that teachers are open to communicating with students through social networks (Facebook, Twitter, etc.) and a12 (The use of modern teaching technologies makes students less interested in the content of lessons).

The second group of consisted of statements about the use of modern technologies by teachers. The students assessed for how many teachers the statement is true, using the phrases: none of the teachers, a few teachers, majority of teachers, and all the teachers.

notation	statement
b1	Students can communicate with teachers via forums or other forms of online communication.
b2	Teachers are open to communicating with students via social networks (Facebook, Twitter, etc.).
b3	Teachers set test results, give assignments, and share other useful information with students online.
b4	Teachers use electronic test systems to test students.
b5	Teachers share with students electronic textbooks and use multimedia software and learning platforms (Moodle for example).
b6	In the classes teachers use electronic material (presentations, animations / films, etc.) as teaching material.
b7	Teachers encourage us to use electronic books, electronic textbooks, and other online educational materials.
b8	Teachers encourage students to use online courses as educational materials.
b9	Teachers use online learning platforms at their classes.
b10	Teachers encourage students to work in teams, form groups, and discussion forums.
b11	Students are given instructions on how to use online tools, learning platforms, and other electronic resources to help them complete their tasks
	more easily.
b12	Teachers create online tests to ease student self-examination and enable them to check their own knowledge.
b13	Students get ready answers to questions from tests through online communication tools.
b14	Teachers expect students to use collaborative software to communicate with them and other students (Google Docs, Wikis, etc.).
b15	During classes, teachers use web conferences as teaching materials.

		b1	b2	b3	b4	b5	b6	b 7	b8	b9	b10	b11	b12	b13	b14	b15
Δ	No one of teachers	9.30%	<mark>21.22</mark> <mark>%</mark>	24.13 %	63.37 %	<mark>24.71</mark> <mark>%</mark>	17.44 %	9.59%	<mark>35.17</mark> <mark>%</mark>	35.47 %	<mark>34.01</mark> %	23.55 %	<mark>54.65</mark> %	<mark>30.81</mark> <mark>%</mark>	<mark>42.44</mark> %	<mark>29.36</mark> <mark>%</mark>
A LB	A few teachers	31.10 %	<mark>36.05</mark> <mark>%</mark>	22.67 %	18.31 %	<mark>30.23</mark> <mark>%</mark>	26.45 %	28.78 %	<mark>27.33</mark> <mark>%</mark>	35.76 <mark>%</mark>	<mark>27.62</mark> <mark>%</mark>	<mark>31.69</mark> <mark>%</mark>	24.13 %	<mark>31.69</mark> <mark>%</mark>	<mark>29.94</mark> %	<mark>35.76</mark> <mark>%</mark>

Majorit y of teachers	41.86 %	28.20 %	21.80 %	10.76 %	31.40 %	34.88 %	35.76 %	25.00 %	18.60 %	23.84 %	25.29 %	12.21 %	23.26 %	18.90 %	22.38 %
All	16.28	13.37	30.52	6.10%	12.50	19.77	24.13	10.47	6.69%	13.37	18.02	6.10%	12.21	6.69%	10.47
teachers	%	%	%	0.1070	%	%	%	%	0.0970	%	%	0.1070	%	0.0970	%
N/R	1.45%	1.16%	0.87%	1.45%	1.16%	1.45%	1.74%	2.03%	3.49%	1.16%	1.45%	2.91%	2.03%	2.03%	2.03%

%The yellow color indicates the field with the highest percentage of answers for each question and for each institution.

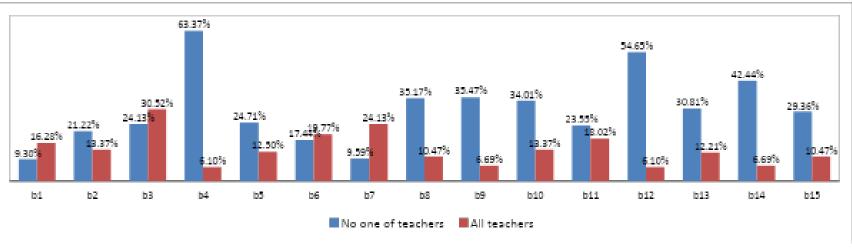
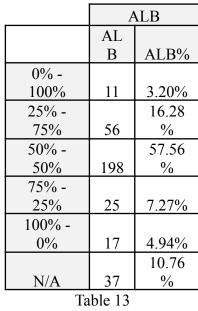


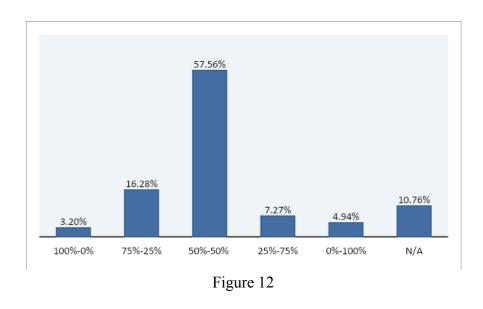
Table 12: Distribution of the responses to the fifteen observed claims

CONCLUSION: The analysis of the student response shows that the claims in this group can be grouped into three groups. The first set of claims are those for which students to a large extent (over 50%) have stated that the claim applies to all or almost all teachers. This group includes the following claims: b1, b3, b6 and b7 (b1- Students can communicate with teachers via forums or other forms of online communication; b3 - Teachers post test results, assign assignments and share other useful information with students in internet; b6 - In the classroom teachers use electronic materials (presentations, animations / movies, etc.) as teaching material and b7- Teachers encourage us to use electronic books, electronic textbooks, and other online educational materials.) The second group of statements are claims that students have indicated (over 50%) that they have not been used by any or some of the teachers. This group consists of b2, b8, b10, b11, b13, and b15, of whom more than 50% of students but less than 70% of them stated that a NO teacher practices. The third set of questions are the other questions b4, b9, b12, b14 that students have indicated (more than 70% of students) have not been used by any or some of the teachers.

