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

ERASMUS+ CBHE PROJECT# 585760-EPP-1-2017-1-AM-EPPKA2-CBHE-JP

"CHANGE IN CLASSROOM: PROMOTING INNOVATIVE TEACHING & LEARNING TO ENHANCE STUDENT LEARNING EXPERIENCE IN EASTERN PARTNERSHIP COUNTRIES", PRINTeL

VANADZOR STATE UNIVERSITY (VSU)

NEEDS ANALYSIS REPORT

Results of the Surveys on Teaching Staff Development Needs Assessment and Student Learning Needs Assessment

VANADZOR 2018

CONTENTS

Introduction

Vanadzor State University within the framework of the EU ERASMUS + PRINTeL project, "Teaching Staff Professional Development Needs Assessment" and "Student Learning Needs Assessment" surveys were conducted to increase the quality of teaching at the University, to promote development of teaching and learning processes, and to apply the insertion of innovative, technologically equipped teaching and learning methods, modern infrastructures and technological tools.

The surveys were conducted with two different questionnaires (Appendix 1), taking into account the peculiarities of student learning needs and the need for teacher training needs The questionnaires were composed of 8 chapters (Table 1), which allowed them to carry out studies from the point of view of the instructor and the learner, separately.

Tablel 1. Structure of questionnaires

Section	***"Teaching staff professional development needs assessment"* questionnaire**	***"Student learning needs assessment"* questionnaire**
1.	General information	General information
2.	Teaching styles and pedagogical approaches used in class	Teaching styles and approaches in class
3.	Learning styles and approaches	Learning styles and approaches
4.	Assessment methods and approaches	Assessment methods and approaches
5.	Use of technology, e-teaching & social media for teaching and support of learning	Use of technology, e-learning & social media for supporting learning
6.	Facilities to support teaching	Facilities to support student learning
7.	Teaching materials	Learning materials
8.	Teachers' comments and recommendations	Students' comments and recommendations

But in both cases they had the opportunity to refer to:

- teaching and learning types and approaches in the classroom;
- assessment methods and approaches;
- the use of technology, electronic and media learning methods for supporting learning process
- supporting issues for educational process,
- study materials.

The methodology of analyzing the data obtained from Sections 2-7 is described below.

The survey data were imported from the Google Form and interpreted in a format suitable for quantitative analysis. To compare the results of the survey with similar data from other universities, the data were presented in the reduced form, and these processing was carried out using the Microsoft Excel graphical toolkit.

In the table below, the weighting coefficients of the degree of relevance of the options selected are presented. For the «Currently Used» option the weighting coefficient is assumed to be 3.

Table of Interpretation of Survey Questions in Scores:

1.	*High need or Highly effective*	*4*
2.	*Medium need or Partially effective*	*3*
3.	*Low need or Less effective*	*2*
4.	*No need or Not effective*	*0*
5.	*Currently Used*	*3*

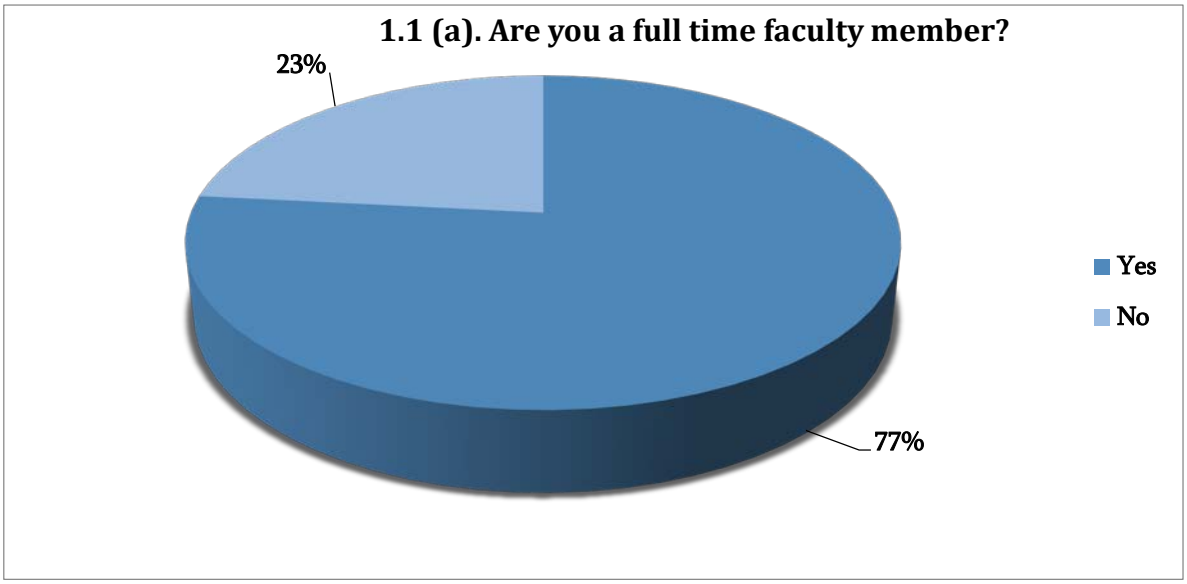
The quantitative and qualitative analysis of the worked out data is represented in the present report.

Section 1. General Information

a) ´´Teaching Staff Professional Development Needs Assessment´´

The survey was assisted by 30 lecturers, of whom 77% of the participating teachers are on full-time and 23% on-part-time basis (Figure 1.1). There are internal employees with concurrent workers among part-time lectures staff.

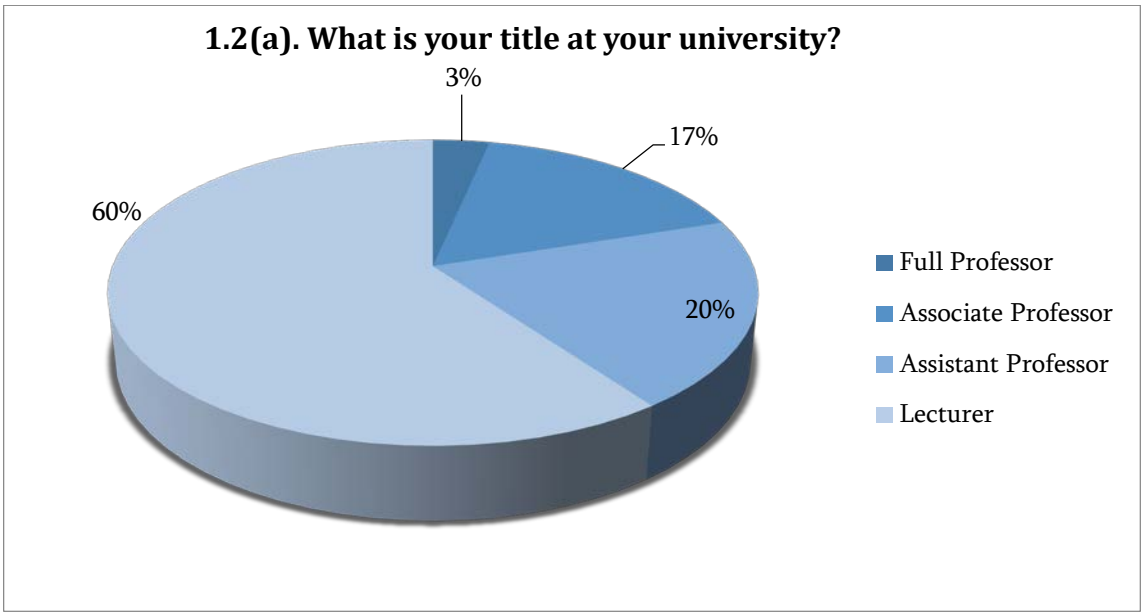
Figure 1.1 Academic staff according to workload

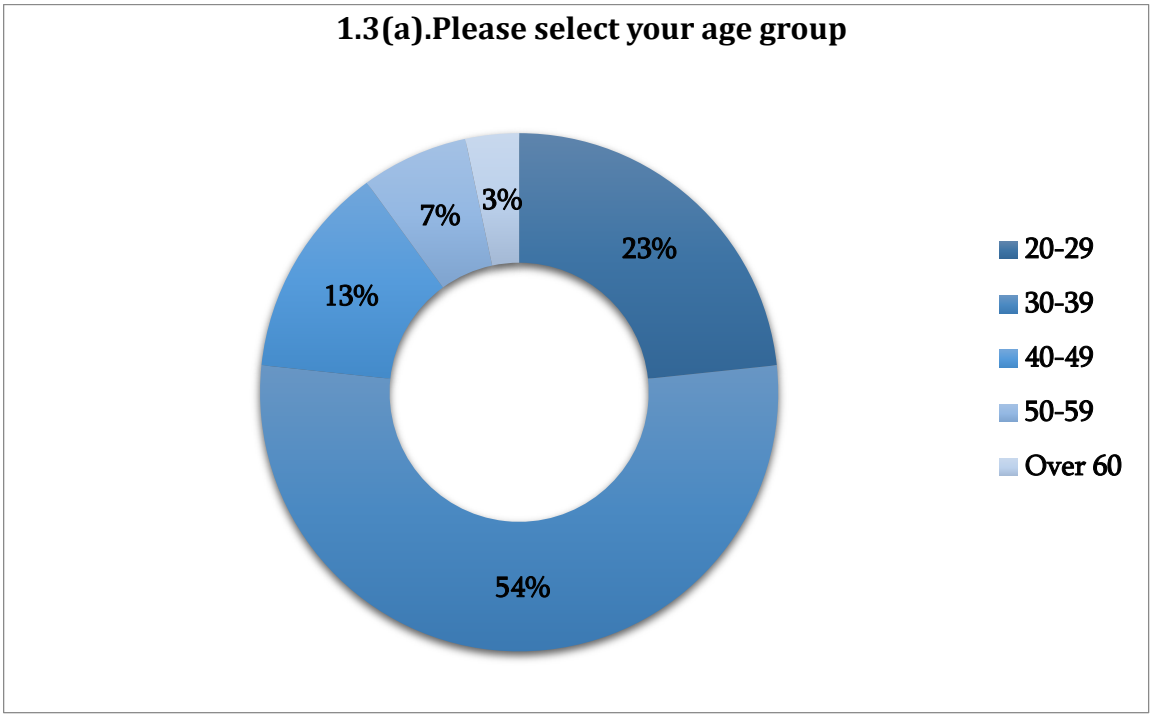


3% of lecturers are Professors, 17% - Associate Professors, 20% - Assistant Professors, 60% - Lecturer (Figure 1.2). The number of professors and associate professors is small, as the preference of the opportunity to participate in the survey has been given to the young lecturers who are more open to innovations. According to age distribution, we had the following picture:

- 20-29-23%
- 30-39-53%
- 40-49-13%
- 50-59-7%
- Over 60-3%(Figure 1.3):

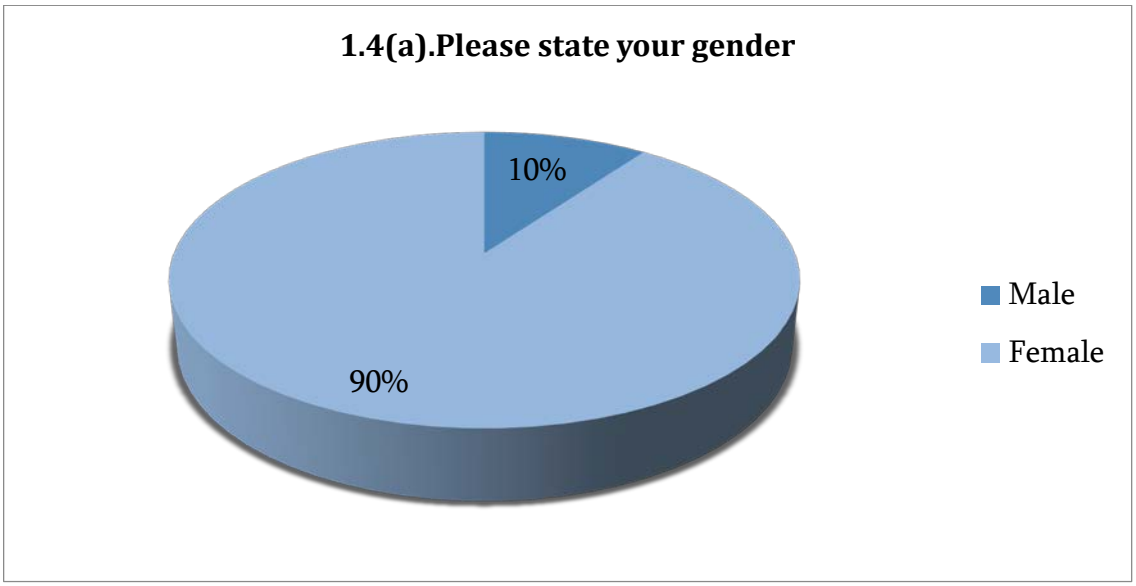
Figures 1.2.-1.3.-Lecturers by position and age





The percentage of the female who completed the online questionnaire comprised 77 % and the male – 23% (Figure 1.4):

