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**Modernisation of Higher Education
in Central Asia through New
Technologies (HiEdTec)**



**COOPERATION FOR SHARING EXPERIENCE AND EXCHANGE OF GOOD
PRACTICES IN THE FIELD OF INNOVATIVE EDUCATIONAL
TECHNOLOGIES AND DIDACTIC MODELS**

PRODUCED

UZBEKISTAN

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WORK PACKAGE 1

Cooperation for sharing experience and exchange of good practices in the field of innovative educational technologies and didactic models

Task. WP1-T2 +4

**Developing a Google forms survey for getting feedback on the level of implementation of digital tools in the higher educational institutions in the partner countries. Analysing the results.
Generating “Recommendations for Adapting the Central Asian HE System to the Needs of the Digital Generation”.**

ANALYSIS OF THE RESULTS OF THE QUESTION TO RECEIVE LEVEL REVIEWS INTRODUCTION OF DIGITAL TOOLS IN HIGHER EDUCATIONAL INSTITUTIONS OF THE REPUBLIC OF UZBEKISTAN

Tashkent State University of Economics conducted a survey of students and faculties at different universities in the country to get feedback about the level of implementation of digital tools in higher educational institutions of the Republic of Uzbekistan.

The survey was attended by representatives of 11 universities with different areas of study. They are Tashkent State University of Economics, Tashkent Information Technology University, Andijan Machine Building Institute and universities from Bukhara, Samarkand and Tashkent regions.

Total number of respondents was 347, and 80.1% of them are teachers and researchers, 19.9% students. The structure of respondents can be viewed in more detail in Figure 1. We asked each of the respondent to answer questions carefully and with commitment. Thereby, studying the opinions of both teachers and students, gave us a better understanding about the status quo of the application of digital tools in Uzbekistan.

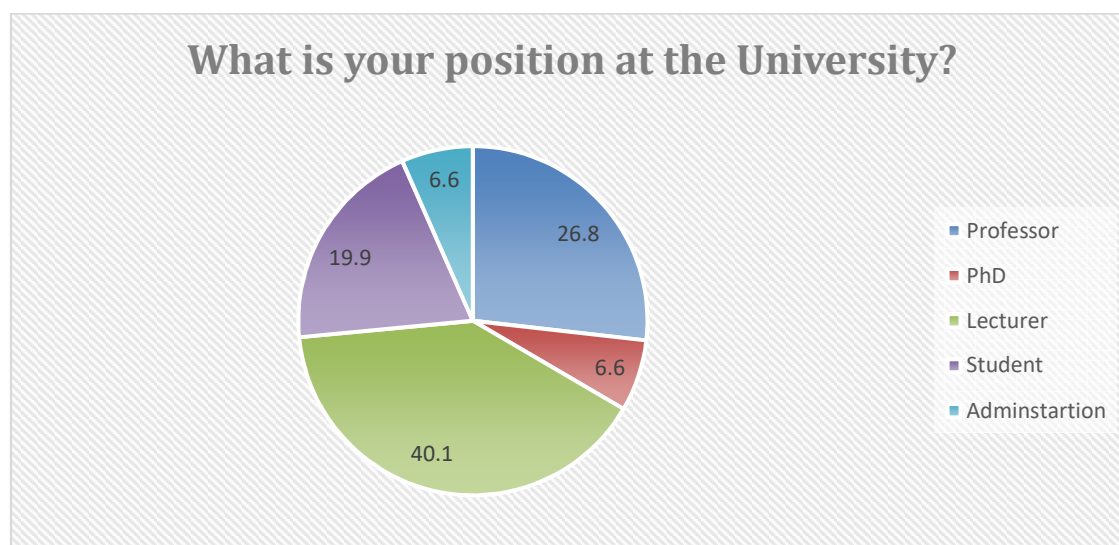


Figure 1 - Structure of respondents



The questionnaire includes 19 questions and consists of 6 parts:

- A. Teaching methods, approaches and techniques;
- B. educational technologies;
- C. quality of the teacher;
- D. the state of innovative learning in higher education classes;
- E. quality assurance of the teaching and learning process;
- F. continuous professional development of teachers.

In this part of the analysis we put together and explain each group of answers given to questions.

SECTION A “METHODS, APPROACHES AND METHODS OF TRAINING”

1.Question “How important is it for you to use teaching methods and/or approaches to achieve better learning outcomes?”

According to the results of the responses (Fig.2) most teachers and students have a general understanding about the importance of using certain approaches and methods to improve learning outcomes.

Respondents believe that the application of methods, approaches and methods of training will impact the way they teach and improve overall effectiveness of the training:

- very important 40.1% (5)
- important to a high degree of 26.8% (4),
- important of 6,6% (3),
- only 6.6% of respondents are not important.

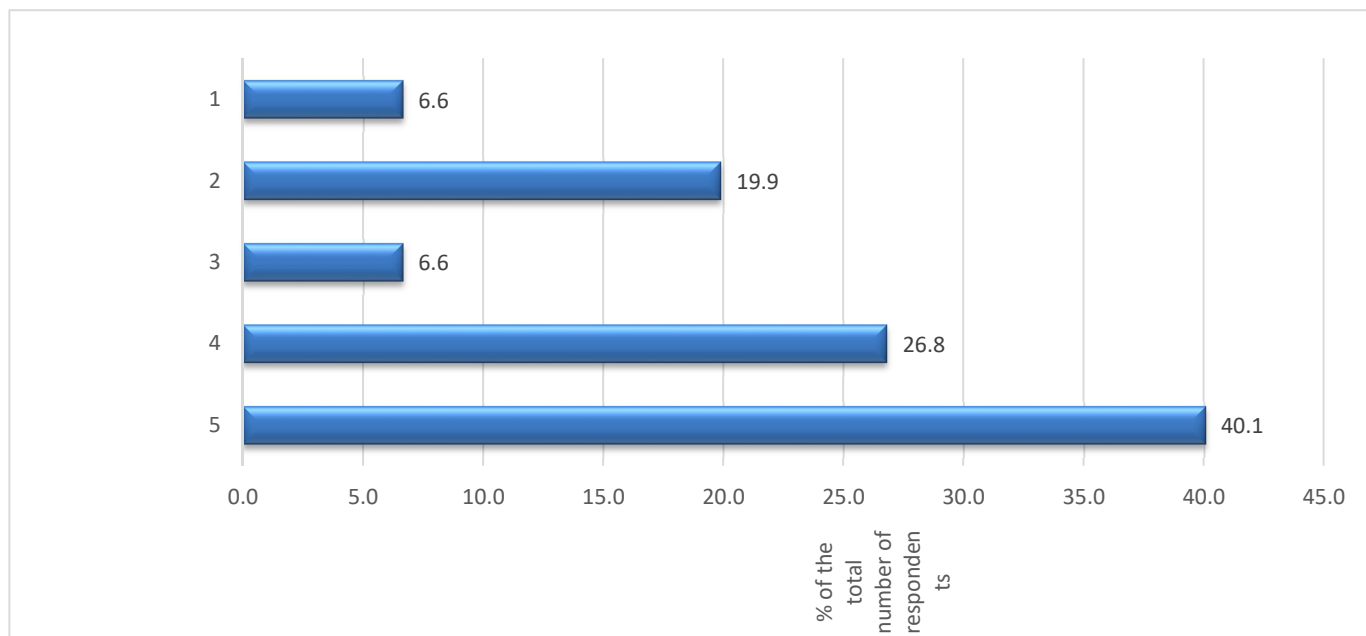


Figure 2 - Results of the answers to the question "How important are teaching methods and / or approaches to achieving ideal results in education for you"?