Figure 11

In your opinion, what ratio (in percent) should be between teaching and learning in education to make education the most successful? To this question,



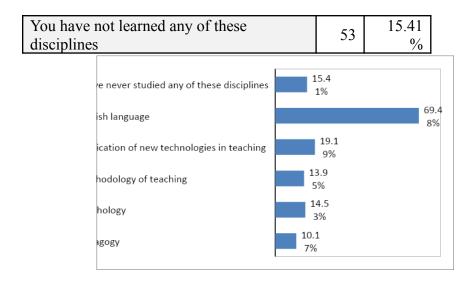


Conclusion: About the two thirds of the students choose the option of 50% - 50%, which agrees with the teachers' answers. However, the dominant choice of this option may indicate that neither teachers nor students understand what is meant by teaching and what is meant by learning.

Have you ever attended a course in one of the following disciplines during you <u>r previous school education?</u>
--

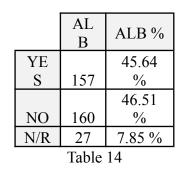
course	ALB	ALB%
Pedagogy	35	10.17 %
Psychology	50	14.53 %

Teaching methodology	48	13.95 %
Application of new technologies in teaching	66	19.19 %
English language	239	69.48 %



Conclusion: The study programs of the students included in the selected sample are mainly study programs in the field of teaching. For this reason, all listed disciplines, with the exception of "English language", are developed in Master studies, therefore the number of students who answered positively to these questions, correlates with the number of students who have stated that they are conducting Master studies . Regarding the "English Language", the courses for this discipline are extended throughout the Bachelor and Master studies and consequently it is expected that the number of students who declared positively, would be high in number and percentage.

Have you ever given feedback and participated in the evaluation of your study programs and in assessing the quality of teaching in your institution?



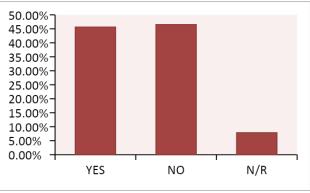


Figure 15

Conclusion: The policies of development and functioning of public universities in Albania clearly oblige these institutions to involve students in the process of evaluating the quality of teaching. The almost equal reaction regarding the inclusion or not of their participation in this process, of the students who preferred to answer this question, really shows how many of them actually participate in this periodic process for Albanian universities.

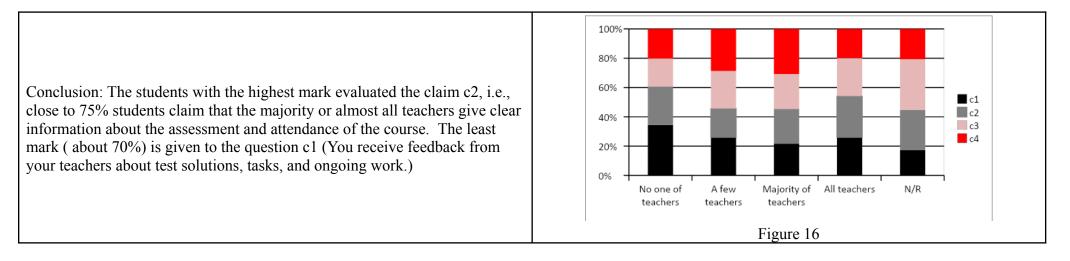
Application of educational strategies

The students assessed for how many teachers the next groups of statements are true, using the phrases: none of the teachers, a few teachers, majority of teachers, and all the teachers.

notation	statements
c1	You receive feedback from your teachers about test solutions, tasks, and ongoing work.
c2	You get clear information on how to evaluate the course you are attending.
c3	You get clear instructions from your teacher how to prepare for the next lesson
c4	Teachers give you homework, short-term assignments, an obligation to read something or some other form of preparation for the next
	lesson.

Teaching strategies involving students

		c1	c1%	c2	c2%	c3	c3%	c4	c4%
	No one of teachers	29	8.43%	22	6.40%	16	4.65%	17	4.94%
Α	A few teachers	69	20.06%	52	15.12%	68	19.77%	76	22.09%
L B	Majority of teachers	93	<mark>27.03%</mark>	102	29.65%	102	29.65%	132	38.37%
	All teachers	148	<mark>43.02%</mark>	160	46.51%	148	43.02%	113	32.85%
	N/R	5	1.45%	8	2.33%	10	2.91%	6	1.74%

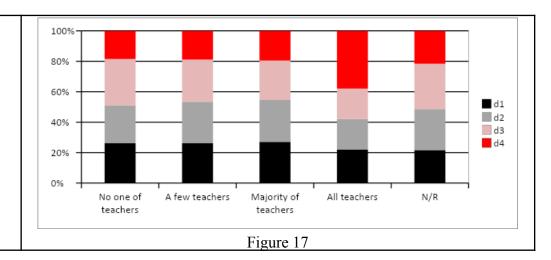


Intellectual engagement and impact on learning

notation	statement
d1	You are motivated and encouraged to develop new ideas and find creative solutions to the problems during
	learning.
d2	During classes, you look for more solutions to the same problem and compare them.
d3	During classes, you usually discuss complex issues.
d4	Teachers ask you to explain your ideas.

d1 d1% d2 d2% d3 d3% d	d4%
------------------------	-----

ALB	No one of teachers	24	6.98%	23	6.69%	28	8.14%	17	4.94%
	A few teachers	94	27.33%	98	28.49%	100	29.07%	68	19.77 %
	Majority of teachers	126	36.63%	128	37.21%	121	35.17%	91	26.45 %
	All teachers	92	26.74%	85	24.71%	84	24.42%	160	46.51 %
	N/R	8	2.33%	10	2.91%	11	3.20%	8	2.33%



Conclusion: The students with the highest mark evaluated the claim d4, i.e., close to 70% students claim that the majority or almost all teachers ask the students to explain their ideas. Regarding the other three questions, d1, d2, d3, the reaction of the students to all teachers or most of them, was at the same levels (about 60%)