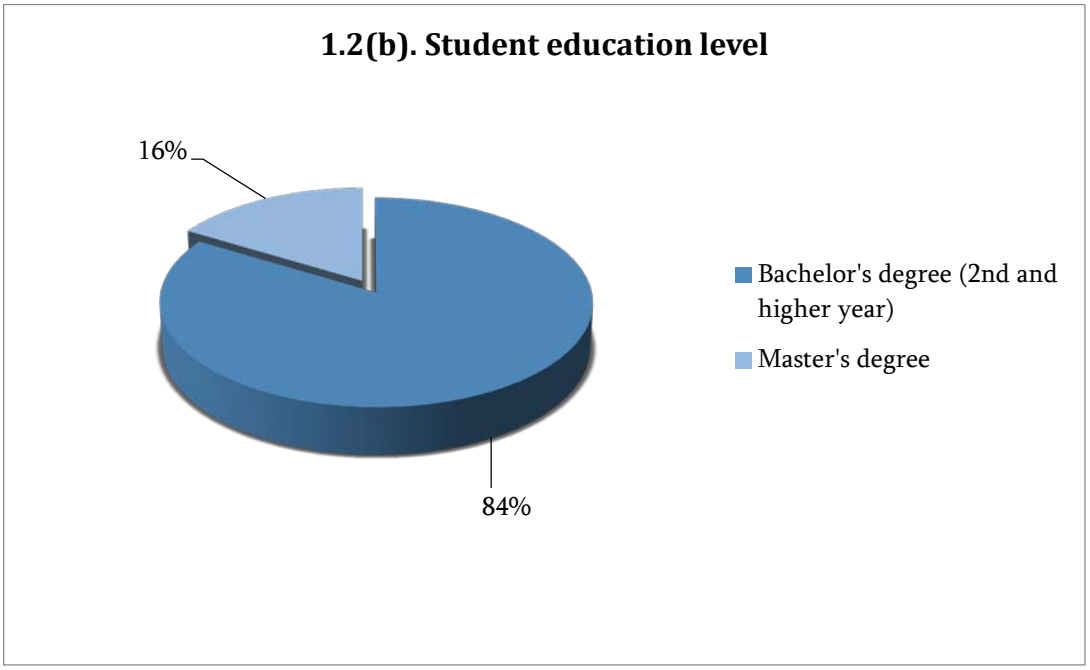
Figure1.4. Lectures by gender



b) "Student's learning needs assessment"

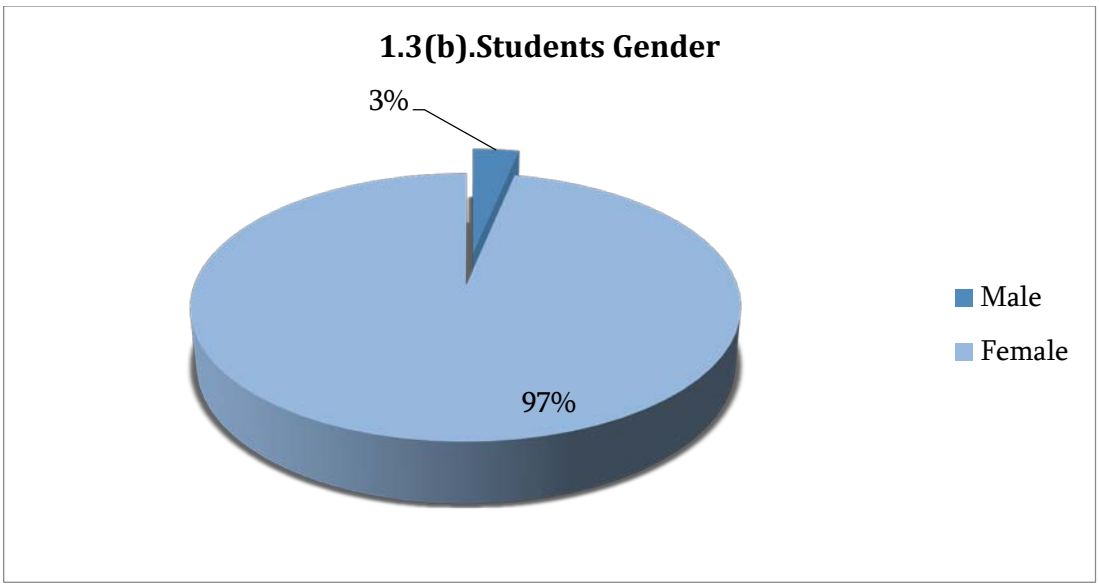
From the group of students 61 of them participated in the survey, from which 84% were Bachelor's degree students and 16% Master's degree students. (Figure 1.5):

Figure1.5. Student education level



97% of the students are female and the 3% are male. (Figure 1.6)

Figure1.6. Student ́s Gender

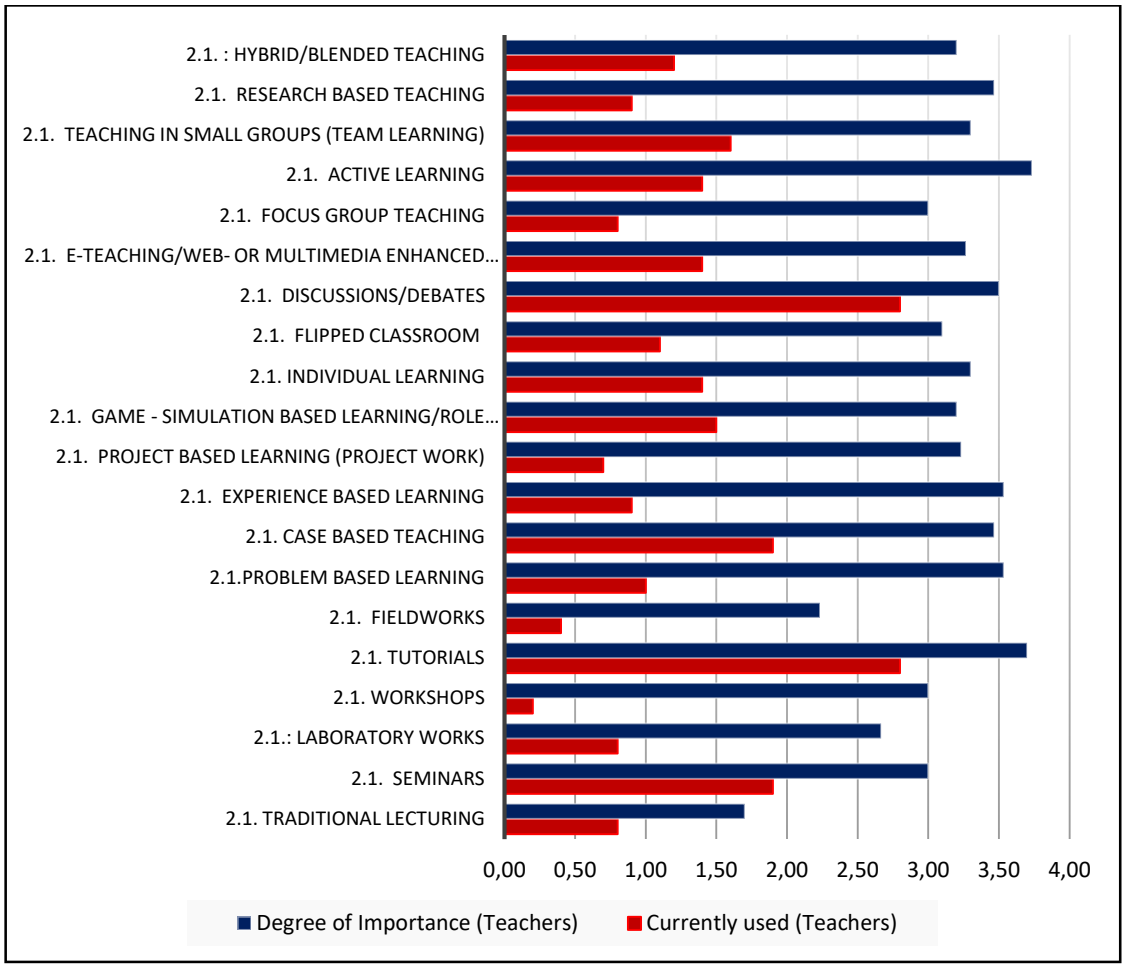


Section 2. Teaching Styles and Pedagogical Approaches

This sub-section focuses on the teaching methods and approaches used by the lecturers through which they convey their knowledge and skills to students by applying different teaching strategy to communicate, collaborate as well as to engage and support students. The aims of methods of investment or development cause the necessity of training.

The result of research revealed that the most commonly methods used by lectures are the following: Seminars, Tutorials, Case based teaching, Discussions/debates, Teaching in small groups (team learning) (Figure 2.1):

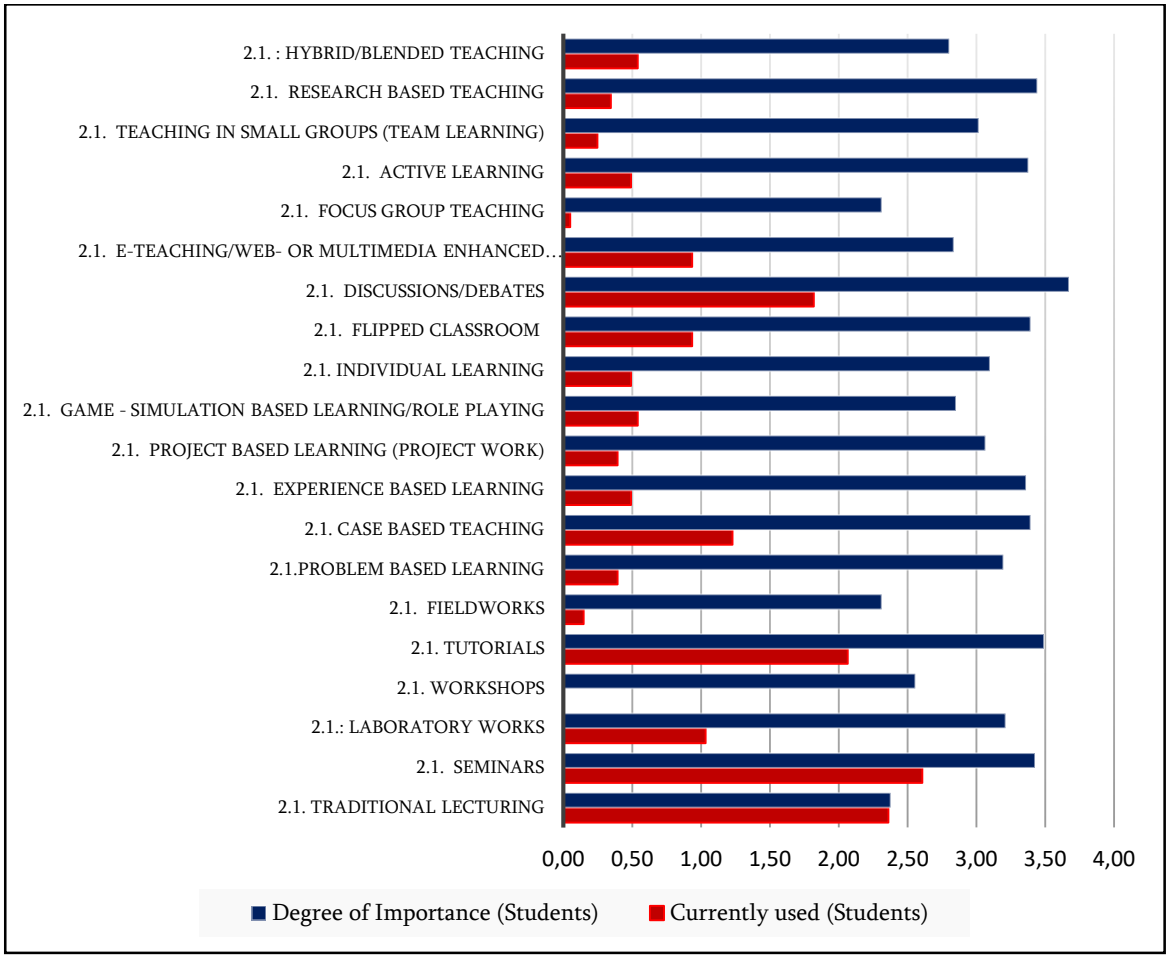
Figure 2.1. Teaching styles and pedagogical approaches (adapted from "Teaching staff professional development needs assessment" Survey)



In students' opinion, the *Traditional lecturing, Seminars, Tutorials, Discussions/debates* are the most commonly used teaching methods in the VSU.

Meanwhile, less frequent answers have been received from the student-based learning experience on “Case based teaching”, “Teaching in small groups” (team learning) methodology by the lecturers (Figure 2.2):

Figure 2.2. Teaching styles and approaches in class (adapted from “Student learning needs assessment” Survey)



´´ Please, rate your level of need for training in the teaching styles/approaches listed below from "No need" to "High need"´´and´´Please, rate your level of need in the teaching styles/approaches listed below from "No need" to "High need"´´questions have been applied, which revealed the stands of lectures and students. The results shown below in Figures 2.3-2.4 below.