2.Question “What innovative teaching methods do you know?”

Analysis of the results of the answers to this question showed that the respondents gave multiple equally important methods of innovative methods of training (figure 3). Answers indicated that the



largest number of them use Multimedia Elements to Presentations (91.9% of all answers), story telling (84.4%), Introduce a game-based learning platform (82.7%), quiet a noisy classroom (73.8%), play simulations, (42.1%), the use of video for mini-lessons, role play, collecting the results of students' survey in online forms and surveys, offer-open-ended projects (33.3%). From 29.1 % to 3.2 % questioners are little familiar with teaching methods like:

- run a virtual field trip
- save time for exit tickets
- sport based learning
- active feedback
- run learning stations and some others.

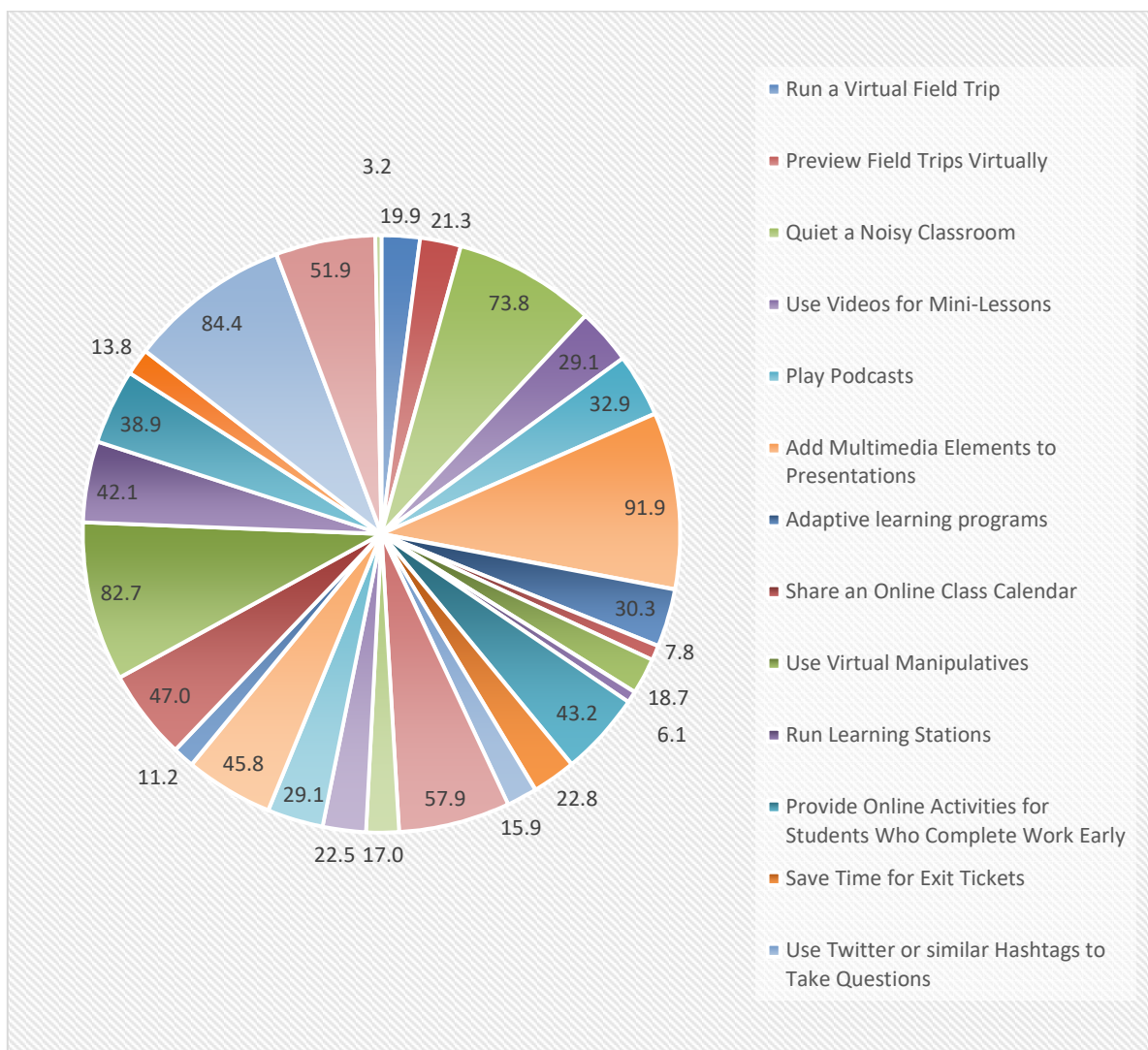


Figure 3 - Histogram of answers to the question “What innovative methods training do you know?”

3. Question “What innovative teaching methods do you use at your University?”

Answers of the respondents showed that the largest number of them use multimedia elements to presentations as innovative methods - (91.9% of all answers), use online mind maps for class brainstorms (83.9%), story-telling (78.1%), collecting the results of students' survey in online forms and surveys (65.7%), quiet a noisy classroom (49.6%) as well as role-playing games, open projects,



mind maps, student blogs, web quests and some others (figure 4). Oddly enough, few respondents noted the set-up of web quests, although the experience is, that it is used by almost all teachers. The results of the answers to this and previous questions allow us to conclude that the known methods of teaching are used by teachers in the educational process.