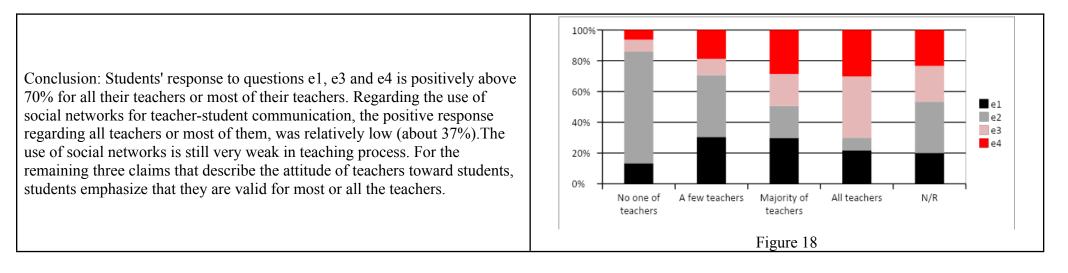
Relationship: teacher - student

notation	statement
e1	You can communicate with teachers openly and freely
e2	You can communicate with teachers via social networks (Facebook, Twitter, etc.).
e3	Teachers come to you with respect.
e4	Teachers greet you with a smile and friendly tone.

1							
e1	e1%	e2	e2%	e3	e3%	e4	e4%

ALB	No one of teachers	17	4.94%	92	26.74%	10	2.91%	8	2.33%
	A few teachers	86	25.00%	114	33.14%	30	8.72%	53	15.41 %
	Majority of teachers	119	34.59%	83	<mark>24.13%</mark>	83	24.13%	114	33.14 %
	All teachers	116	33.72%	45	<mark>13.08%</mark>	214	62.21%	162	47.09 %
	N/R	6	1.74%	10	2.91%	7	2.03%	7	2.03%



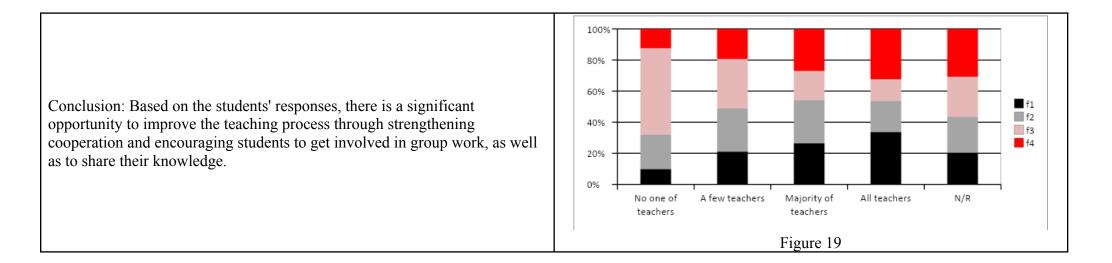


Cooperation

notation	statement
f1	Often group assignments are assigned to you that you need to realize at class or at home.
f2	Students are motivated and stimulated to share their knowledge and help other students during classes or during the preparation of the
	exam.
f3	Teachers expect you to use collaborative software to communicate with them and other students (Google Docs, Wikis, etc.).
f4	Teachers expect you to get involved by expressing your opinion.

f1 f2 f3		f4
----------	--	----

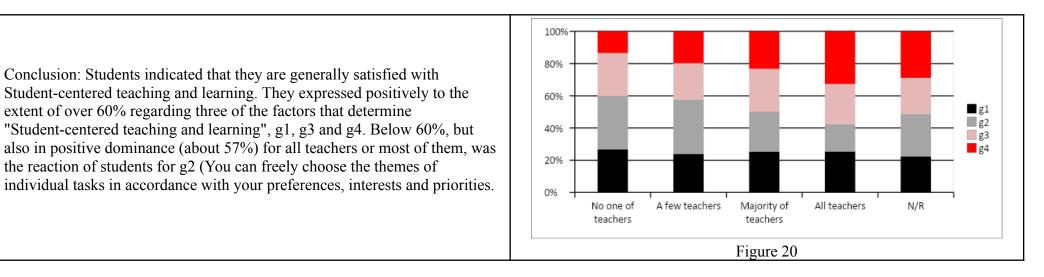
	No one of teachers	16	4.65%	36	10.47%	89	25.87%	20	5.81%
	A few teachers	72	20.93%	95	27.62%	108	31.40%	66	19.19%
ALB	Majority of teachers	122	35.47%	129	37.50%	86	25.00%	125	36.34%
	All teachers	126	36.63%	75	21.80%	51	14.83%	121	35.17%
	N/R	8	2.33%	9	2.62%	10	2.91%	12	3.49%



Student-centered teaching and learning

notation	statement
g1	Teachers show flexibility as far as the content or methods of their course are concerned, in order to adapt it to the needs of students.
g2	You can freely choose the themes of individual tasks in accordance with your preferences, interests and priorities.
g3	Teachers try to link the contents of their courses with your knowledge and experience gained through the subjects you have previously
	listened to.
g4	Teachers show interest in students' opinions.

		g1	g1%	g2	g2%	g3	g3%	g4	g4%
	No one of teachers	26	7.56%	32	9.30%	26	7.56%	13	3.78%
	A few teachers	73	21.22%	103	29.94%	69	20.06%	60	17.44%
AL B	Majority of teachers	122	35.47%	121	<mark>35.17%</mark>	129	37.50%	113	32.85%
	All teachers	113	32.85%	76	<mark>22.09%</mark>	110	31.98%	145	42.15%
	N/R	10	2.91%	12	3.49%	10	2.91%	13	3.78%



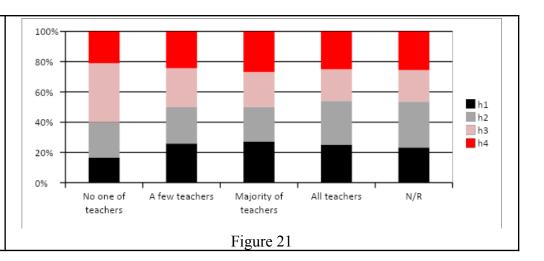
Enthusiasm and way of teaching

notation	statement
h1	Teachers maintain student interest by changing teaching methods and methods of
	work from time to time.
h2	Teachers use electronic books, presentations, video clips, movies, etc. at their
	classes.