Figure 2.3. The importance level of methods from the lectures viewpoint

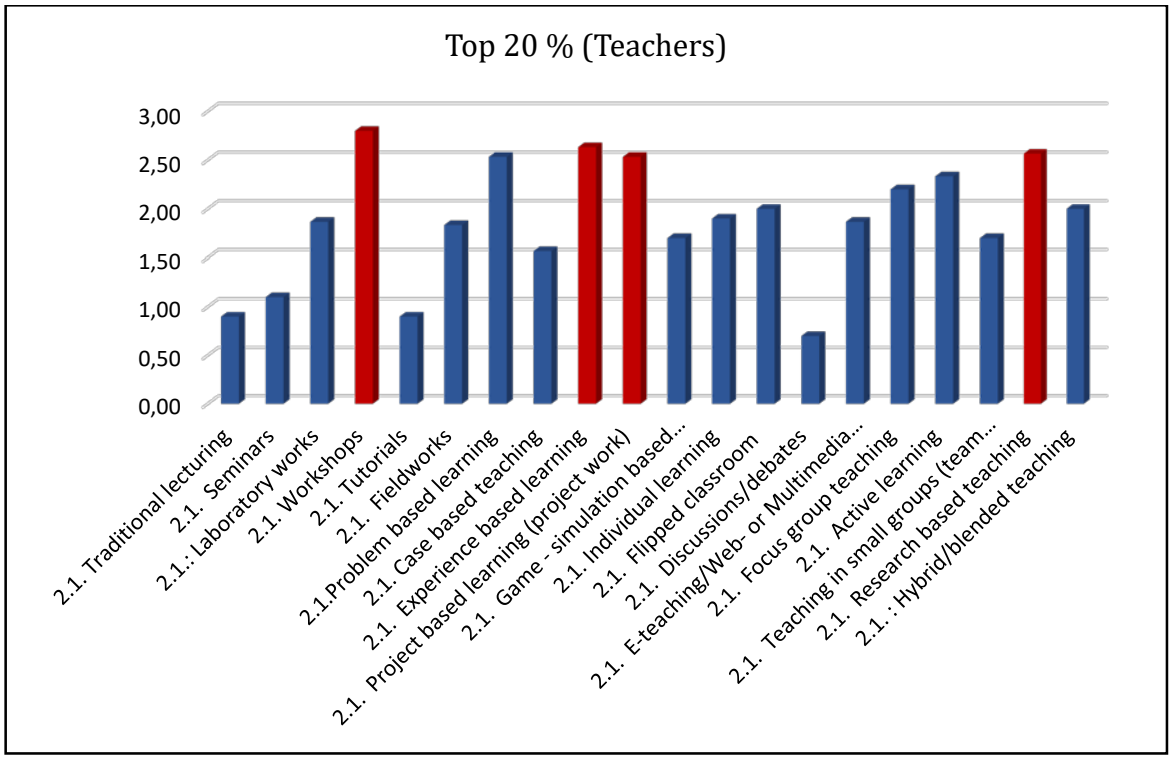
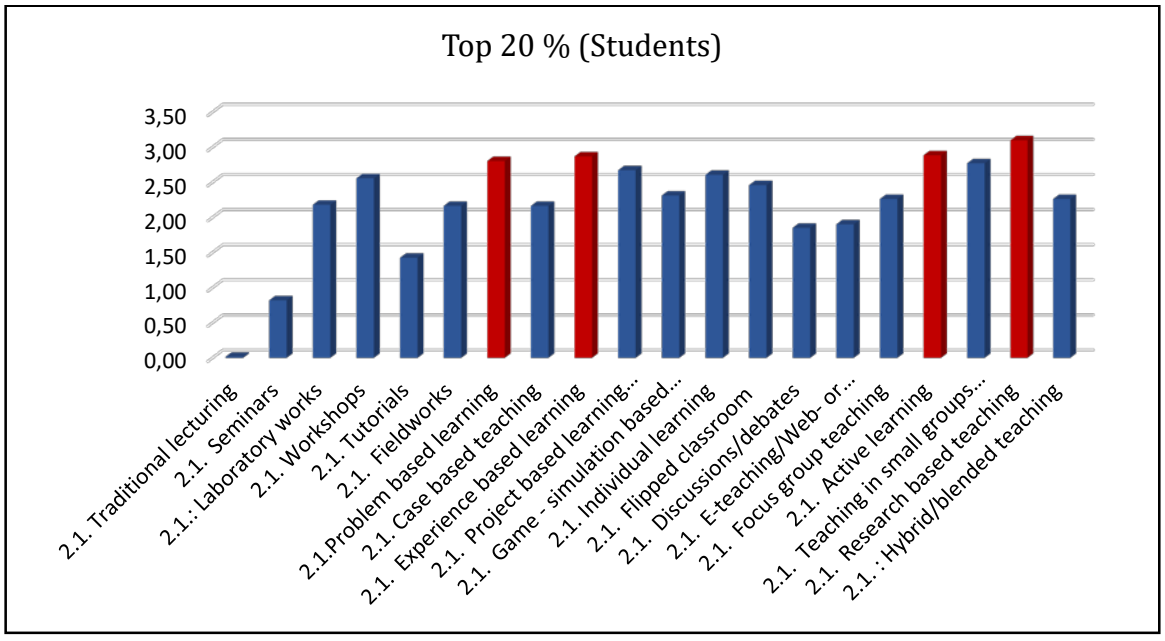
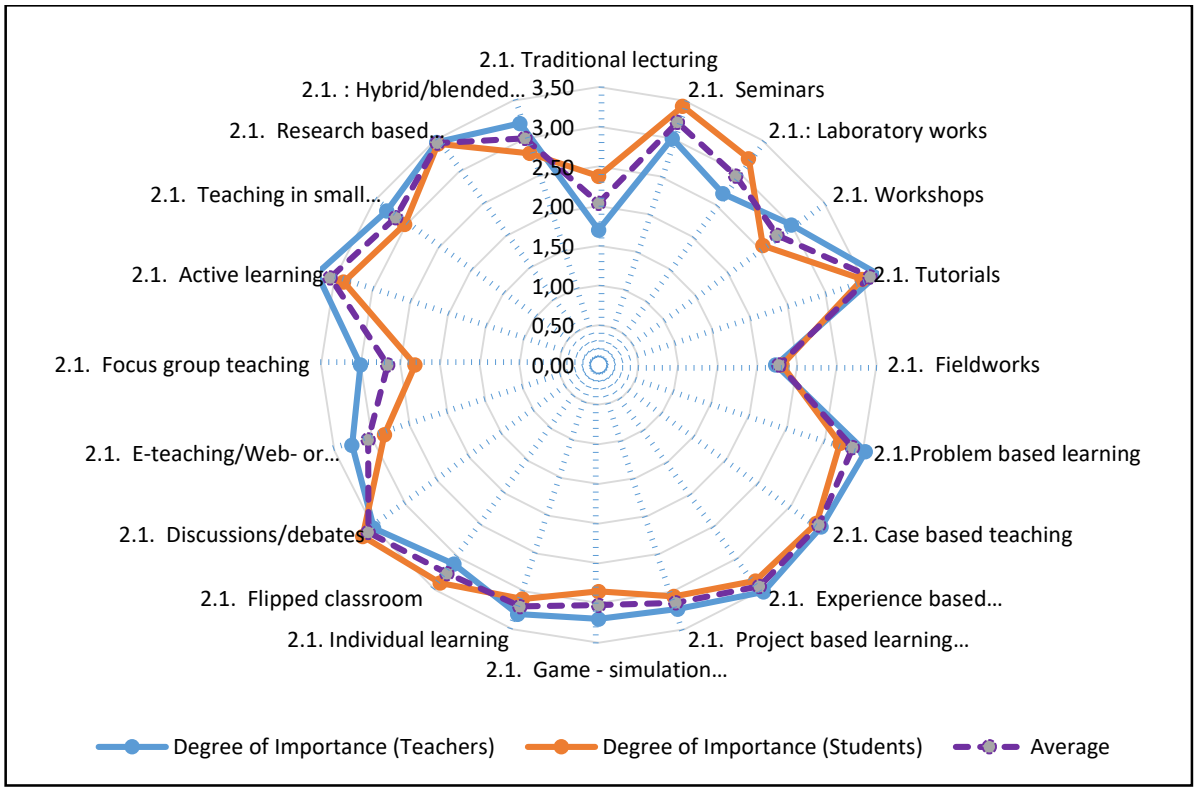


Figure 2.4.The importance level of methods from the students viewpoint



In combination with the results, it is possible to identify a group of methods in which there is a need for - training, development and implementation in the VSU (Figure 2.5).

Figure 2.5. Degree of importance of the teaching styles and appraches according to teachers *and students' feedback*



The necessity of almost all proposed methods was mentioned, with the exception of Traditional lecturing, Fieldworks, Focus group teaching methods.

The most commonly used methods are:

- Tutorials
- Case based teaching
- Problem based learning
- Experience based learning
- Discussions/debates
- Active learning
- Research based teaching

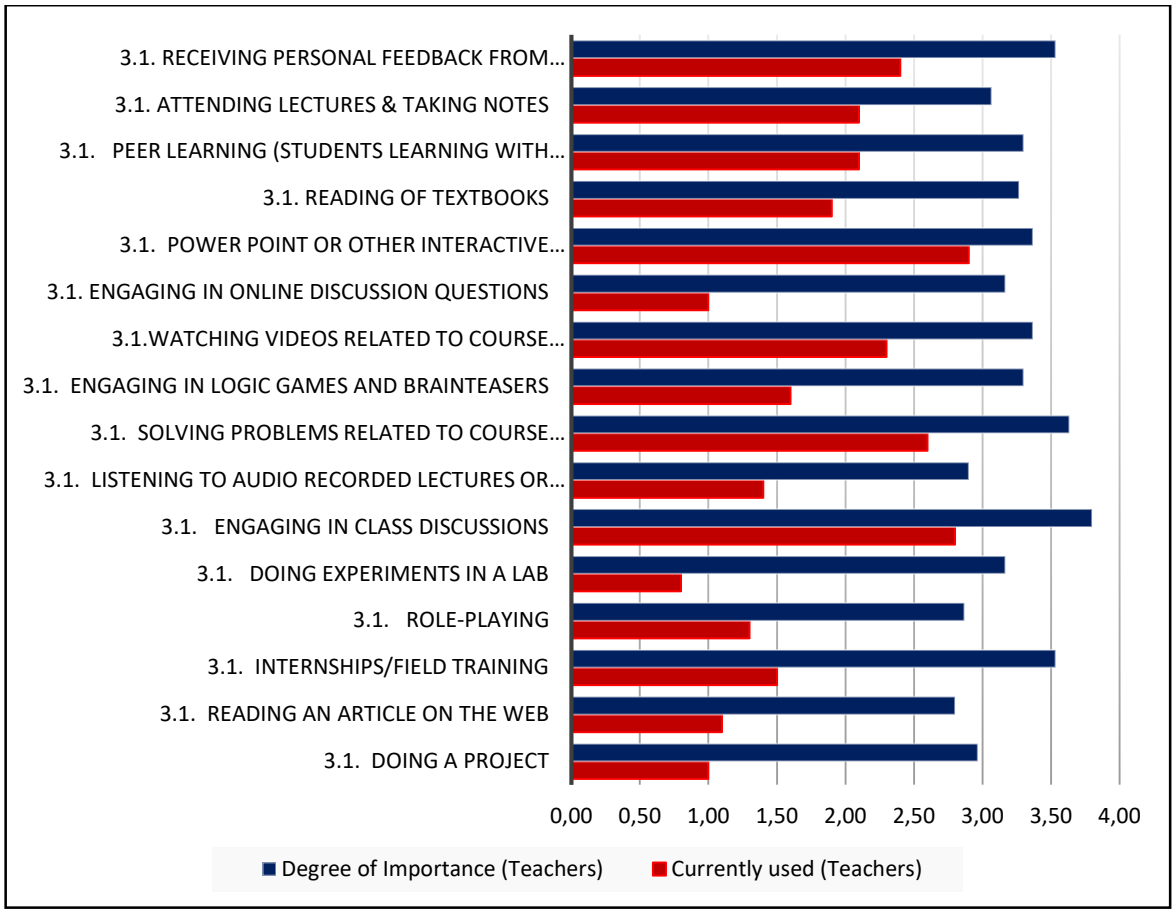
Section 3. Learning Styles and Approaches

This division are represented the most preferable ways and approaches of student by which one can comprehend, perceive, cultivate and remember the information.

Through ´´3.1. How do you learn now? Please select learning styles/approaches currently experienced by you´ questionnaire are studied currently used learning ways and approaches.

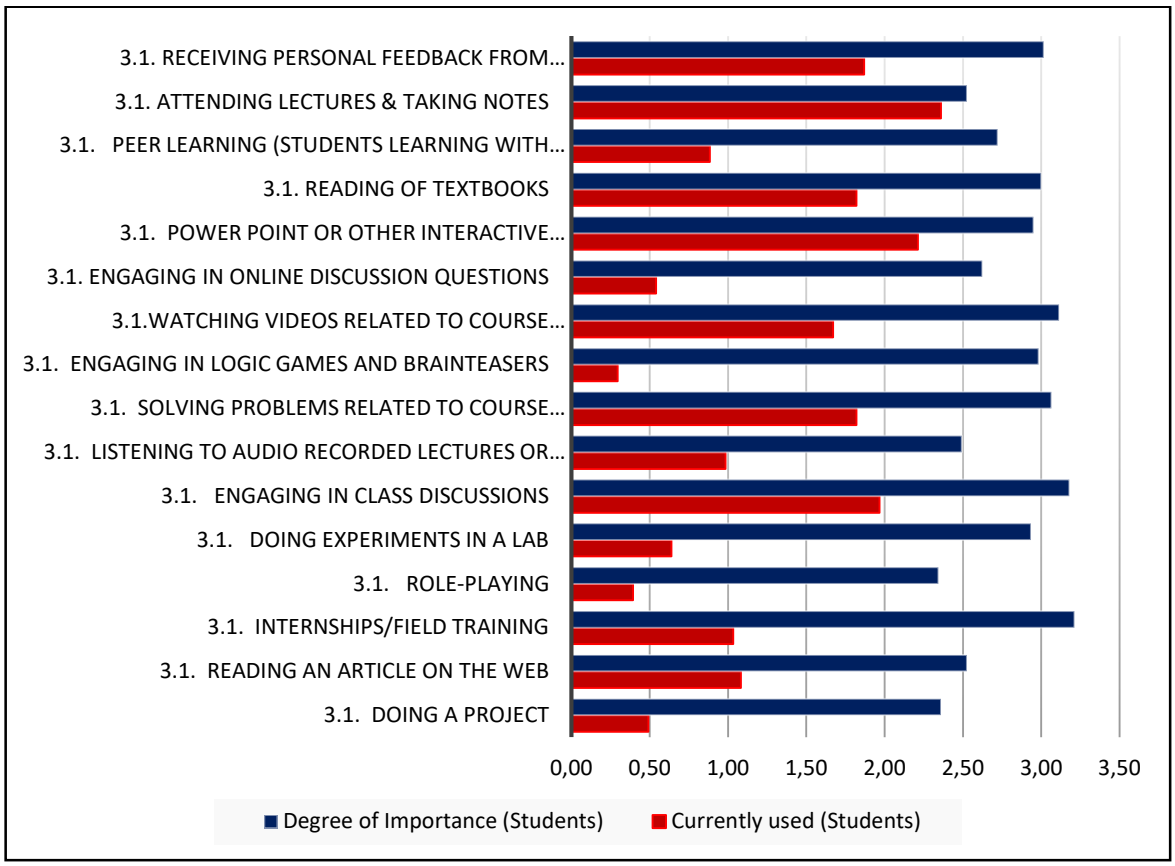
From the lectures viewpoint in the university the study ways and approaches used by students are as followings: Internships/field training, Engaging in class discussions, Solving problems related to course content, Engaging in logic games and Brainteasers, Watching videos related to course content, Power Point or other interactive presentations, Reading of textbooks, Peer learning (students learning with each other), Attending lectures & taking notes, Receiving personal feedback from teachers methods.(Figure 3.1):