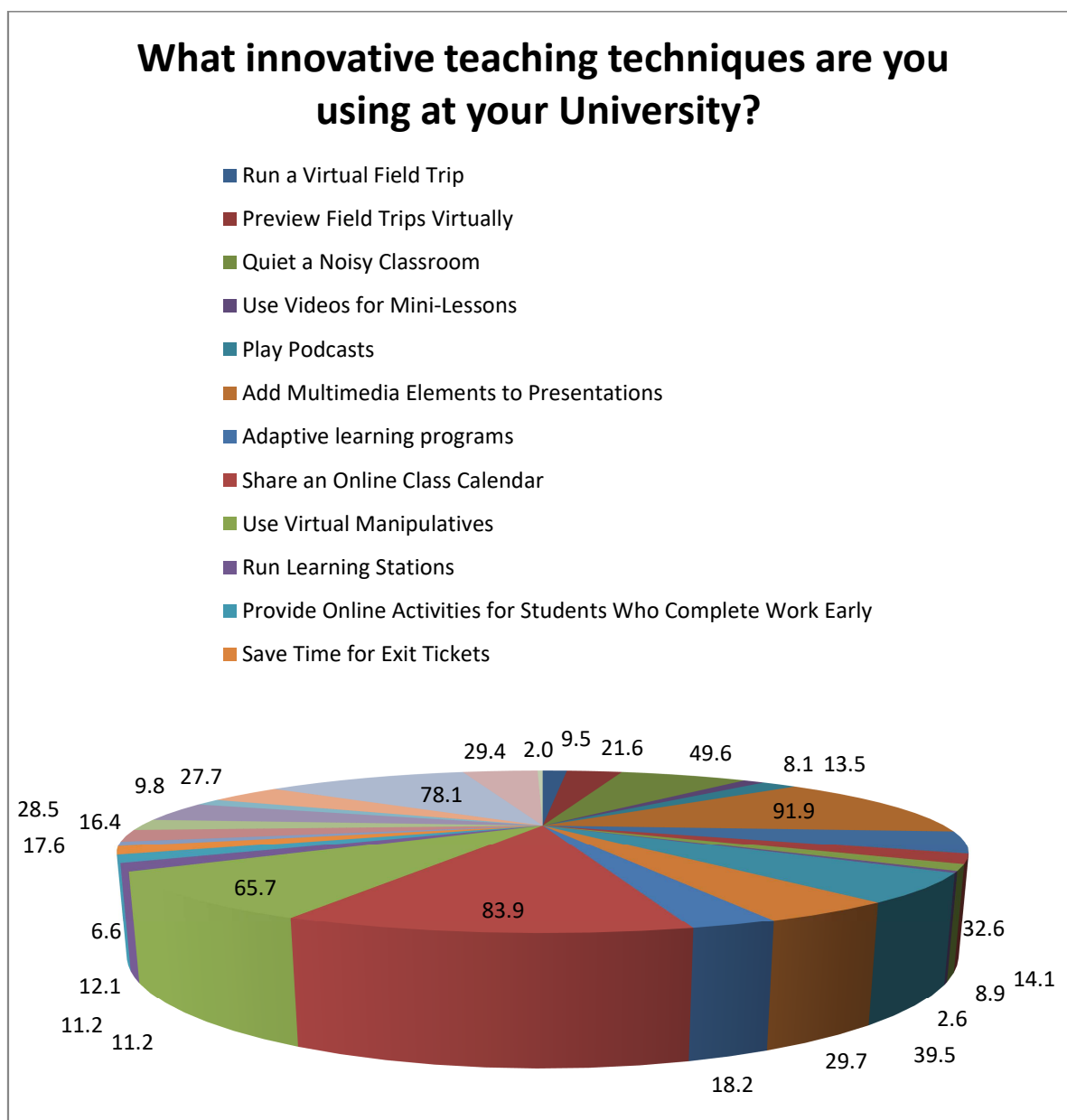


Figure 4 - Diagram of answers to the question "What innovative education methods do you apply at your University?"

4. Question "What teaching methods by your experience, are the most useful and achievable for teaching students (including those that do not exist at your university)? Why?"

One of the most common answers for this question is "project-oriented learning", which is based on the experience of practical research, while the students' needs to update all their scientific and educational information, remember and get practical skills, as well as to analyze the information.



Active teaching methods – TBL(Team-Based Learning), BL(Blended Learning), RBL(Resource-based learning), CBL(Challenge Based Learning), promote active thinking, develop creative thinking, learn to work in a team, develop students' self-education skills. Interactive presentations and videos contribute to better assimilation of information. Web quests, which, firstly, teach students to think in an original way, without limiting it to a template; secondly, to think quickly; thirdly, unite the group and allow each student to strive to prove their usefulness to the team.

5. Question "What teaching methods, in your experience, are the most useful and purposeful for teaching students (including those that do not exist at your University)? And why?"

The importance of techniques related to the Internet and the adaptability of the learning system is widely noted. It is indicated that interactivity and simulators are very useful for developing skills of laboratory research and other professional skills. The use of information and computer technologies, the advantages of which are: high-quality demonstration of educational material, accessibility, visibility, higher level and volume of information

It is also noted that students are more involved and interested in such activities involving Game-Based Learning, online activities, short quizzes, using multi-media technologies and presentations as well story telling methods and experimental teaching techniques are also effective for remaining subject in memory.

In respondents' opinion, all methods are important for the best result of each student (University). It is necessary to choose more convenient and useful options. In this case, the greatest effect is achieved for instilling the necessary competencies (knowledge).

In general, it should be noted that most teachers understand the advantages of innovative, and especially digital, technologies in training, correctly justify the results of their application. At the same time, both teachers and students have a desire to use such technologies in the educational process, which will help to improve its effectiveness.

SECTION B. "EDUCATIONAL TECHNOLOGIES"

6. Question "What educational technologies do you know?"

Analysis of the results of the answers to this question showed that the respondents are very familiar with educational technologies (figure 5). The most frequently noted answer is Games and Gamification 73.5%. Among the most common answers (there are 8 of them): Lesson Cast (68.0%), MOOCs (57.9%), Open Content (55.6%), Learning Analytics (58.8%), Chrome books (52.4%), Flash notes (49.9%), Glogster EDU (49.0%), Mobile Learning (44.4%) and Tablet Computing (37.2%) etc. However, respondents are less familiar with paper tab, mobile learning, leap motion, lore and some others.