h3	Teachers organize work in pairs, group work, workshops, etc. to improve
	interaction among students on lessons.
h4	Teachers stimulate students to seek additional learning resources, in addition to
	compulsory materials, critically assessing their reliability.

		h1	h1%	h2	h2%	h3	h3%	h4	h4%
	No one of teachers	25	7.27%	36	10.47%	59	17.15%	32	9.30%
	A few teachers	100	29.07%	93	27.03%	100	29.07%	94	27.33%
AL B	Majority of teachers	128	37.21%	108	31.40%	108	31.40%	126	36.63%
	All teachers	81	23.55%	94	27.33%	68	19.77%	81	23.55%
	N/R	10	2.91%	13	3.78%	9	2.62%	11	3.20%

Conclusion: Students (more than 1/3) indicated that most teachers are positively interested in the four factors that determine "Enthusiasm and way of teaching", but also 1/3 of them think that only "A few teachers" are interested in the above factors. The reaction of students in this way show that there is a great need for the development of pedagogical competencies among teachers.



Structure

notation	statement
j1	During classes, teachers summarize the material and highlight the most important
	parts.
j2	Teachers adjust the time of instruction and do well time management.
j3	Teaching materials are well structured and organized.
j4	Classes are well organized.

			j1		j2		j3		j4
	No one of teachers	11	3.20%	4	1.16%	16	4.65%	15	4.36%
Α	A few teachers	55	<mark>15.99%</mark>	46	<mark>13.37%</mark>	58	<mark>16.86%</mark>	51	<mark>14.83%</mark>
L B	Majority of teachers	122	35.47%	111	32.27%	132	38.37%	129	37.50%
	All teachers	147	42.73%	174	50.58%	129	37.50%	140	40.70%
	N/R	9	2.62%	9	2.62%	9	2.62%	9	2.62%

Conclusion: As far as the structure of the class is concerned, students have chosen to a large extent the answer that all teachers practice the activities mentioned in the statement (more than 40%). Nevertheless, a significant number of students have chosen the option A few teachers (about 15%) which indicates that there is space for improving pedagogical for a large number of teachers.

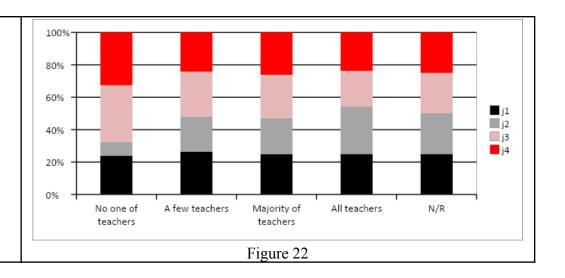


Figure 7

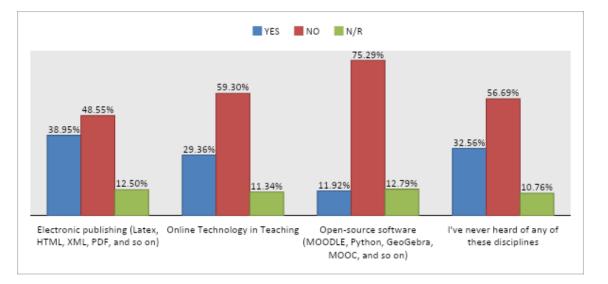
CONCLUSION: The answers to this question showed that the courses attended for traditional teaching methods that are part of the curriculum in the fields of study with teaching profile are more frequented than the courses attended for e-teaching methods. But in both cases, only about a quarter of the students who preferred to answer this question were able to attend at least one methodology course.

Types of disciplines of e-learning methodologies (which you had the opportunity to study at the studies)

		ALB		ALB %			
area	YE S	NO	N/R	YES	NO	N/R	
Electronic publishing (Latex, HTML, XML, PDF, and so on)	134	167	43	38.95 %	48.55 %	12.50 %	
Online Technology in Teaching	101	204	39	29.36 %	59.30 %	11.34 %	
Open-source software (MOODLE, Python, GeoGebra, MOOC, and so on)	41	259	44	11.92 %	75.29 %	12.79 %	

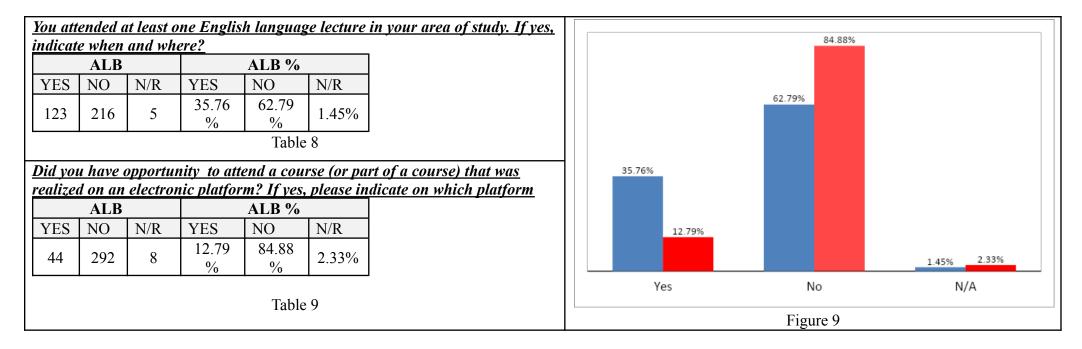
I've never heard of any of these disciplines	112	195	37	32.56 %	56.69 %	10.76 %
				/0	/0	/0

Table 7: Absolute frequency of students





CONCLUSION: The answers to this question depend mainly on the field of study. Thus, students in the field of informatics mainly answered these questions with YES, while students in other fields mainly answered NO. But it is noticed that there is a considerable number of students who have answered with YES the question "I have never heard of any of these disciplines (32.56%)



CONCLUSION: The data show that students had very little experience in attending classes in English. About of 1/3 said they attended a lecture in English, and in most cases, it was one time only. Even more unfavorable situation is in attending a course on an electronic platform. This experience had less than 1/8. Among students who have had the opportunity to attend online courses are mostly students of computer science.