Figure 3.1. Learning styles/approaches (adapted from "Teaching staff professional development needs assessment" Survey)



From the viewpoint of students are used: Engaging in class discussions, Solving problems related to course content, Watching videos related to course content, Power Point or other interactive presentations, Reading of textbooks, Attending lectures & taking notes, Receiving personal feedback from teachers study ways(Figure 3.2):

Figure 3.2.Learning styles/approaches (adapted from "Student learning needs assessment"Survey)



The level of effectiveness of the learning forms has been studied 3.2: How do you learn best? Please rate the learning styles / approaches which would enable you to learn effectively from "Not effective" to "Highly effective" question, the results of which are shown below in Figures 3.3-3.4

Percuant to the estimation of lecturesr it is highlighted the importance of learning ways such as "Internships / field training, Doing experiments in a lab, Engaging in online discussion" and according to students in addition to the first above mentioned two methods they highlighted "Engaging in logic games" and "Brainteasers" method.

Figure 3.3."Degree of importance" deducted from "current use" according to teachers.

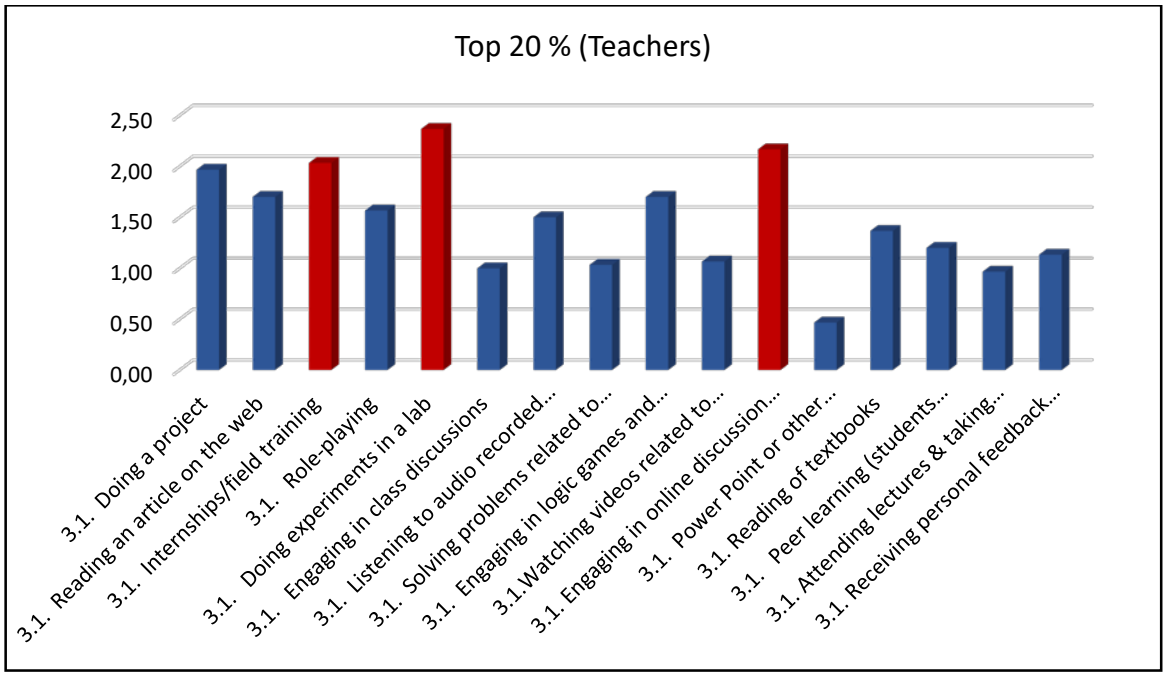
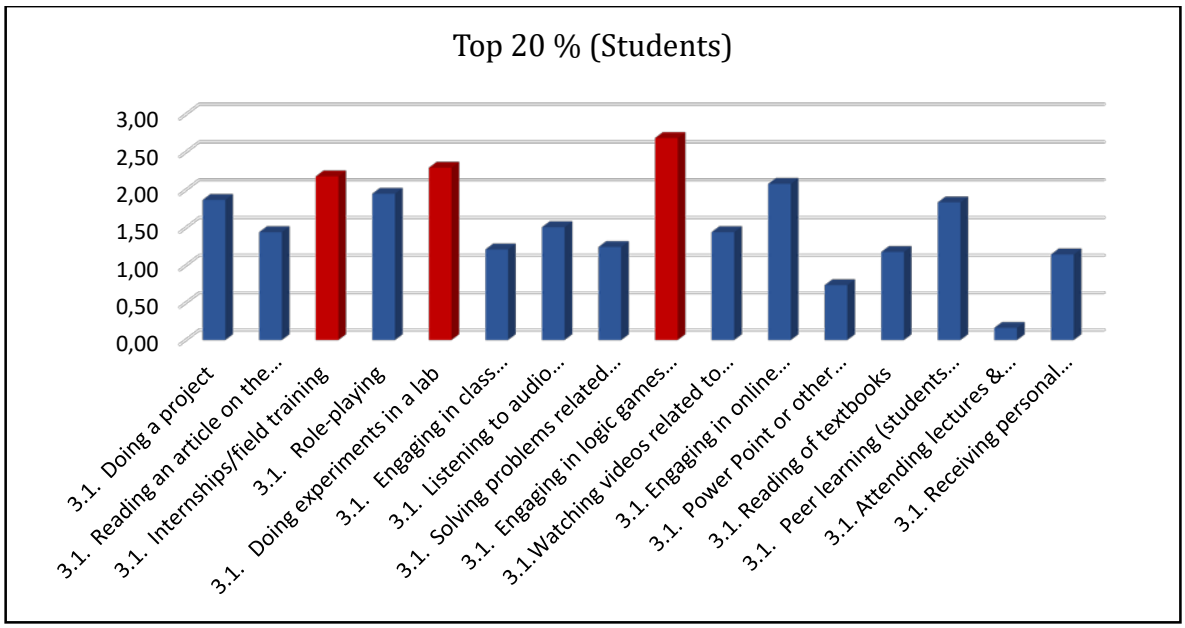
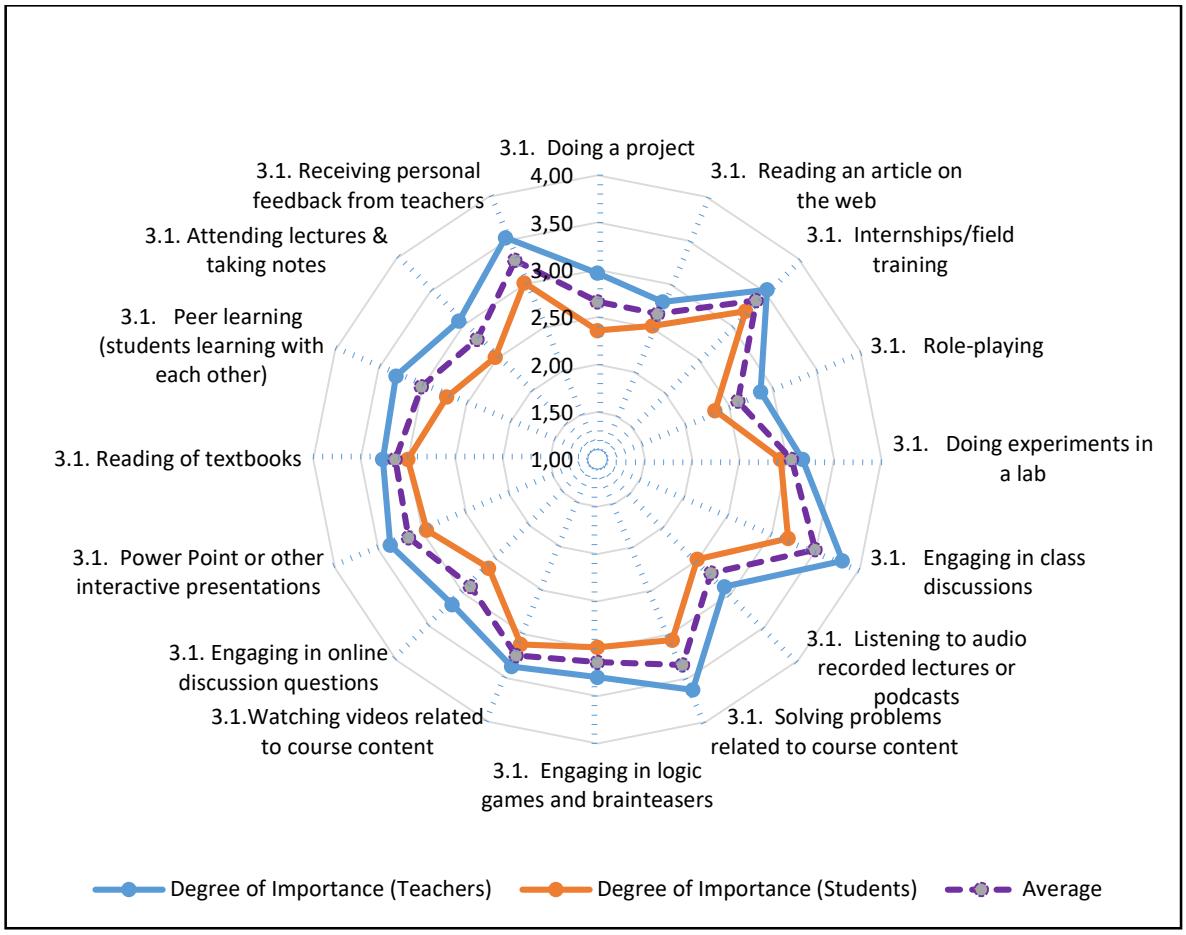


Figure 3.4."Degree of importance" deducted from "current use" according to students.



The combination of results has given an opportunity to reveal the forms of learning approaches in which the need for training, development, and investment is needed at the VSU (Figure 3.5):

Figure 3.5. Degree of importance of the learning styles/approachesaccording to lecturers and students'feedback



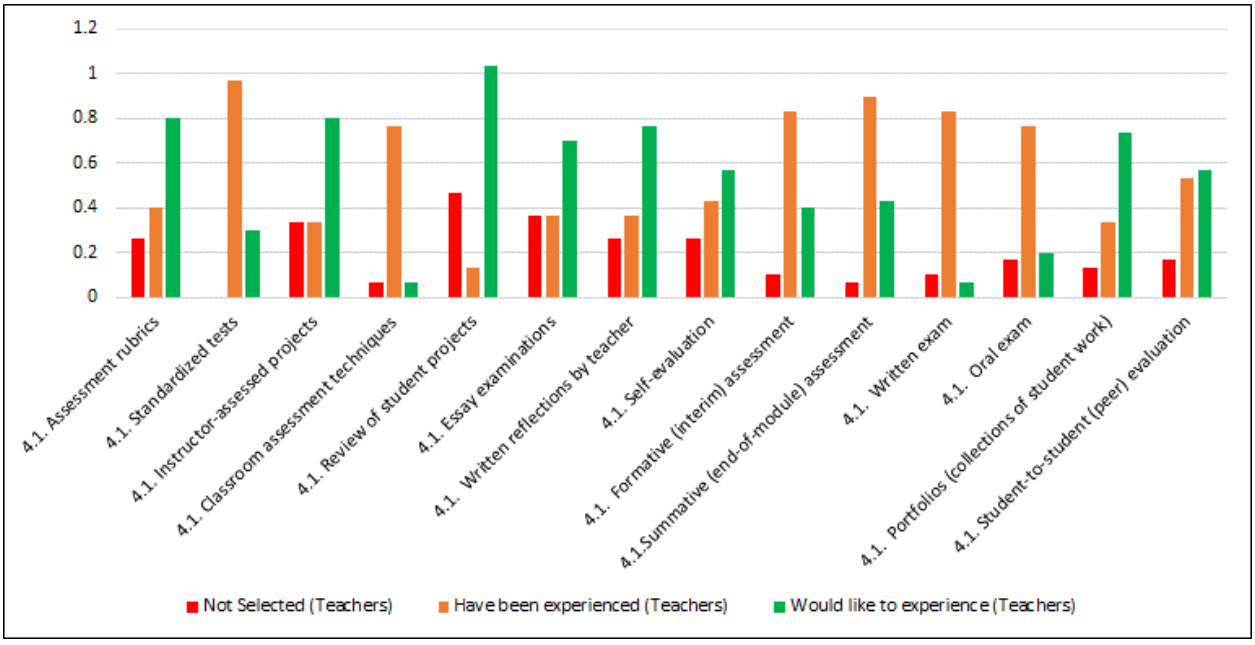
The averaged values of the results show that supportive approaches and ways of learning are considered as follows:

- Internships/field training
- Doing experiments in a lab
- Engaging in class discussions
- Solving problems related to a course content
- Engaging in logic games and brainteasers
- Watching videos related to course content
- Power Point or other interactive presentations
- Reading of textbooks
- Peer learning (students learning with each other)
- Attending lectures & taking notes

Section 4. Assessment Methods and Approaches

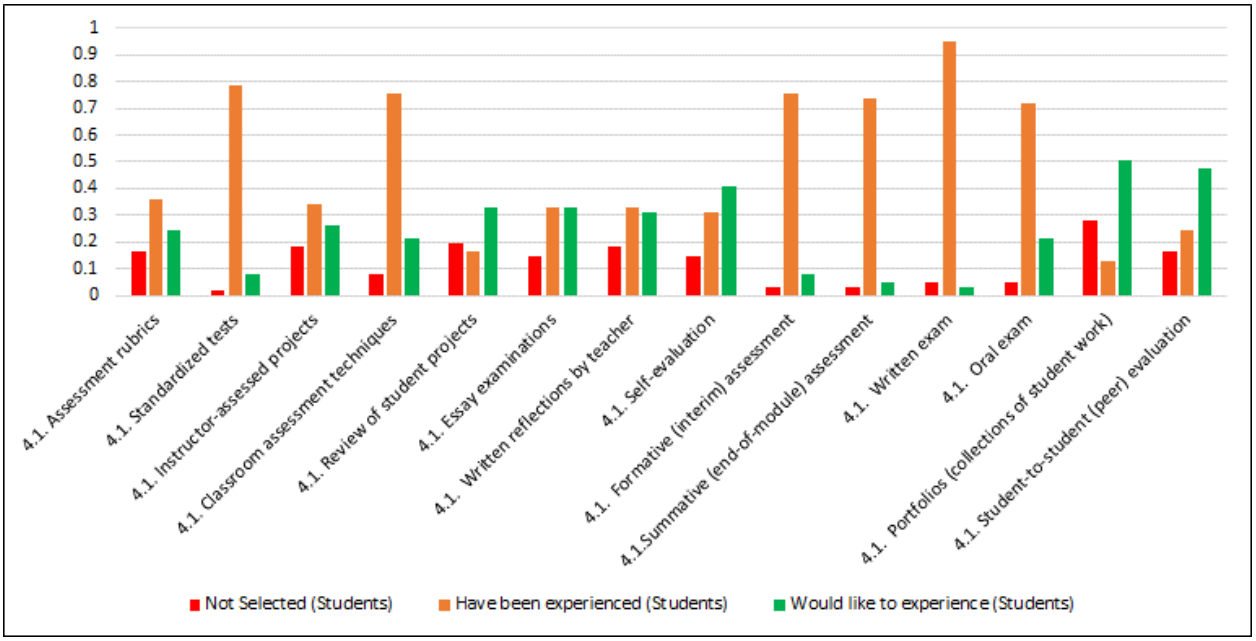
A study was conducted on the use of assessment techniques and tools, which is considered as a process of collecting and verifying data for evaluating student learning outcomes. Questions concerning the implementation the assessment methods were: "Have been experienced" and "Would like to experience"(''4.1. How do you assess your students? Please select the assessment methods/approaches which you used and the those you would like to use'', ''4.1. How are you assessed? Please select the assessment methods/approaches which you have been experienced and those you would like to experience''): The results almost coincide with the used methods (Figures 4.1-4.2): The most commonly used methods are: Standardized tests, Classroom assessment techniques, Formative (interim) assessment, Summative (end-of-module) assessment, Written exam, Oral exam: However, there is a noticeable difference in the opinions regarding the implementation of methods in the future. The teaching staff has more expressed motives for applying assessment methods and approaches. They have chosen the previously less used or unused methods: Assessment rubrics, Instructor-assessed projects, Review of student projects, Essay examinations, Written reflections by teacher, Portfolios (collections of student work):

Figures 4.1. Assessment methods and approaches by lectures (adapted from "Teaching staff professional development needs assessment" Survey)



Students are passive enough to express their position towards the question "Would like to experience". Students are more orientated towards Portfolios (collections of student work), Student-to-student (peer) evaluation of assessment methods.

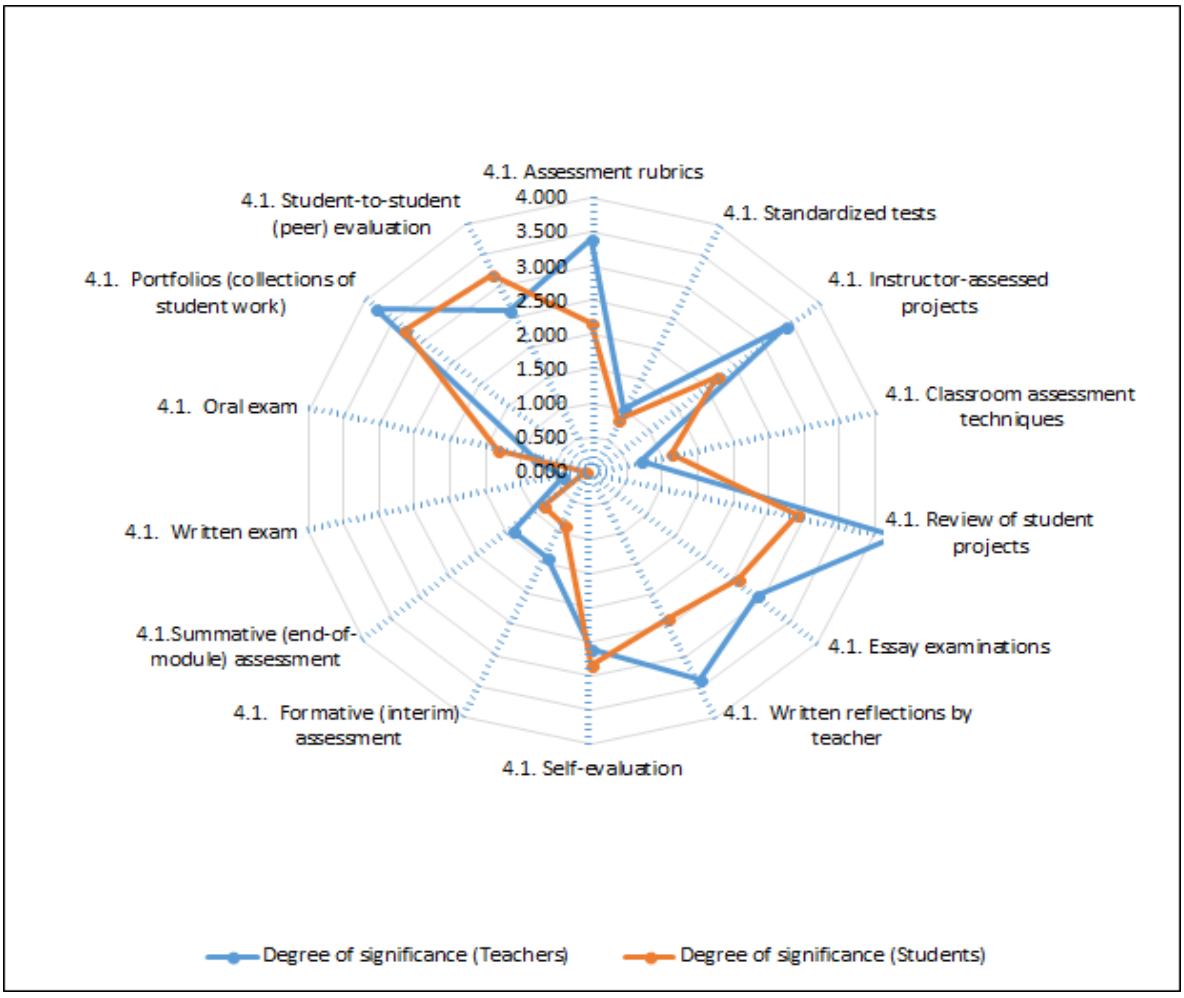
Figures4.2.Assessment Methods and Approaches by Students (adapted from "Student learning needs assessment" Survey)



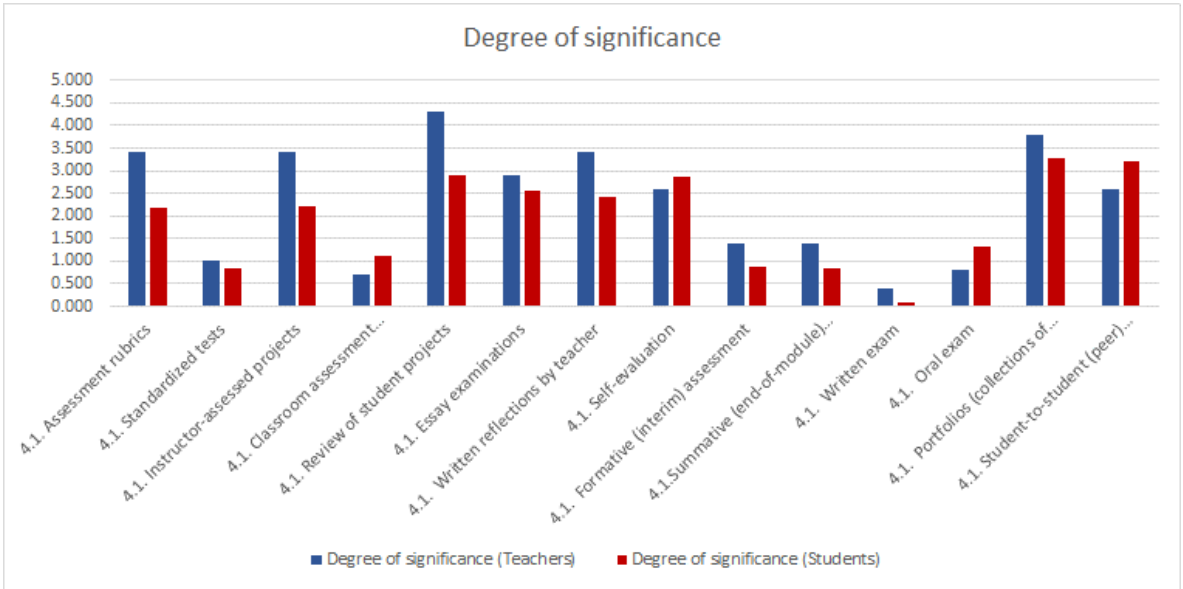
Combining the opinions of students and lecturers from the point of view of the importance of evaluation methods, one can conclude that there is a wish to apply the following toolsin the future:

- Assessment rubrics
- Instructor-assessed projects
- Review of student projects
- Essay examinations
- Written reflections by teacher
- Self-evaluation
- Portfolios (collections of student work)
- Student-to-student (peer)

Figures 4.3. The degree of importance of the assessment methods/approaches according to lecturers and students' feedback.



Figures 4.4. "Degree of importance" deducted from "current use" according to teachers and students.



Section 5. Use of Technology, E-teaching/Learning and Social Media for Teaching and Support of Learning

Resources supporting teaching and learning processes are technological and digital tools, the use of which contributes to the improvement of teaching, the expansion of the e-learning experience, and the formation of students' learning and modern skills outside the classroom.

According to lectures staff, it is mainly used "Learning management systems" (Google for education/Microsoft Office 365/ Moodle /Blackboard etc.) to learning process (Figure 5.1):

This opinion mostly coincides with the students' opinions (Figure 5.2). The lecturers also mentioned the use of Interactive whiteboards / smartboards, Classroom response systems, and multimedia tools, of course with less frequency.