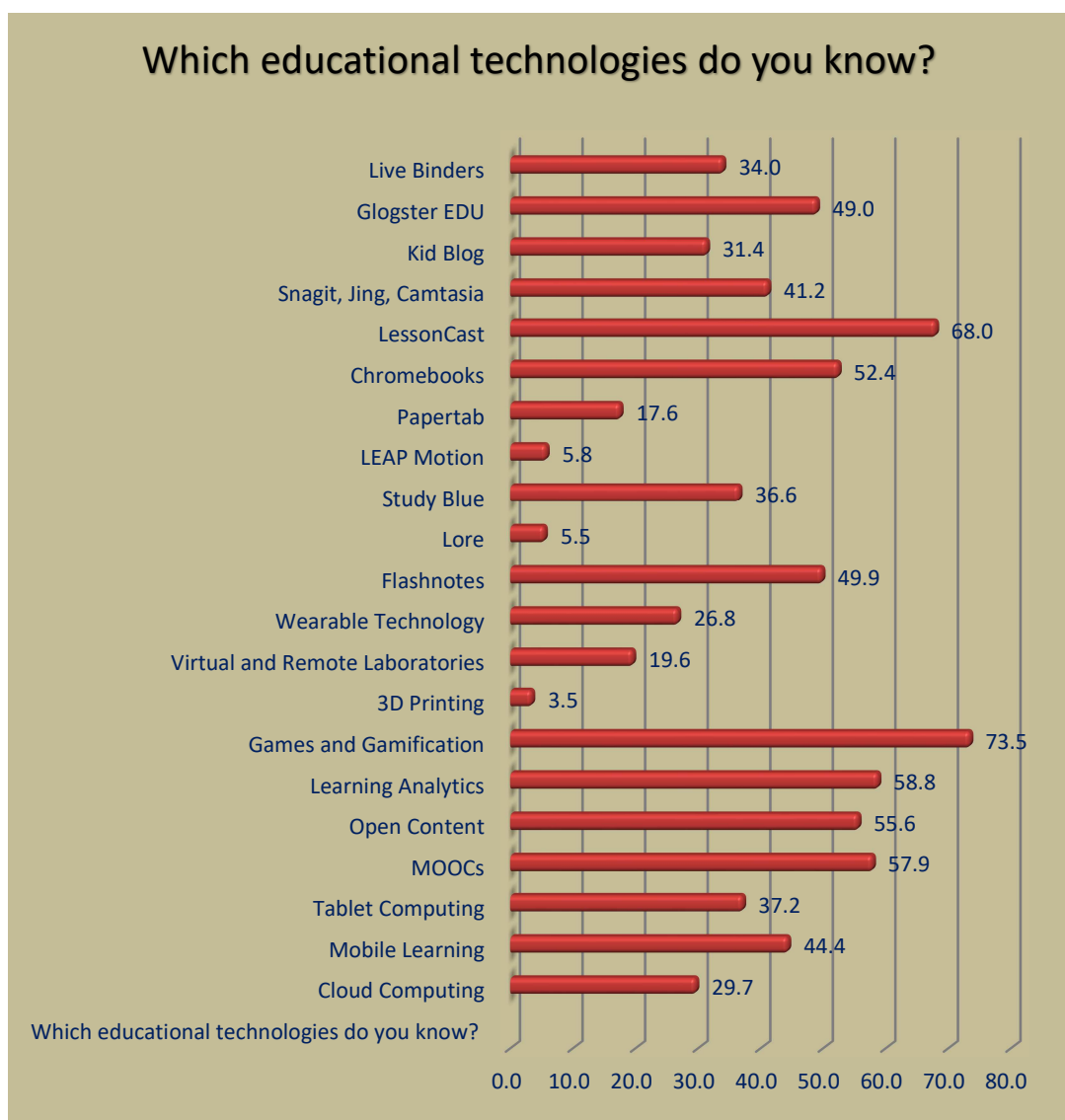


Figure 5–Frequency of answers to the question "What educational technologies do you know?"

7. Question "What educational technologies are used in your University for education?"

Details of the answers to the question are shown in figure 6. Most of the respondents pointed at the answer - open content 83.8%. Among the most common answers there are: learning analytics (71.2%), MOOCs (64.3%), tablet computing (62.5%), and mobile learning (55.6%) and etc. Respondents are less used live binders, gloster EDU, SnagIt, Jing, Camtasia, Lesson Cast and some others.

According to the analysis most of the respondents are aware of the newest technologies. However, they are not used in their activities or in the university as a whole.

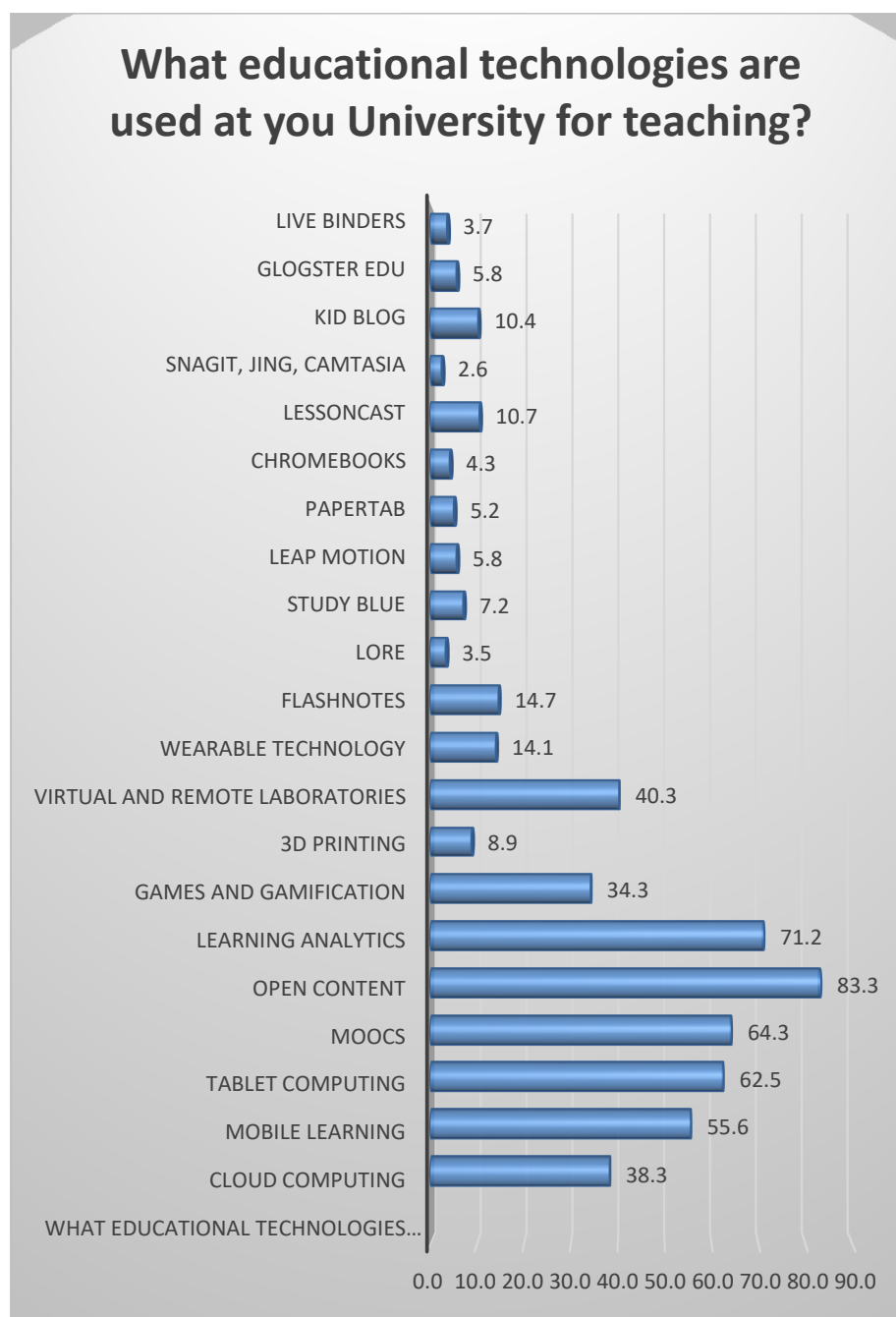


Figure 6– Frequency of answers to the question "What educational technologies do you use?"

8. The question "Which of these technologies proved to be the best in your opinion? Why?"

The answers to this question show that teachers and students are well versed in the advantages of particular educational technologies. As already noted, preference is given to mobile learning which is the mostly chosen opinion of respondents since it allows students to think independently, looks for the necessary information, processes it, identifies the problem, analyzes the experience and knowledge, and gives the opportunity to study in other universities and gain new experience. According to respondents, learning analytics and debate lessons are helpful for students. With this, they will use their mind thanks to these technologies and methods during the lesson. Another respondent argued that



the best method is Mobile Learning, because the young generation is very affiliated to their mobile phones. However, he made it clear that it is forbidden to use mobile phones in the educational process by the Ministry of Higher education.

In general, the questionnaire covers all the technologies offered in the list. Each of them has its own admirers who use them in the learning process, and usually not one, but several technologies.

9. Question “Are students involved in the process of finding new teaching methods and introducing new technologies at your University?”

The answers to this question show that teachers involve students in the process of finding and implementing new teaching methods in the educational process in their disciplines, this is noted by 41% of respondents.

Based on this figure, we can conclude that in the country 59% students are not involved in the process of finding new teaching methods at university.

Additional comments to this question:

1. We are organizing a lot of competitions around the students and during the meetings and debates they are giving a lot of start-up ideas and initiatives, which are connected to the education system. Thanks to this, we are using some types of technologies. Also our students make channels in social – medias. There they give many ideas.

2. Yes, I attract students with different methods by my creativity and according to the case.

3. It is our state policy that we have to grow our youth in a modern, digital and innovative way. That’s why we always encourage our students in technological novelties.