New technologies - electronic materials (presentations), animations / films, online learning platforms, web conferences

Attitudes about the use of new technologies in teaching

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).

notatio	
n	statements
al	Using new technologies in teaching motivates students to get involved more actively in the learning process.
a2	The use of new technologies in teaching helps students to acquire new knowledge more effectively.
a3	Using modern technologies in higher education allows students to be more creative and imaginative.
a4	The use of new technologies in teaching promotes the development of students' interpersonal skills (i.e., the ability to talk and work with others).
a5	The use of modern technologies increases students' self-confidence to be more active at lessons.

a6	Using the online platform allows students easier and faster access to relevant information.
a7	Using the online learning platform contributes to the realization of the individualization of teaching.
a8	The use of new technologies in teaching and learning is the essence of preparing students to live and work in the 21st century.
a9	Students are more respected by teachers who use modern teaching technologies.
a10	It is very important that teachers are open to communicating with students through social networks (Facebook, Twitter, etc.).
a11	Using the online learning platform reduces the amount of stress and nervousness of students.
a12	The use of modern teaching technologies makes students less interested in the content of lessons.

		a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12
	Averag	4.0	4.1	4.1	4.0	3.6	4.0	3.7	4.1	3.2	3.4	2.6	3.3
	e	9	0	9	6	8	7	8	9	3	0	3	
	Median	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	3.0
AL		0	0	0	0	0	0	0	0	0	0	0	0
В	Mode	4.0	4.0	5.0	4.0	4.0	5.0	4.0	5.0	3.0	4.0	3.0	4.0
	with	0	0	0	0	0	0	0	0	0	0	0	0
	STD	0.9	0.9	0.8	0.9	1.0	0.9	0.9	0.9	1.2	1.2	1.2	1.1
	51D	7	7	5	7	2	6	8	6	2	2	5	7

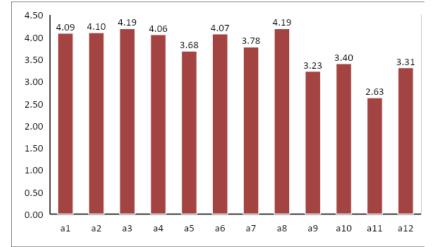


Table 10: Mean response values of the respondents



		a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12
	1	12	9	5	12	8	5	8	6	46	36	84	30
	2	13	18	6	7	27	20	23	15	33	34	72	49
	3	35	37	49	60	99	55	81	49	111	100	105	97
ALB	4	156	145	141	135	130	129	147	110	100	102	52	115
	5	127	134	142	129	76	134	79	163	51	70	30	51
	N/R	1	1	1	1	4	1	6	1	3	2	1	2

Table 11: Distribution of the responses to the twelve observed claims

CONCLUSION: The students had the highest agreement (the average grade above 4) in relation to the claims a3 (Using modern technologies in higher education allows students to be more creative and imaginative.) and a8 (The use of new technologies in teaching and learning is the essence of preparing the

students to live and work in the 21st century.) The least agreement (the average score more than 2.5 but below 3) was shown by students in relation to the claim all (Using the online learning platform reduces the amount of stress and nervousness of students.) Students showed relatively low agreement (average grade was more than score 3 but below than 3.5) with claims a9 (Students are more respected by teachers who use modern teaching technologies), a10 (It is very important that teachers are open to communicating with students through social networks (Facebook, Twitter, etc.) and a12 (The use of modern teaching technologies makes students less interested in the content of lessons).

The second group of consisted of statements about the use of modern technologies by teachers. The students assessed for how many teachers the statement is true, using the phrases: none of the teachers, a few teachers, majority of teachers, and all the teachers.

notation	statement
b1	Students can communicate with teachers via forums or other forms of online communication.
b2	Teachers are open to communicating with students via social networks (Facebook, Twitter, etc.).
b3	Teachers set test results, give assignments, and share other useful information with students online.
b4	Teachers use electronic test systems to test students.
b5	Teachers share with students electronic textbooks and use multimedia software and learning platforms (Moodle for example).
b6	In the classes teachers use electronic material (presentations, animations / films, etc.) as teaching material.
b7	Teachers encourage us to use electronic books, electronic textbooks, and other online educational materials.
b8	Teachers encourage students to use online courses as educational materials.
b9	Teachers use online learning platforms at their classes.
b10	Teachers encourage students to work in teams, form groups, and discussion forums.
b11	Students are given instructions on how to use online tools, learning platforms, and other electronic resources to help them complete their tasks
	more easily.
b12	Teachers create online tests to ease student self-examination and enable them to check their own knowledge.
b13	Students get ready answers to questions from tests through online communication tools.
b14	Teachers expect students to use collaborative software to communicate with them and other students (Google Docs, Wikis, etc.).
b15	During classes, teachers use web conferences as teaching materials.

		b1	b2	b3	b4	b5	b6	b 7	b8	b9	b10	b11	b12	b13	b14	b15
Δ	No one of teachers	9.30%	<mark>21.22</mark> <mark>%</mark>	24.13 %	63.37 %	<mark>24.71</mark> <mark>%</mark>	17.44 %	9.59%	<mark>35.17</mark> <mark>%</mark>	35.47 %	<mark>34.01</mark> <mark>%</mark>	23.55 %	<mark>54.65</mark> %	<mark>30.81</mark> <mark>%</mark>	<mark>42.44</mark> %	<mark>29.36</mark> <mark>%</mark>
A LB	A few teachers	31.10 %	<mark>36.05</mark> <mark>%</mark>	22.67 %	18.31 %	<mark>30.23</mark> <mark>%</mark>	26.45 %	28.78 %	27.33 <mark>%</mark>	35.76 %	<mark>27.62</mark> <mark>%</mark>	<mark>31.69</mark> <mark>%</mark>	24.13 %	<mark>31.69</mark> <mark>%</mark>	<mark>29.94</mark> %	<mark>35.76</mark> <mark>%</mark>

Majorit y of teachers	41.86 %	28.20 %	21.80 %	10.76 %	31.40 %	34.88 %	35.76 %	25.00 %	18.60 %	23.84 %	25.29 %	12.21 %	23.26 %	18.90 %	22.38 %
All	16.28	13.37	30.52	6.10%	12.50	19.77	24.13	10.47	6.69%	13.37	18.02	6.10%	12.21	6.69%	10.47
teachers	%	%	%	0.1070	%	%	%	%	0.0970	%	%	0.1070	%	0.0970	%
N/R	1.45%	1.16%	0.87%	1.45%	1.16%	1.45%	1.74%	2.03%	3.49%	1.16%	1.45%	2.91%	2.03%	2.03%	2.03%

%The yellow color indicates the field with the highest percentage of answers for each question and for each institution.