Figure 5.1.The use of technology means by lectures (adapted from "Teaching staff professional development needs assessment" Survey)

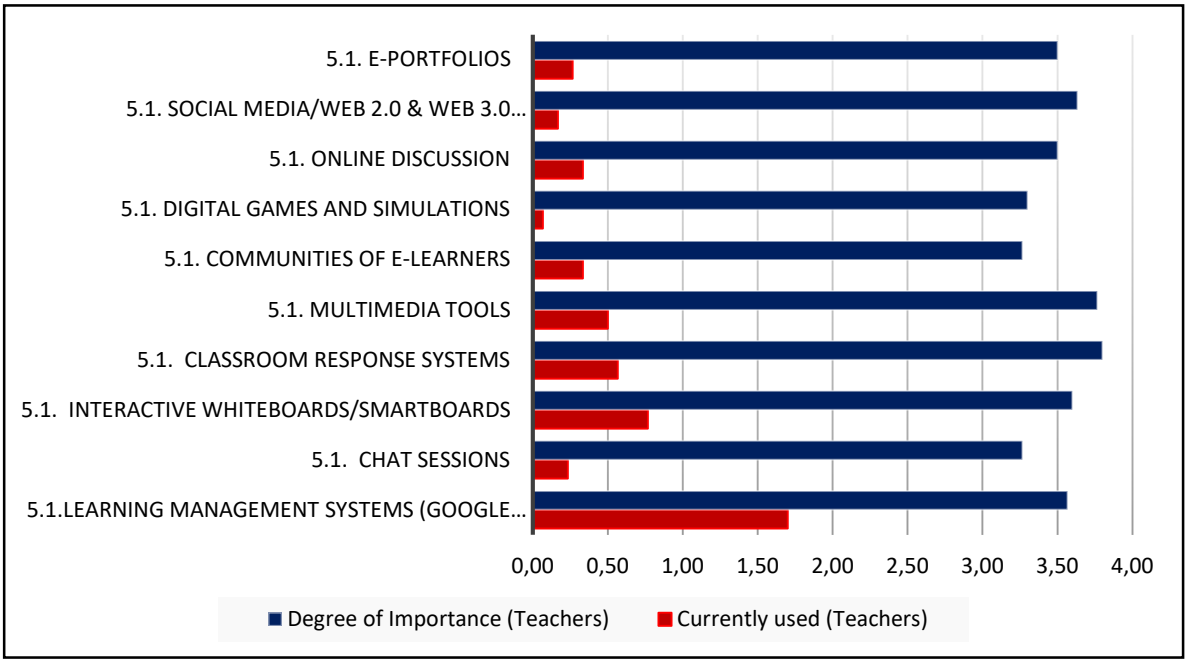
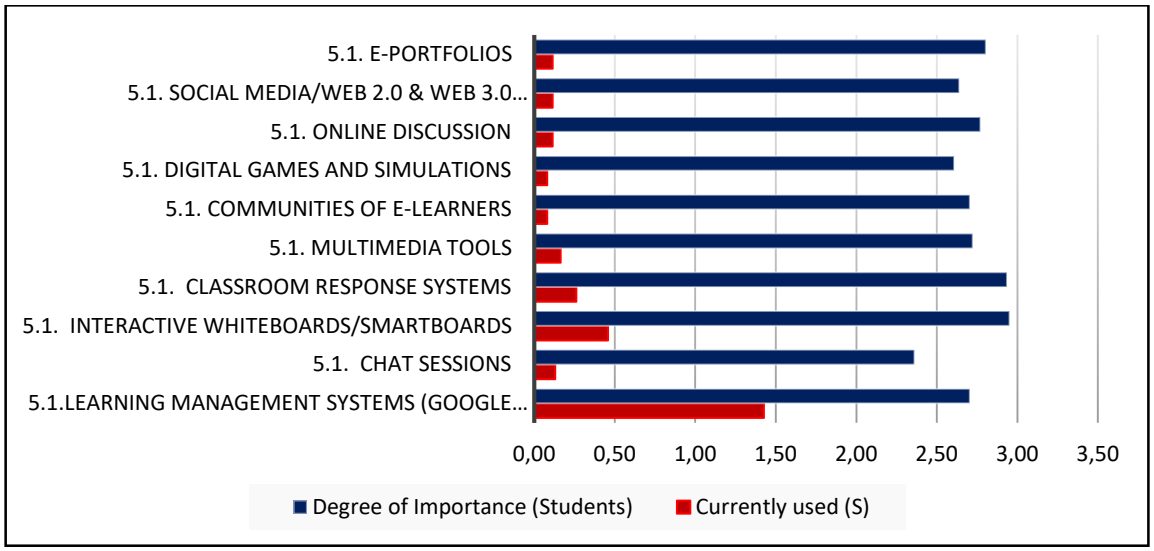


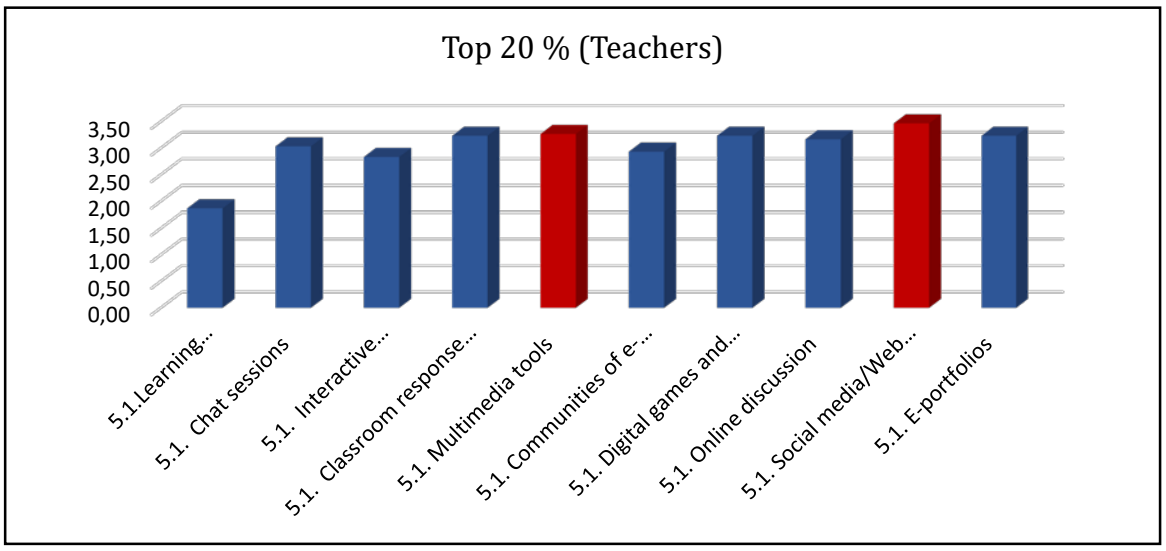
Figure 5.2 The use of technology means by students (adapted from "Student learning needs assessment" Survey)



During the process of teaching and learning within the framework of the implementation of technological and digital tools of training needs carried out with via´´5.2. Please rate the forms of technology which would support your learning best from "Not effective" to "Highly effective"´´questions.

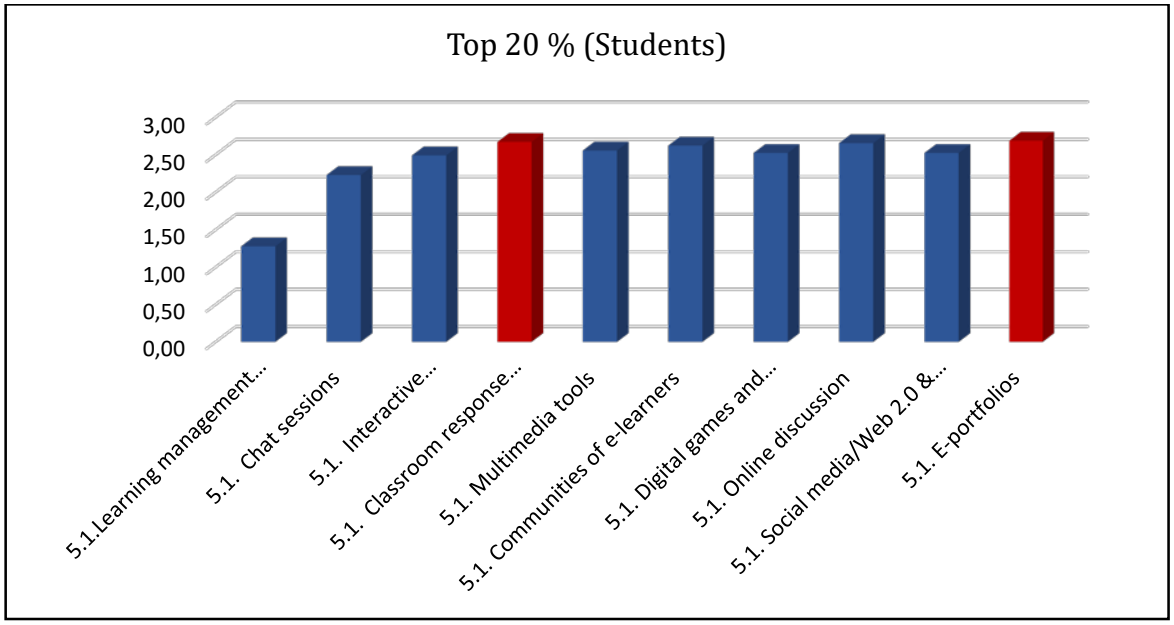
The lecturers gives their importance for : Multimedia tools, Social Media / Web 2.0 & Web 3.0 technologies, but, of course, there is some attitude toward Chat sessions, Classroom response systems, Digital games and simulations, Online discussion, E-portfolios methods (Figure 5.3).

Figure 5.3. "Level of importance" deducted from "current use" according to lecturers.



The feedback from the students testifies the need of application "Classroom response systems", "E-portfolios", methods without ignoring the role of multimedia tools, "Communities of e-learners", "Digital games and simulations" "Online discussion" methods (Figure 5.4).

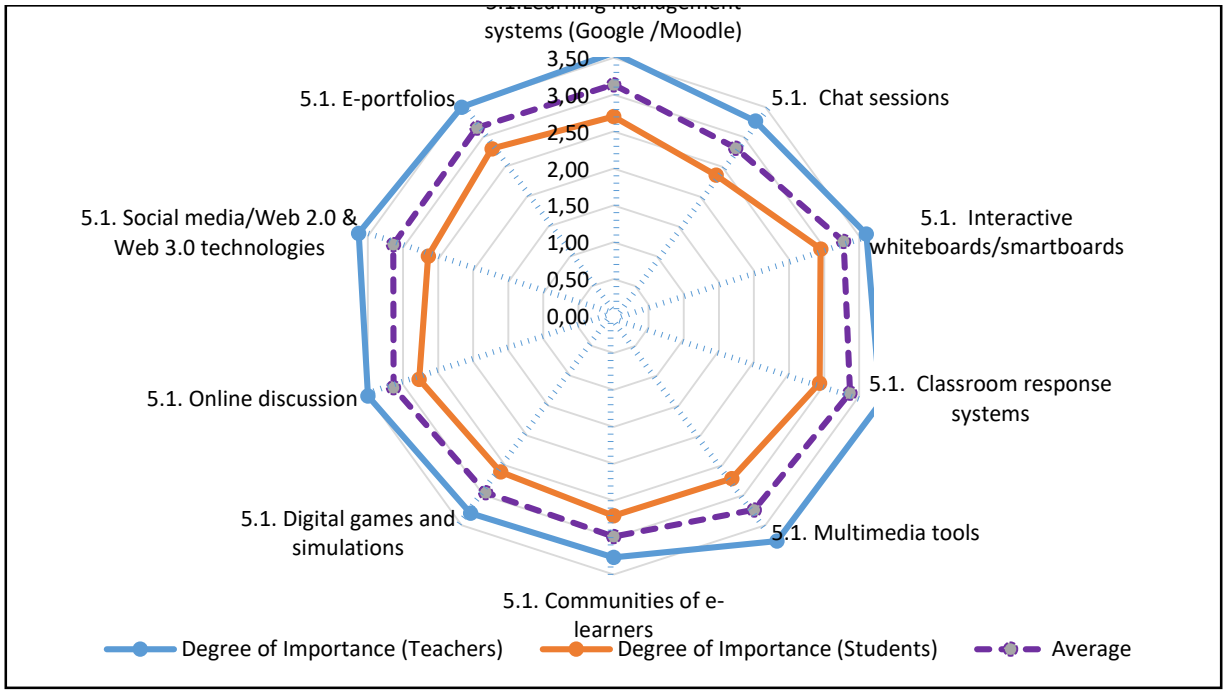
Figure 5.4. "Level of importance" deducted from "current use" according to students.



	Top 20 % (Teachers)	Top 20 %(Students)
5.1.Learning management systems (Google /Moodle)	1.87	1.28
5.1. Chat sessions	3.03	2.23
5.1. Interactive whiteboards/smartboards	2.83	2.49
5.1. Classroom response systems	3.23	2.67
5.1. Multimedia tools	3.27	2.56
5.1. Communities of e-learners	2.93	2.62
5.1. Digital games and simulations	3.23	2.52
5.1. Online discussion	3.17	2.66
5.1. Social media/Web 2.0 & Web 3.0 technologies	3.47	2.52
5.1. E-portfolios	3.23	2.69

Both, lecturers and students emphasized the importance of trainings in all types of technological and digital tools. Certainly, the teaching staff in this direction is more focused on achieving a thoroughly developed and qualitative outcome of students' academic achievements (Figure 5.5).

Figure 5.5. Degree of importance of the forms of technology according to lecturer and students'feedback



Section 6. Facilities to Support Teaching and Learning

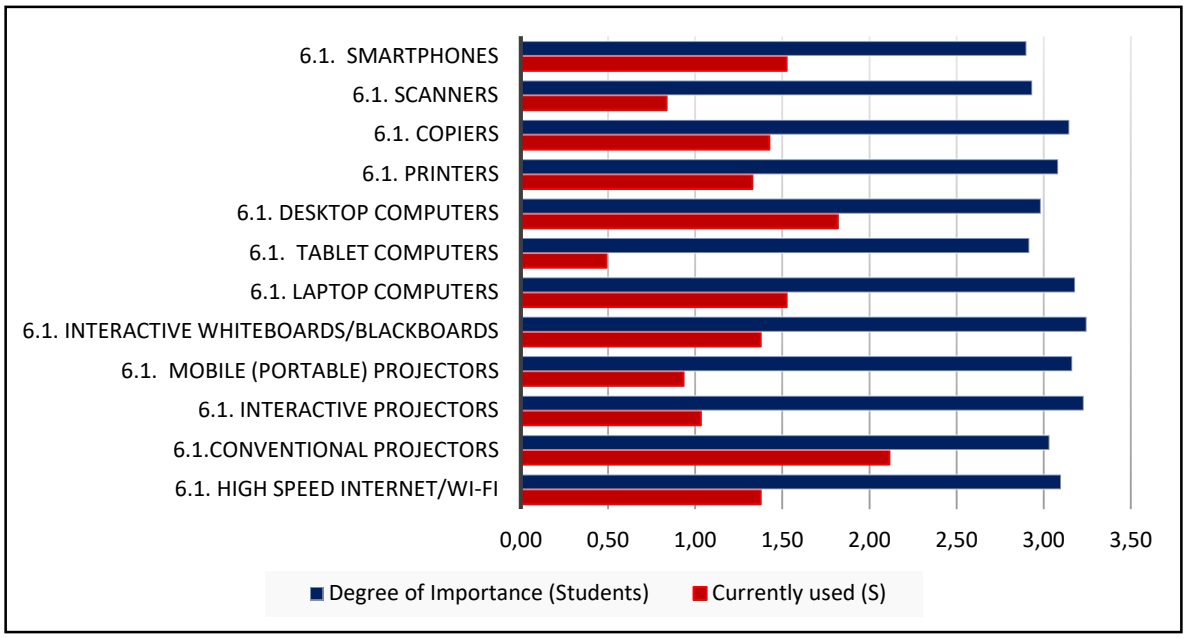
The need for the availability of media, equipment and electronic networks has been studied in the VSU for the use of the above- mentioned technological and digital tools in the educational process.