4. Yes, I attract undergraduates during teaching practice.

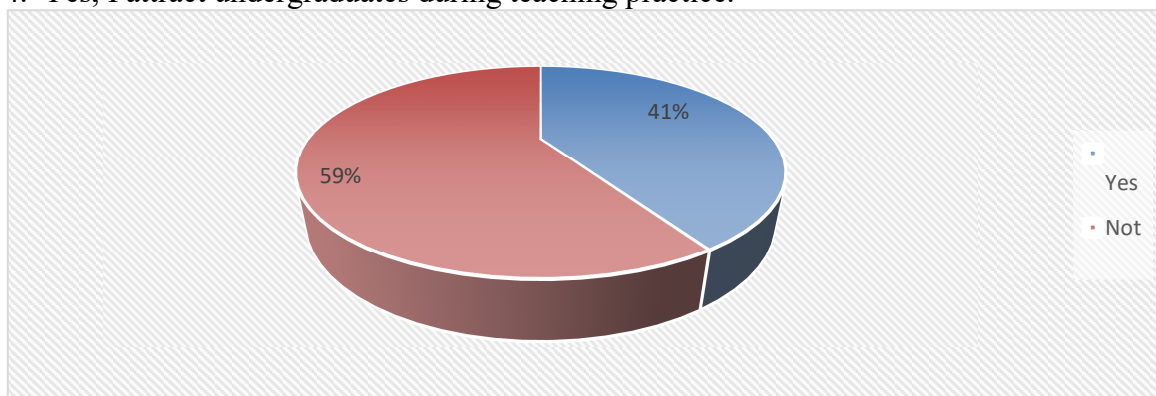


Figure 7–Results of the answers to the question “Do students participate in the process of finding new teaching methods and introducing new technologies at your University?”

SECTION C. "QUALITY OF THE TEACHER"

10. Question "What do you think makes the lecturer innovative?"

The respondents answered to this question with multiple answers. 100% of the respondents explained it by creativity, 92.5% of the them consider using innovation, some say that a teacher needs to have the ability to give stimulation to students (90.8%), 82.4% of students provide an innovative and stimulating environment as most innovative feature, some the ability of the teacher to encourage students, imagination, judgement and open-mindedness were also in the answers. 73.2% said, that providing students tasks that are relevant to their lives and future is most important, 36.0% say the innovation lies in the enthusiasm.

The results are shown in figure 8.

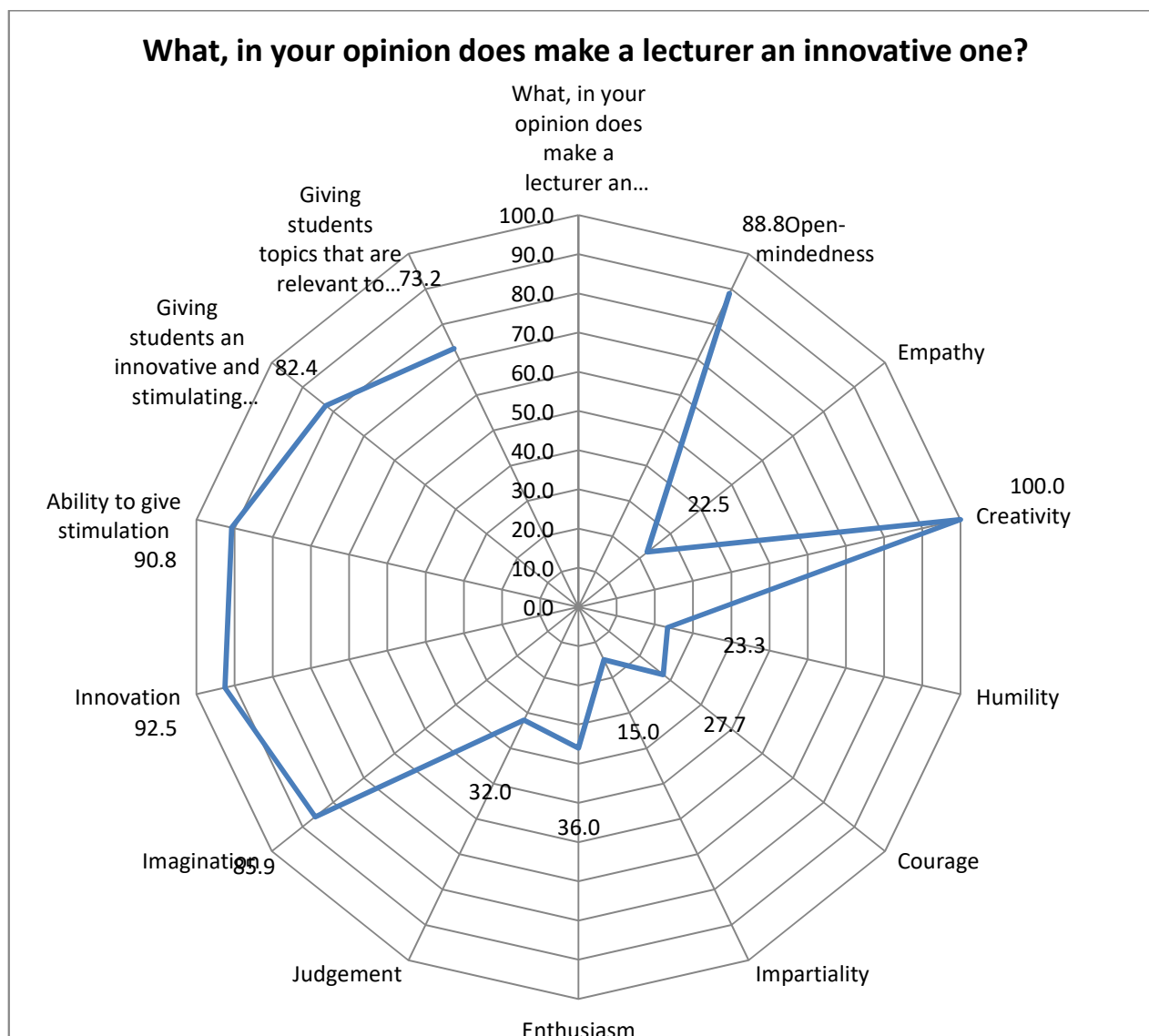


Figure 8—Results of the answers to the question “How do you think, what makes the lecturer innovative?”

11. Question “What qualities do lecturers / teachers need to teach 21st century students?”

The necessary qualities required for lecturers/teachers to teach students in the 21st century are marked by decreasing qualities such as: creativity (100%), innovation (96.0%), open-mindedness (85.3%), imagination (75.8%), providing students with an innovative stimulating environment (74.6 %), providing students with an opportunity that is relevant to their life and future (40 %), enthusiasm (34.0 %), empathy (27.4 %).

The results are shown in figure 9.