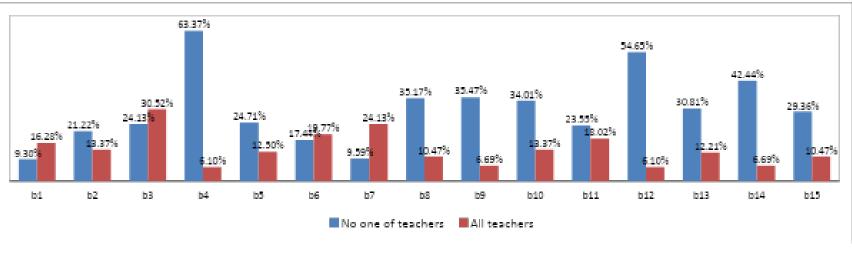
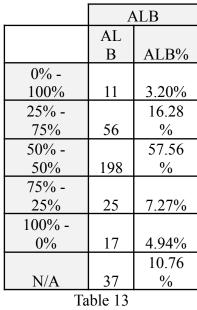


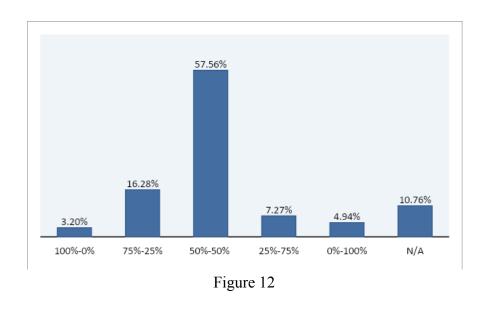
Table 12: Distribution of the responses to the fifteen observed claims

CONCLUSION: The analysis of the student response shows that the claims in this group can be grouped into three groups. The first set of claims are those for which students to a large extent (over 50%) have stated that the claim applies to all or almost all teachers. This group includes the following claims: b1, b3, b6 and b7 (b1- Students can communicate with teachers via forums or other forms of online communication; b3 - Teachers post test results, assign assignments and share other useful information with students in internet; b6 - In the classroom teachers use electronic materials (presentations, animations / movies, etc.) as teaching material and b7- Teachers encourage us to use electronic books, electronic textbooks, and other online educational materials.) The second group of statements are claims that students have indicated (over 50%) that they have not been used by any or some of the teachers. This group consists of b2, b8, b10, b11, b13, and b15, of whom more than 50% of students but less than 70% of them stated that a NO teacher practices. The third set of questions are the other questions b4, b9, b12, b14 that students have indicated (more than 70% of students) have not been used by any or some of the teachers.

Figure 11

In your opinion, what ratio (in percent) should be between teaching and learning in education to make education the most successful? To this question,



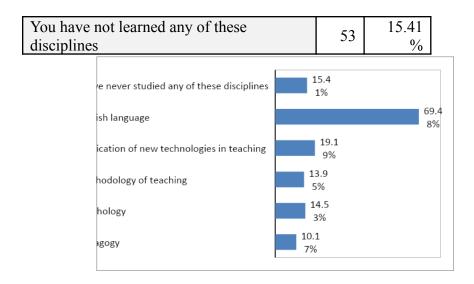


Conclusion: About the two thirds of the students choose the option of 50% - 50%, which agrees with the teachers' answers. However, the dominant choice of this option may indicate that neither teachers nor students understand what is meant by teaching and what is meant by learning.

Have you ever attended a course in one of the following disciplines during you <u>r previous school education?</u>
--

course	ALB	ALB%
Pedagogy	35	10.17 %
Davahalagy	55	14.53
Psychology	50	%

Teaching methodology	48	13.95 %
Application of new technologies in teaching	66	19.19 %
English language	239	69.48 %

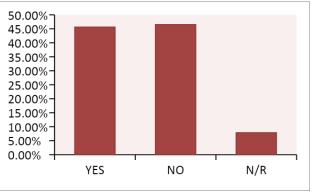




Conclusion: The study programs of the students included in the selected sample are mainly study programs in the field of teaching. For this reason, all listed disciplines, with the exception of "English language", are developed in Master studies, therefore the number of students who answered positively to these questions, correlates with the number of students who have stated that they are conducting Master studies . Regarding the "English Language", the courses for this discipline are extended throughout the Bachelor and Master studies and consequently it is expected that the number of students who declared positively, would be high in number and percentage.

Have you ever given feedback and participated in the evaluation of your study programs and in assessing the quality of teaching in your institution?

	AL B	ALB %					
YE		45.64					
S	157	%					
		46.51					
NO	160	%					
N/R	27	7.85 %					
Table 14							





Conclusion: The policies of development and functioning of public universities in Albania clearly oblige these institutions to involve students in the process of evaluating the quality of teaching. The almost equal reaction regarding the inclusion or not of their participation in this process, of the students who preferred to answer this question, really shows how many of them actually participate in this periodic process for Albanian universities.