According to the lecturers, the most commonly used tools are Conventional projectors, Interactive projectors, Interactive whiteboards, Desktop computers, Printers, Laptop computers, Smart phones (Figure 6.1).

Figure6.1. Applied Technological means by Lecturers *(adapted from "Teaching staff professional development needs assessment" Survey)*

Students' opinions are coincide with the opinion of the lecturers, but the most emphasized are the use of Conventional projectors, Desktop computers, Laptop computers and Smart phones (Figure 6.2).

Figure 6.2 Applied Technological means by Students (adapted from "Student learning needs assessment" Survey)



The results are quite remarkable and the results of both surveys highlighted the role of Mobile (portable) projectors and Tablet computers (Figures 6.3-6.4).

Figure 6.3. "Level of importance" deducted from "current use" according to teachers.

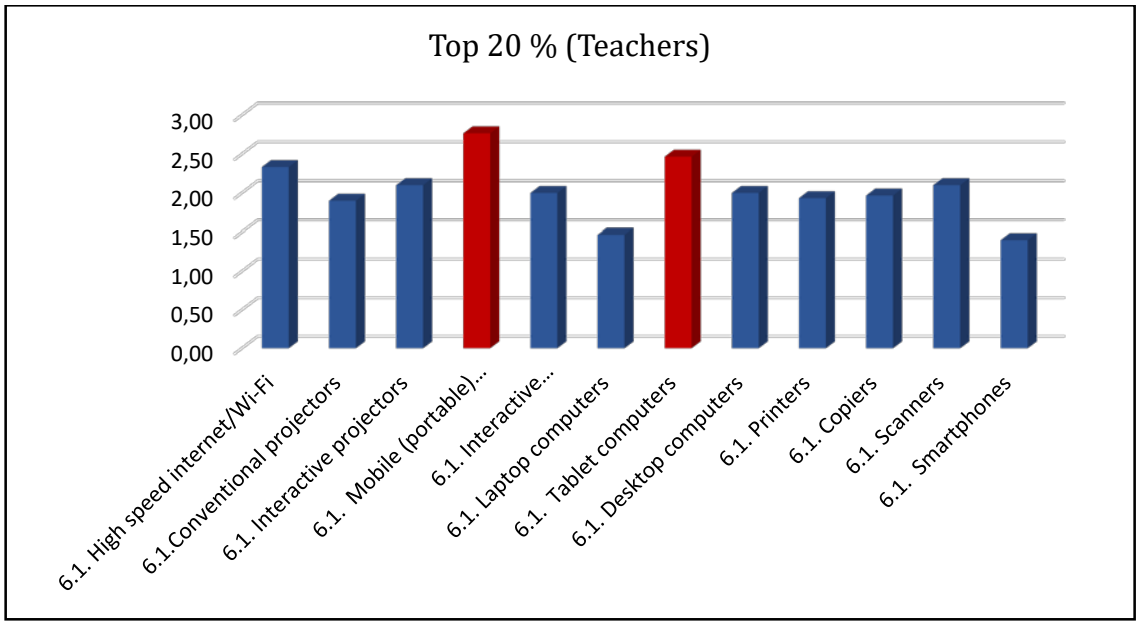
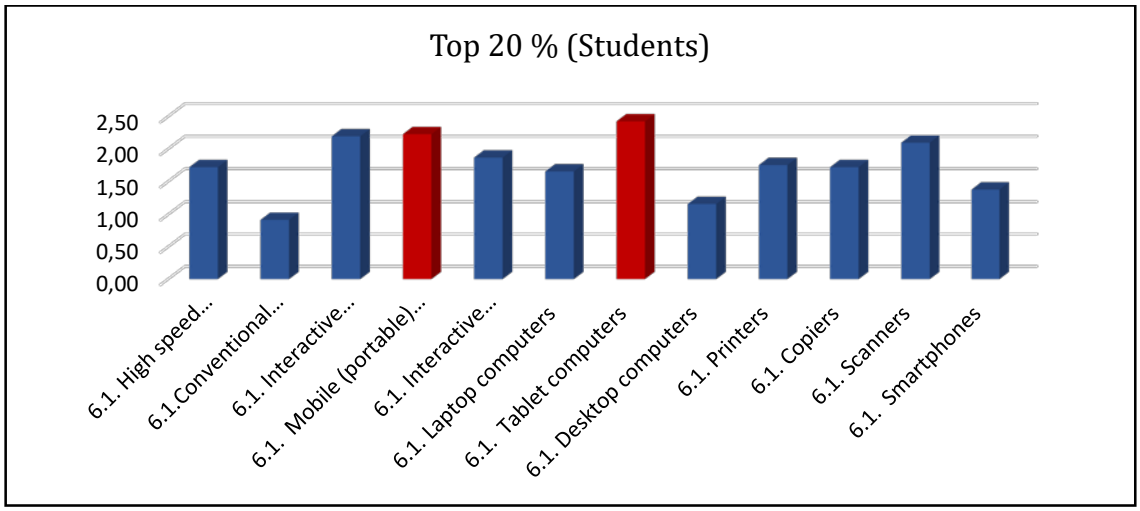
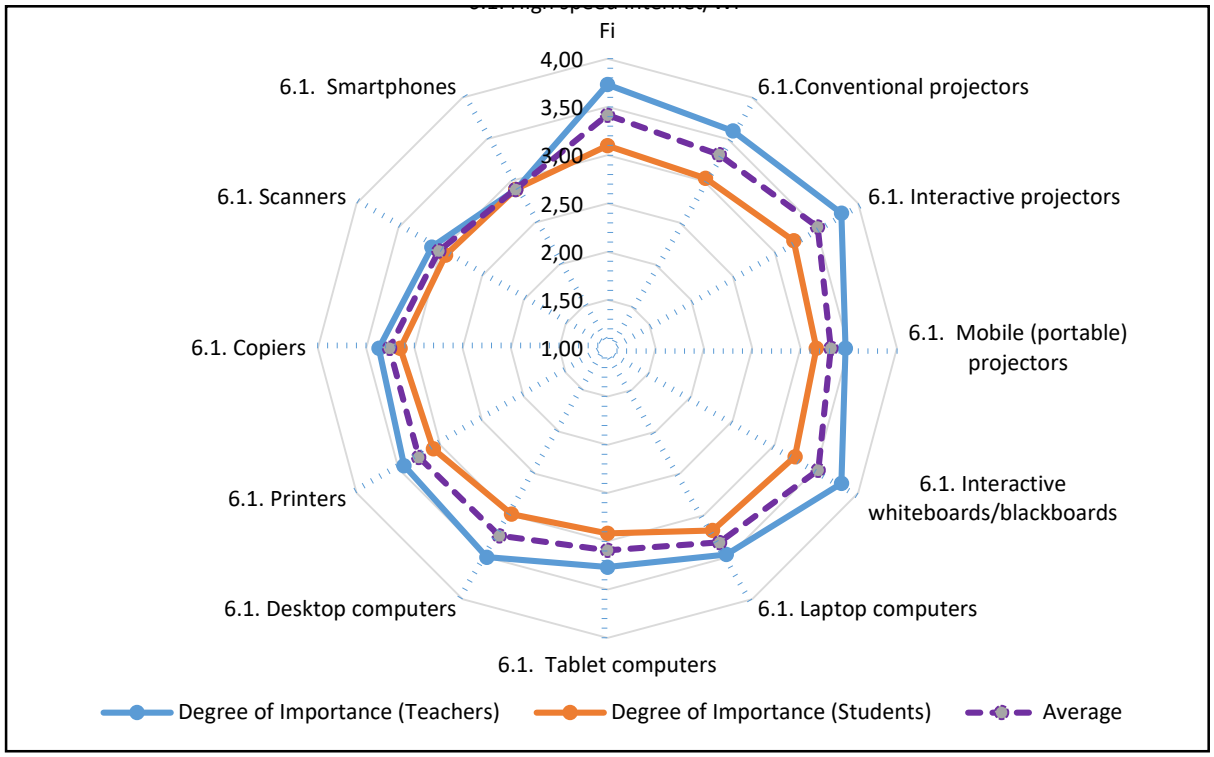


Figure 6.4. "Degree of importance" deducted from "current use" according to students.



Combining the opinions of students and lecturers, it can be noted that the importance of the use of all technical means are emphasized (all are in a range of) (Figure 6.5):

Figure 6.5.Level of importance of the facilities according to teachers and students' feedback



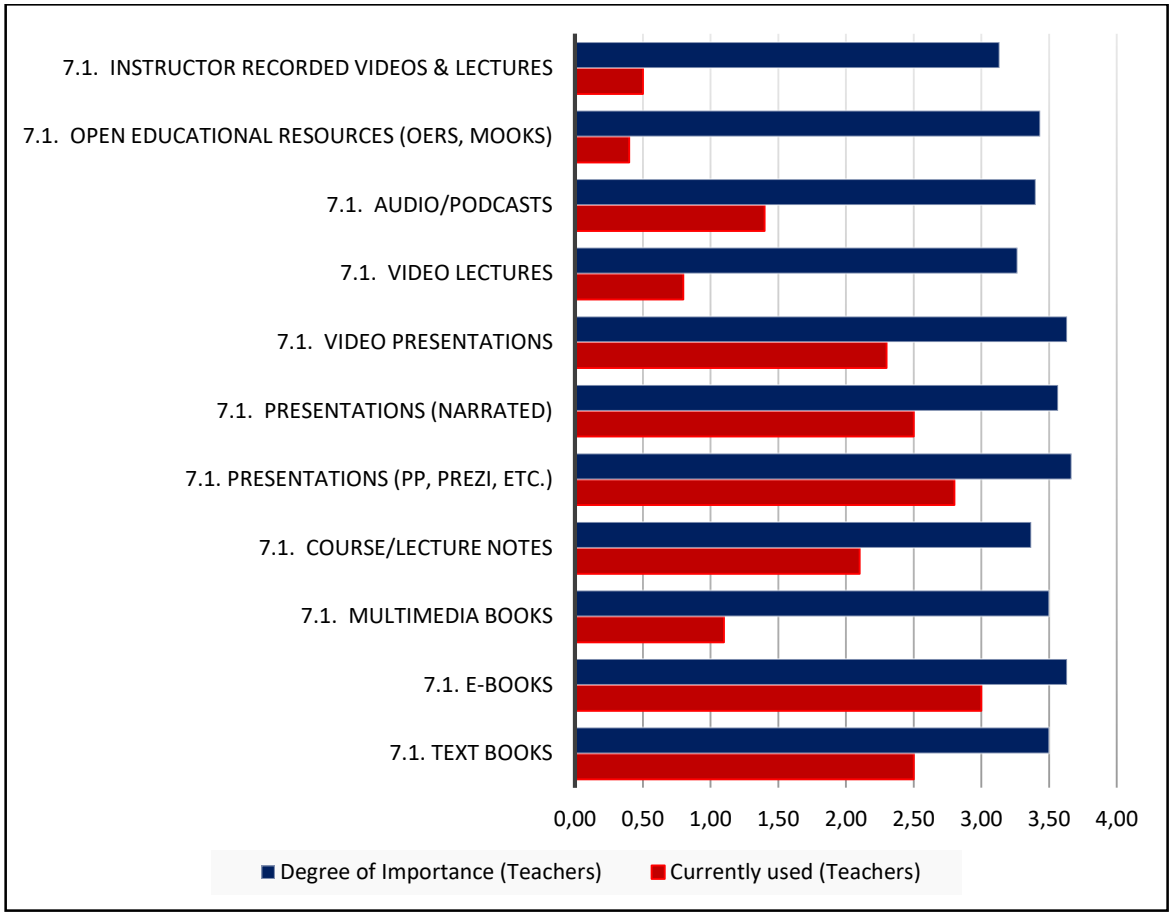
However, from the point of view of supporting the process and increasing the effectiveness of learning and teaching are more expressed by the importance of below mentioned:

- High speed internet/Wi-Fi,
- Conventional projectors,
- Interactive projectors,
- Mobile (portable) projectors,
- Interactive whiteboards/blackboards,
- Laptop computers,
- Desktop computers importance:

Section 7. Teaching and Learning Materials

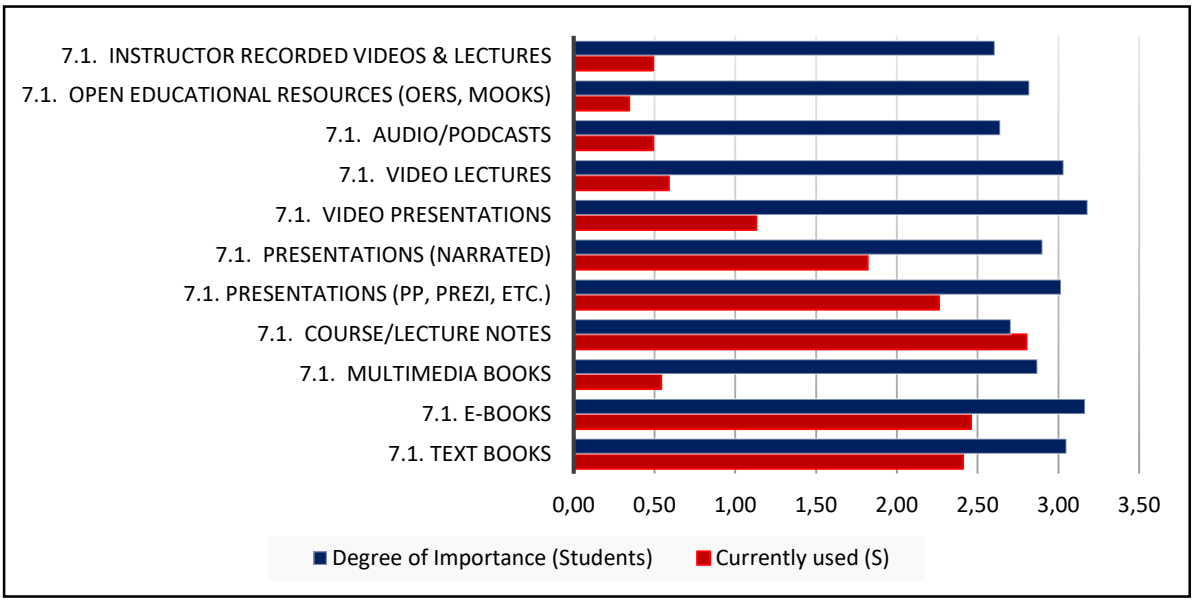
In this section it is appreciated the implementation of effectiveness of printed and electronic materials during the educational and teaching processes. During the course of its work the lecturers staff considered "Text books, E-books, Course/lecture notes, Presentations (PP, Prezi, etc.), Presentations (narrated), Video presentations" more practical ways (Figure7.1):

Figure 7.1. The use of print and electronic materials by lectures (adapted from "Teaching staff professional development needs assessment" Survey)



Besides, from the perspective of students, the same means are more applicable, "Video presentations" (Figure 7.2).