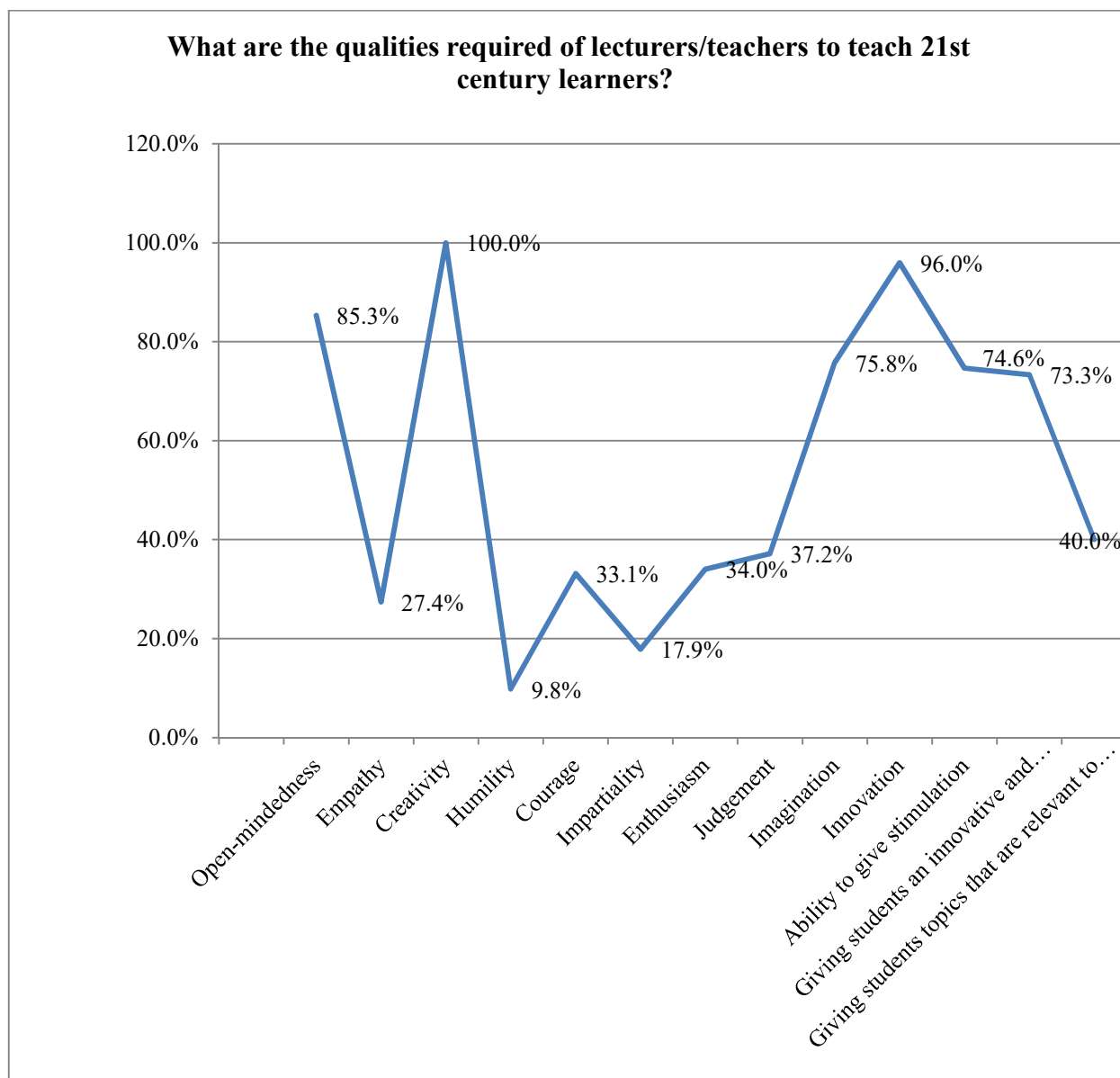


Figure 9 –Results of the answers to the question “How do you think, what makes the lecturer innovative?”

SECTION D. STATUS OF INNOVATIVE LEARNING IN HIGHER EDUCATION CLASSES.

12. Question “How do you think is the current level of education today? Is it innovative enough?”

Analysis of the survey results (figure 10) shows that the high level – 11.8 % of respondents, the average – 37.2 % of respondents, low – 23.3 %, and none of respondents estimate the current level of education is very poor.

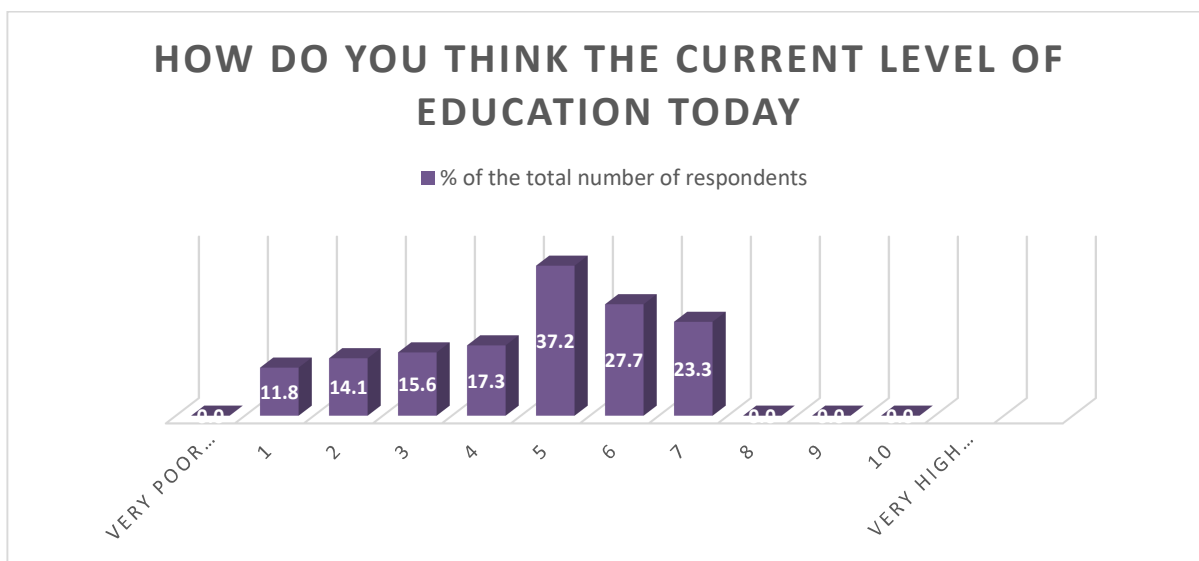


Figure 10 –question "How do you think the current level of education today? Is it innovative enough?"

SECTION E. QUALITY ASSURANCE OF TEACHING AND LEARNING

13. Question “Do you allow your students to rate your lectures?”

The survey shows that the majority of teachers (72.6% of the total number of respondents) allow their students to evaluate lectures (figure 11).