Application of educational strategies

The students assessed for how many teachers the next groups of statements are true, using the phrases: none of the teachers, a few teachers, majority of teachers, and all the teachers.

www.tecomp.ni.ac.rs



in Natural and Mathematical Sciences



Teaching strategies involving students

notation	statements
c 1	You receive feedback from your teachers about test solutions, tasks, and ongoing work.
c2	You get clear information on how to evaluate the course you are attending.
c3	You get clear instructions from your teacher how to prepare for the next lesson
c4	Teachers give you homework, short-term assignments, an obligation to read something or some other form of preparation for the next
	lesson.

		c1	c1%	c2	c2%	c3	c3%	c4	c4%
	No one of teachers	29	8.43%	22	6.40%	16	4.65%	17	4.94%
Α	A few teachers	69	20.06%	52	15.12%	68	19.77%	76	22.09%
L B	Majority of teachers	93	<mark>27.03%</mark>	102	29.65%	102	29.65%	132	38.37%
	All teachers	148	<mark>43.02%</mark>	160	46.51%	148	43.02%	113	32.85%
	N/R	5	1.45%	8	2.33%	10	2.91%	6	1.74%

Table 15

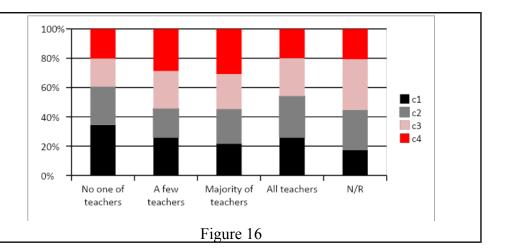
www.tecomp.ni.ac.rs



Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences

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

Conclusion: The students with the highest mark evaluated the claim c2, i.e., close to 75% students claim that the majority or almost all teachers give clear information about the assessment and attendance of the course. The least mark (about 70%) is given to the question c1 (You receive feedback from your teachers about test solutions, tasks, and ongoing work.)



Intellectual engagement and impact on learning

notation	statement
d1	You are motivated and encouraged to develop new ideas and find creative solutions to the problems during
	learning.
d2	During classes, you look for more solutions to the same problem and compare them.
d3	During classes, you usually discuss complex issues.
d4	Teachers ask you to explain your ideas.

		d1	d1%	d2	d2%	d3	d3%	d4	d4%
ALB	No one of teachers	24	6.98%	23	6.69%	28	8.14%	17	4.94%

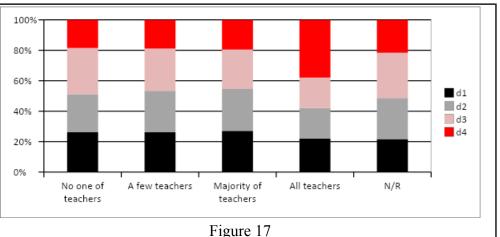
www.tecomp.ni.ac.rs



	A few teachers	94	27.33%	98	28.49%	100	29.07%	68	19.77 %
	Majority of teachers	126	36.63%	128	37.21%	121	35.17%	91	26.45 %
	All teachers	92	26.74%	85	24.71%	84	24.42%	160	46.51 %
	N/R	8	2.33%	10	2.91%	11	3.20%	8	2.33%



Conclusion: The students with the highest mark evaluated the claim d4, i.e., close to 70% students claim that the majority or almost all teachers ask the students to explain their ideas. Regarding the other three questions, d1, d2, d3, the reaction of the students to all teachers or most of them, was at the same levels (about 60%)



Relationship: teacher - student

notation	statement
e1	You can communicate with teachers openly and freely
e2	You can communicate with teachers via social networks (Facebook, Twitter, etc.).

www.tecomp.ni.ac.rs



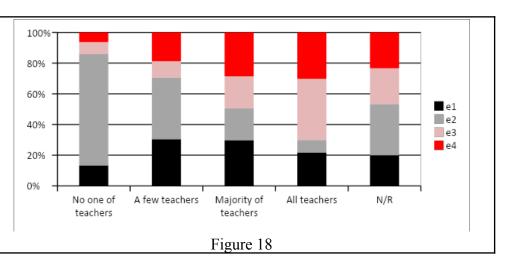


e3	Teachers come to you with respect.
e4	Teachers greet you with a smile and friendly tone.

		e1	e1%	e2	e2%	e3	e3%	e4	e4%
	No one of teachers	17	4.94%	92	26.74%	10	2.91%	8	2.33%
	A few teachers	86	25.00%	114	33.14%	30	8.72%	53	15.41 %
ALB	Majority of teachers	119	34.59%	83	<mark>24.13%</mark>	83	24.13%	114	33.14 %
	All teachers	116	33.72%	45	<mark>13.08%</mark>	214	62.21%	162	47.09 %
	N/R	6	1.74%	10	2.91%	7	2.03%	7	2.03%



Conclusion: Students' response to questions e1, e3 and e4 is positively above 70% for all their teachers or most of their teachers. Regarding the use of social networks for teacher-student communication, the positive response regarding all teachers or most of them, was relatively low (about 37%). The use of social networks is still very weak in teaching process. For the remaining three claims that describe the attitude of teachers toward students, students emphasize that they are valid for most or all the teachers.



www.tecomp.ni.ac.rs



Cooperation

notation	statement						
f1	Often group assignments are assigned to you that you need to realize at class or at home.						
f2	Students are motivated and stimulated to share their knowledge and help other students during classes or during the preparation of the						
	exam.						
f3	Teachers expect you to use collaborative software to communicate with them and other students (Google Docs, Wikis, etc.).						
f4	Teachers expect you to get involved by expressing your opinion.						

			f1		f2		f3		f4
	No one of teachers	16	4.65%	36	10.47%	89	25.87%	20	5.81%
	A few teachers	72	20.93%	95	27.62%	108	31.40%	66	19.19%
ALB	Majority of teachers	122	35.47%	129	37.50%	86	25.00%	125	36.34%
	All teachers	126	36.63%	75	21.80%	51	14.83%	121	35.17%
	N/R	8	2.33%	9	2.62%	10	2.91%	12	3.49%