Figure7.2. The use of printed and electronic materials by students (adapted from "Student learning needs assessment" Survey)



The attitude of lecturers and students to the assessment of the effectiveness of teaching and learning materials varies. Lecturer highlights the "Open educational resources" (OERs, MOOKs), "Instructor recorded videos & lectures" methods (Figure7.3), but students find out that "Open educational resources" (OERs, MOOKs) as important as "Video lectures" (Figure 7.4):

Figure 5.3. "Degree of importance" deducted from "current use" according to lectures

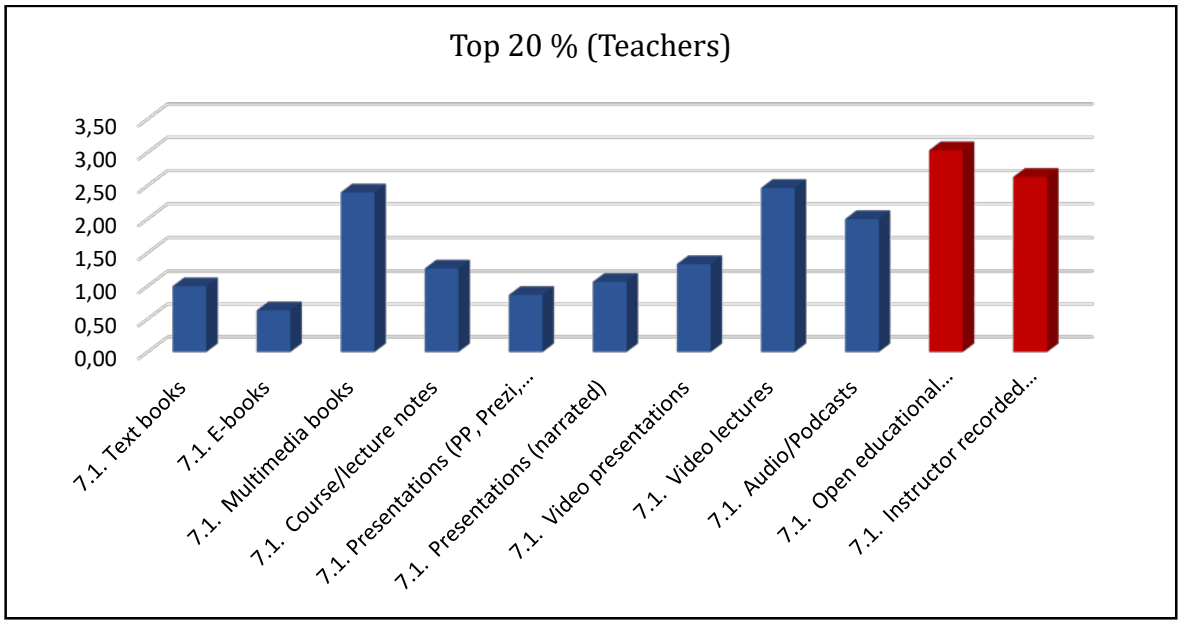
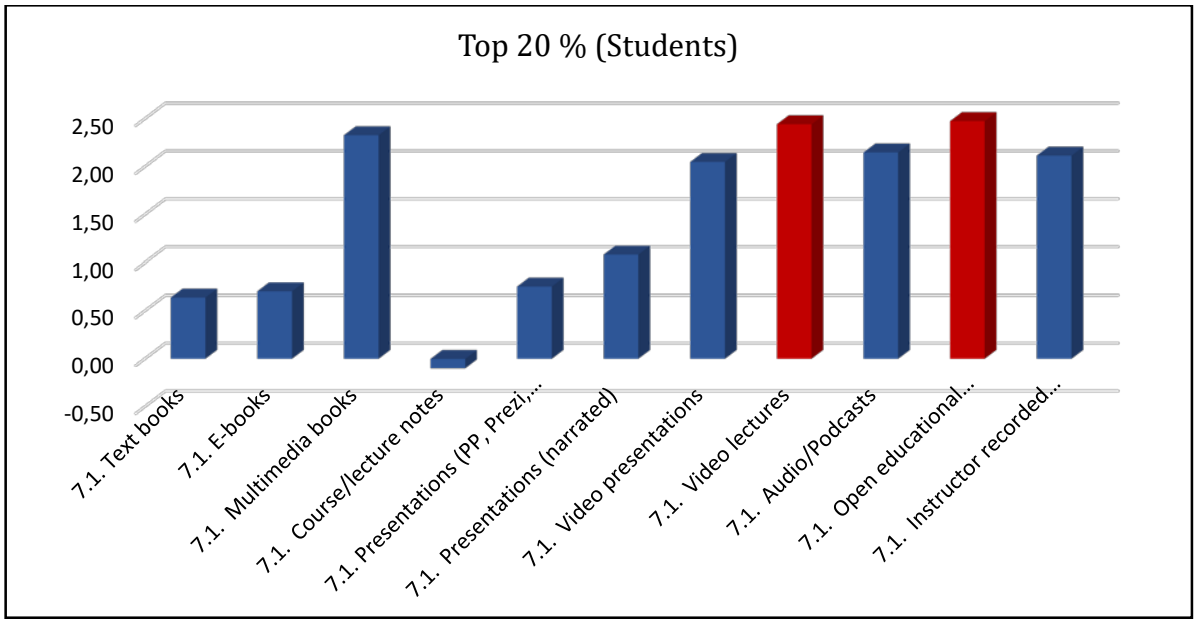


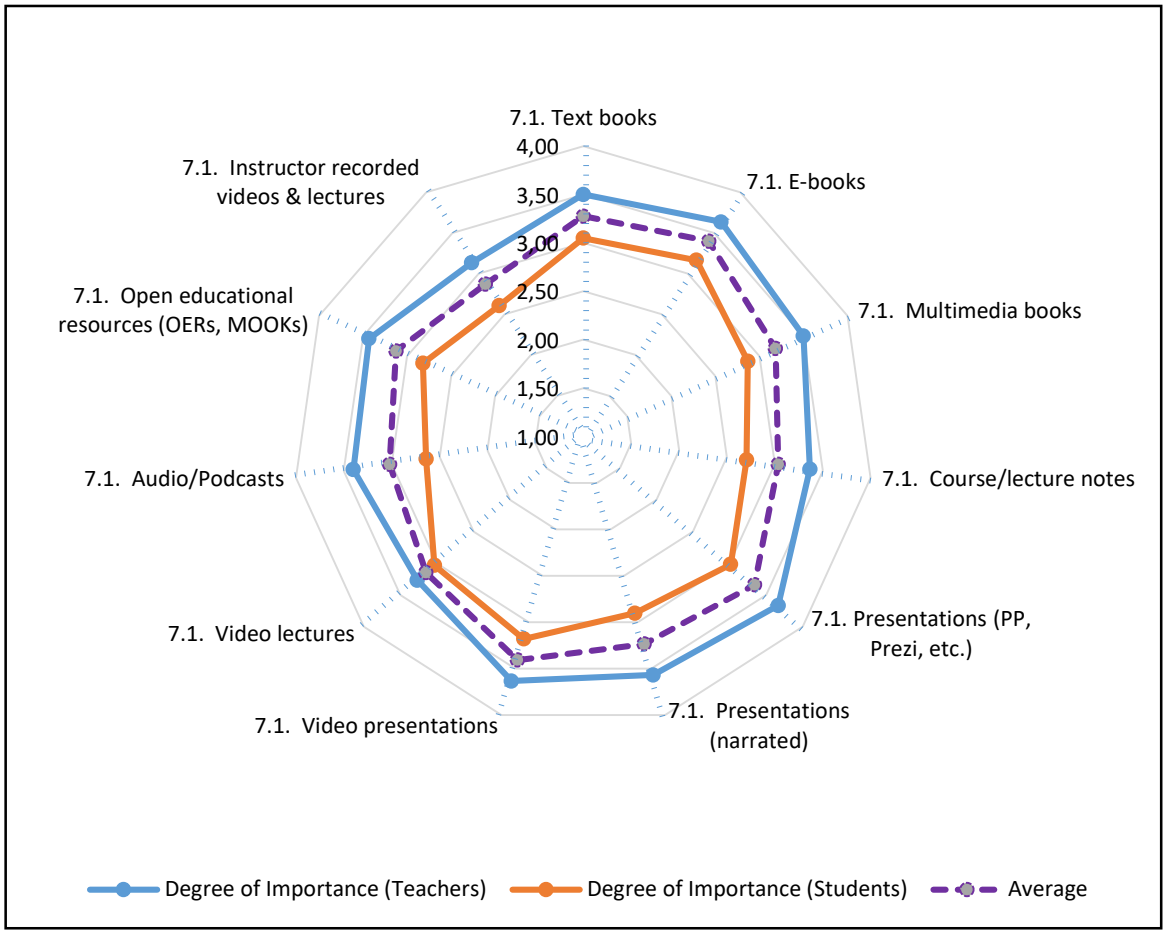
Figure 5.4. "Degree of importance" deducted from "current use" according to students.



	Top 20 % (Teachers)	Top 20 %(Students)
7.1. Text books	1.00	0.64
7.1. E-books	0.63	0.70
7.1. Multimedia books	2.40	2.33
7.1. Course/lecture notes	1.27	-0.10
7.1. Presentations (PP, Prezi, etc.)	0.87	0.75
7.1. Presentations (narrated)	1.07	1.08
7.1. Video presentations	1.33	2.05
7.1. Video lectures	2.47	2.44
7.1. Audio/Podcasts	2.00	2.15
7.1. Open educational resources (OERs, MOOKs)	3.03	2.48
7.1. Instructor recorded videos & lectures	2.63	2.11

The comparison of the opinions of students and lecturers shows that the *lectures* staff gives his importance to the role of supporting teaching and learning materials.

Figure7.5. Degree of importance of the teaching materials according to lectures and students'feedback



Although some materials are used by them, they highlight the importance of:

- Multimedia books
- Video lectures
- Audio/Podcasts
- Open educational resources (OERs, MOOKs).

Section 8. Additional Information Given by Teachers and Students

In this section, students and lecturers have been given the opportunity to present their thoughts, suggestions, ideas about how to organize training, apply methods, combine technical means, switch from theoretical to collaborative methods, improve assessment techniques, re-equipped laboratories etc.

Conclusions and Recommendations

Summarizing the results of the analysis, the main outcomes are represented in the sections 2-7, " Teaching staff professional development needs assessment" and "Student learning needs assessment" were implemented within the ERASMUS + PRINTeL project of the European Union which was accomplished at Vanadzor State University.

1. The innovative and technology-enhanced teaching and learning methods and approaches that are needed to be introduced in VSU are:
   - Tutorials
   - Case based teaching
   - Problem based learning
   - Experience based learning
   - Discussions/debates
   - Active learning
   - Research based teaching
   - Internships/field training
   - Doing experiments in a lab
   - Engaging in class discussions
   - Solving problems related to a course content
   - Engaging in logic games and brainteasers
   - Watching videos related to course content
   - Power Point or other interactive presentations
   - Reading of textbooks
   - Peer learning (students learning with each other)
   - Attending lectures & taking notes

2. The technologies and facilities supporting teaching and learning necessary to be present in VSU are:
   - Assessment rubrics
   - Instructor-assessed projects
   - Review of student projects
   - Essay examinations

- Written reflections by teacher
- Self-evaluation
- Portfolios (collections of student work)
- Student-to-student (peer)
- Classroom response systems,
- E-portfolios
- Multimedia tools,
- Communities of e-learners,
- Digital games and simulations,
- Online discussion

3. The new forms of teaching and learning materials that are demanded for the needs of VSU are:
   - Multimedia books
   - Video lectures
   - Audio/Podcasts
   - Open educational resources (OERs, MOOKs).

The obtained results show that in order to increase the effectiveness of teaching and learning processes, it is necessary to switch from traditional methods to the use of new IT tools, where the student will be in the center and active.