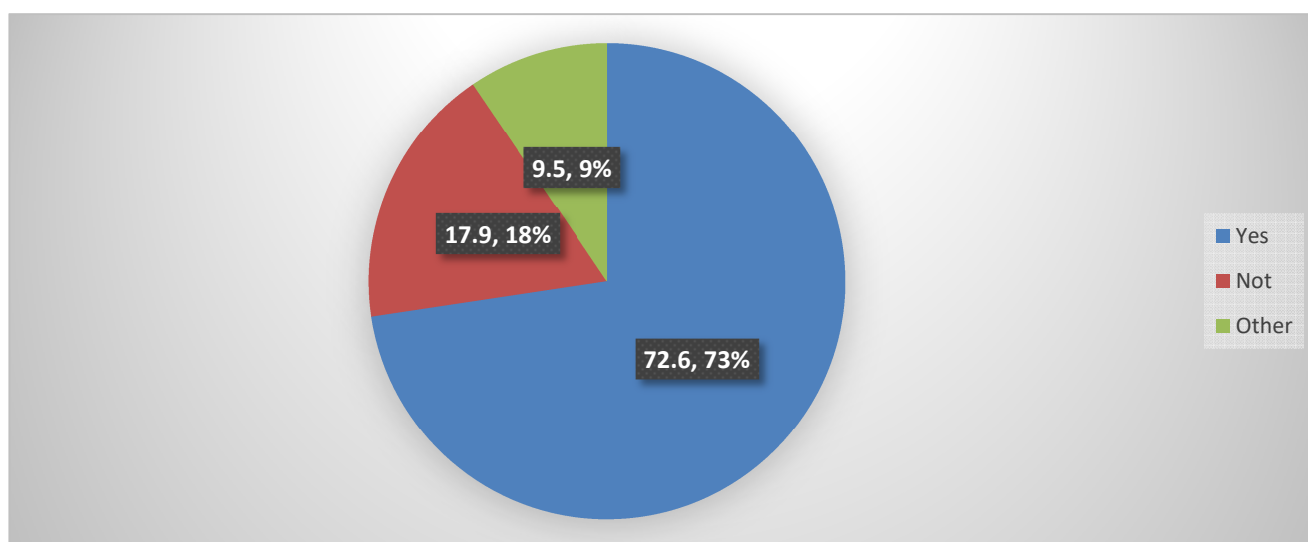


Figure 11 – Analysis of these answers to the question “Do you allow your students to rate your lectures?”

14. Question “What tools / methods do you use to do this if the answer to question 13 is yes?”

Of all respondents who answered yes to this question, 13 explained the tools/methods by number of ways. In order to obtain feedback and improve the educational process to evaluates their classes they use methods like talking, anonymous surveys, multi-medias and presentations, questionnaires, gathering student’s opinions and comments and discussions as well as empathy.



15. The question is “What teaching methods do students complain about the most, which are used in your University?”

Most of the students complained about old-soviet type methods which are mostly explained by teacher-centered teaching. Teachers consider themselves as the main authority figure and main source of information. Students are viewed as “empty vessels”.

Most respondents showed it as a difficult question to answer. Students complain about no or little communication, not using internet and multimedia, lots of reading materials, lots of writing in the lectures and homework that is given without instruction and not being checked.

16. Question “What are the criteria for evaluating teachers at your university?”

Answers for this question vary from internal to external evaluations. Based on the answers we can summarize them into the following groups:

1. University individual work plan where yearly balance of teaching and research is indicated. It includes how many classes are taught in the semester, supervision for bachelor and master degree students, interactions beyond class, number of articles published, reviewing the coursework's, checking the exam papers, supervisor for the competitions and etc.;
2. Yearly university monitoring department holds accreditation based on questions they consider are important, these questions may relate not only to teaching but also to out of classroom and individual consolations. Moreover, it may contain questions like “what have you done for spiritual activities in the university”.
3. Based on video cameras in each classroom educational department studies classes anonymously and presents results to the university council.
4. Quality commission (only at Tashkent State University of Economics) visits classroom once in a semester without notification and checks whether classes are on schedule, materials up to date and participation of students.
5. Monitoring of the Quality department collects information from students anonymously.
6. Based on number of the students missing classes and their grades.
7. Once in 3 years, teachers pass through the training and get certificate of teaching on their field. Duration is 2 months.

**17. Question: “Do you use any innovative methods of feedback (survey, google forms, etc.)?
If yes, please specify.”**

Most of the respondents pointed out that the most innovative method of feedback that they use is google forms. Some of them answered “Internet and mobile enabled technologies and others classical paper based and interview based methods”. Online methods include surveys, social networks, especially Facebook polls, Moodle system-based surveys, and web-based survey monkey.

In general, there is the tendency that teachers use most accessible feedback methods. Therefore, it must be paid attention to promoting the most innovative methods of feedback with larger functionalities at universities and making them accessible for faculties and students.

In fact, the majority of respondents answered positively to this question (87%) saying they use some methods to collect feedbacks from students.

18. Question: “Do you think that the current training program for lecturers in your country meets the needs of modern schools and universities?”

The majority of respondents (78.1%) believe that the current training program for lecturers in Uzbekistan doesn't meet the needs of modern schools and universities (Figure 12).



% of the total number of respondents

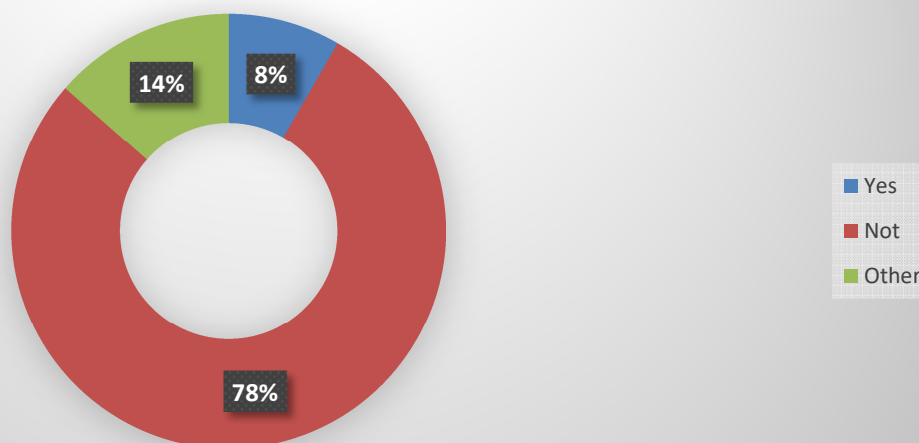


Figure 12– Analysis of the response data to the question “Do you think that the current program of lecturers in your country meets the needs of modern schools and universities?”

SECTION F. CONTINUOUS PROFESSIONAL DEVELOPMENT OF TEACHERS.

19. The question “What are you doing to improve your skills in teaching methods?”

Answers for this question vary, as multiple important selections are allowed. Summarizing them we can understand respondents show the important ways for improving their skills in teaching methods: foreign internships and Erasmus+ programs (94.5%), learn from student survey results and read scientific articles about new teaching methods. (88.8%), student knowledge and feedback are the most adequate indicators (85.9%), read and / or participate in blogs, study, reading scientific articles for teachers, use the experience of teaching at foreign Universities (68%), participate in professional networks, leading the Advanced Courses for teachers on innovative technologies in education - ICT in teaching (49.6%). Taking exactly the information the lecturer needs from the Internet, working in an educational center, attending classes of colleagues (40.3%), inverted training, etc. (8.9%), online and so on (0).

According to the results of the survey, teachers do not consider online training as important method to improve their skills in teaching methods.

Results show there is an enormous need in training programs for teachers, as at the current stage they rely on only government provided 2-month courses. Answers show that only a small percentage of teachers work on individual development of their skills in teaching methods.