Table 18

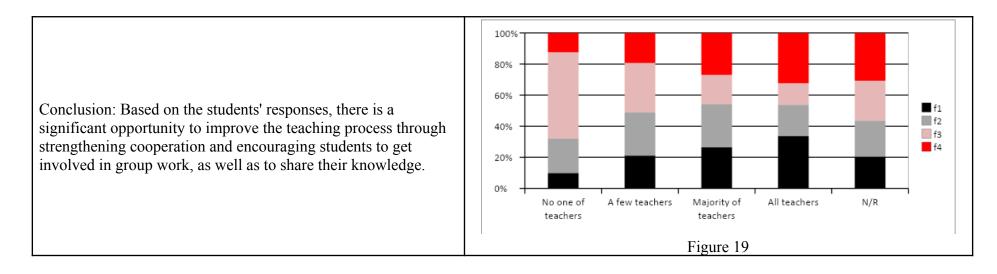
www.tecomp.ni.ac.rs



Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences

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





Student-centered teaching and learning

notation	statement
g1	Teachers show flexibility as far as the content or methods of their course are concerned, in order to adapt it to the needs of students.
g2	You can freely choose the themes of individual tasks in accordance with your preferences, interests and priorities.
g3	Teachers try to link the contents of their courses with your knowledge and experience gained through the subjects you have
	previously listened to.
g4	Teachers show interest in students' opinions.

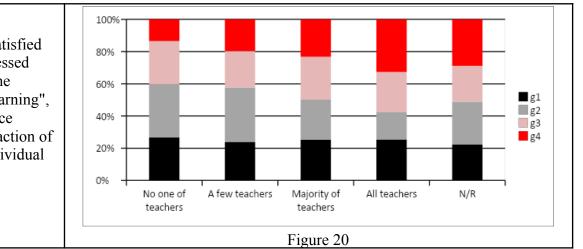
		g1	g1%	g2	g2%	g3	g3%	g4	g4%
AL	No one of teachers	26	7.56%	32	9.30%	26	7.56%	13	3.78%
B	A few teachers	73	21.22%	103	29.94%	69	20.06%	60	17.44%

www.tecomp.ni.ac.rs





	Majority of teachers	122	35.47%	121	<mark>35.17%</mark>	129	37.50%	113	32.85%
	All teachers	113	32.85%	76	<mark>22.09%</mark>	110	31.98%	145	42.15%
	N/R	10	2.91%	12	3.49%	10	2.91%	13	3.78%





Conclusion: Students indicated that they are generally satisfied with Student-centered teaching and learning. They expressed positively to the extent of over 60% regarding three of the factors that determine "Student-centered teaching and learning", g1, g3 and g4. Below 60%, but also in positive dominance (about 57%) for all teachers or most of them, was the reaction of students for g2 (You can freely choose the themes of individual tasks in accordance with your preferences, interests and priorities.

Enthusiasm and way of teaching

notation	statement
h1	Teachers maintain student interest by changing teaching methods and methods of work from time to time.

www.tecomp.ni.ac.rs



in Higher Education in Natural and Mathematical Sciences



h2	Teachers use electronic books, presentations, video clips, movies, etc. at their classes.
h3	Teachers organize work in pairs, group work, workshops, etc. to improve interaction among students on lessons.
h4	Teachers stimulate students to seek additional learning resources, in addition to compulsory materials, critically assessing their reliability.

		h1	h1%	h2	h2%	h3	h3%	h4	h4%
	No one of teachers	25	7.27%	36	10.47%	59	17.15%	32	9.30%
	A few teachers	100	29.07%	93	27.03%	100	29.07%	94	27.33%
AL B	Majority of teachers	128	37.21%	108	31.40%	108	31.40%	126	36.63%
	All teachers	81	23.55%	94	27.33%	68	19.77%	81	23.55%
	N/R	10	2.91%	13	3.78%	9	2.62%	11	3.20%

Table 20

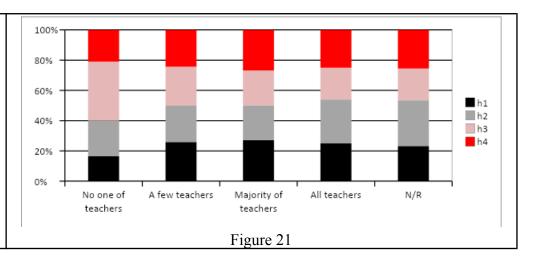
www.tecomp.ni.ac.rs



Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences

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

Conclusion: Students (more than 1/3) indicated that most teachers are positively interested in the four factors that determine "Enthusiasm and way of teaching", but also 1/3 of them think that only "A few teachers" are interested in the above factors. The reaction of students in this way show that there is a great need for the development of pedagogical competencies among teachers.



Structure

notation	statement
j1	During classes, teachers summarize the material and highlight the most important
	parts.
j2	Teachers adjust the time of instruction and do well time management.
j3	Teaching materials are well structured and organized.
j4	Classes are well organized.

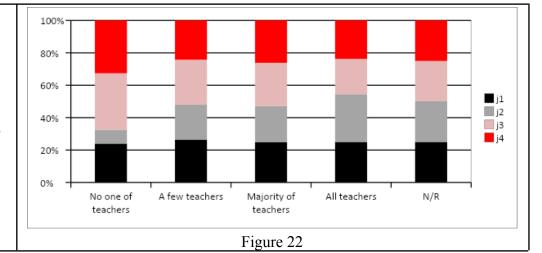
			j1		j2		j3		j4
A L P	No one of teachers	11	3.20%	4	1.16%	16	4.65%	15	4.36%
	A few teachers	55	<mark>15.99%</mark>	46	<mark>13.37%</mark>	58	<mark>16.86%</mark>	51	<mark>14.83%</mark>

www.tecomp.ni.ac.rs





	Majority of teachers	122	35.47%	111	32.27%	132	38.37%	129	37.50%
	All teachers	147	42.73%	174	50.58%	129	37.50%	140	40.70%
	N/R	9	2.62%	9	2.62%	9	2.62%	9	2.62%





Conclusion: As far as the structure of the class is concerned, students have chosen to a large extent the answer that all teachers practice the activities mentioned in the statement (more than 40%). Nevertheless, a significant number of students have chosen the option A few teachers (about 15%) which indicates that there is space for improving pedagogical for a large number of teachers.

www.tecomp.ni.ac.rs