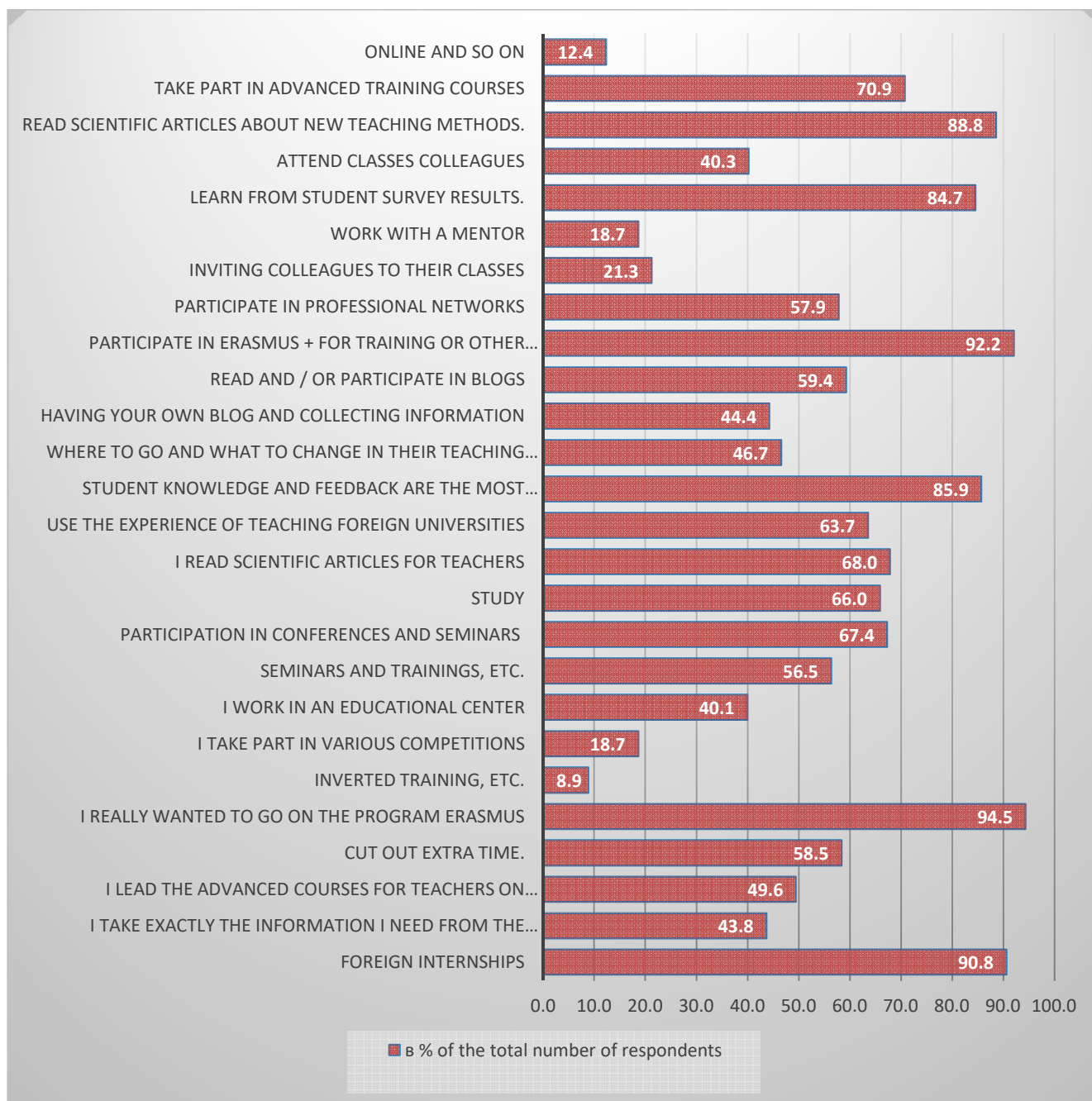


Figure 13 – Answers to the question “What are you doing to improve your skills in teaching methods?”



SUMMARY

To sum up, the survey covered different groups of faculty members, including students and administrative staff. Respondents from 3 universities answered it, considering their own experiences in educational processes.

According to the survey results, most of the teachers are aware of the current trends in innovative methods and digital tools. However, most of them only use few of these methods and these in a limited way. Moreover, a number of digital tools are also widespread in educational processes but it doesn't cover full functionality and availability through these tools.

Mostly it explained the teacher's literacy on IT tools and methods. Internet speed, access points, electronic educational resources are most crucial to support digital environment in the University.

All three Universities use Moodle platforms in the educational process. Electronic courses are mostly provided on that platforms, but now all course resources are available electronically in the system. At Tashkent University of Information Technologies, the system is used broader than others as they have a large number of users trained on digital technologies.

The analysis also shows that mobile technologies have a broad impact on recent teaching processes. Most of the respondents selected G Suite tools like google docs, forms, cloud services as the major technologies they use in their classes. Beyond this, according to the answers of students, they find these tools better accessible and easier to use. G Suite tools are also the easiest way to access mobile learning apps.

For many teachers, improving their skill on teaching methods and using innovations, are important priorities. They are ready to participate in courses that help them with their teaching, however, most of the courses provided in the framework of Erasmus+ are limited and seasonal. According to the results, most of the teachers are ready to be part of digital changes in the educational parts. However, their IT skills do not always let them to be part of the digital community.

It is important to note that most of the teachers use and understand the advantages of new tools and innovative approaches that are being generated. It must be considered that the young generation is quicker in applying these innovations in the education. Therefore, a co-working environment should be created to study innovative methods and digital tools effectively. At the same time, administration and management of the Universities should understand that digital tools are expected by students and learners. That's why infrastructure has the equally importance for enabling new teaching methods and digital tools at the universities.

In the recent years, hundreds of digital education tools have been invented worldwide. These tools have been created with the purpose of giving autonomy to the student, improving the administration of academic processes, encouraging collaboration, and facilitating communication between teachers and learners. The analysis of the survey gave us an image of the current stage of innovative methods and digital tools that are used in Uzbekistan's Universities. Implementing and introducing new tools will shift acquisition of knowledge and encourage students' and teachers' involvement.

It is obvious that Universities need to invest more in the digital technologies. Teaching methods are equally or even more important than using the newest and best technologies on the market. Teachers need advice and good methods to attract the students' attention in today's classrooms. Technology is a good trigger, but the best technology does not help without the application of very good teaching methods. Teachers have to start being more open minded to new methods and also Universities need to find a good strategy to help their teaching staff to uprise a new, 21st century digital generation.



RECOMMENDATIONS

Based on this survey, we consider it necessary to provide some recommendations to managers and subjects of education of the Republic of Uzbekistan.

For the Ministry of Education and Science of the Republic of Uzbekistan:

Develop a roadmap and a regulatory framework which includes the following:

- a review of the current readiness of teachers and their capacities' correspondence with the national education goals and visions should be conducted;
- contest of best teacher in teaching with innovation and digital tools;
- learn best practices from other countries in the region and beyond;
- national requirements for innovative teaching in Uzbekistan Universities;
- develop a strategy for digitalization of education in Uzbekistan;
- training and retraining of teachers in the development and application of digital educational technologies;
- encourage Universities to involve foreign faculties for teacher- trainings continuously;
- creation of online video samples for innovative teaching and for the use of digital tools for education.

For University management and administration bodies:

1. Open free Wi-Fi zones which will encourage students and faculties to use educational resources;
2. To define ICT requirements for teaching, including IT literacy.
3. Creating advising centers focused on new teaching methods and digital technologies which assist new teachers on the job.
4. Develop training by involving international expertise in the field.
5. Involve stakeholders and partner companies in the modernization of teaching methods and experiences.
6. Encourage international training courses abroad;
7. Involve foreign partner Universities in the training of the teachers;
8. Provide incentives for the teachers who use digital tools and methods;
9. Provide new educational resources available on the market;
10. Promote best practices of innovative teaching including computer, internet and mobile learning tools.
11. Equip classrooms with necessary digital tools and help on using them;
12. Develop systems that evaluates teacher's innovativeness and resourcefulness;
13. Continuously improve e-learning platforms;
14. Invite business to know better their needs and simulate company practical work at education environment.



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