The Usage Of Foreign Experience In Effective Organization Of Teaching Activities In Mathematics

Anvar Rashidov, Tulkin Rasulov

Abstract: This article deals the concepts of developing higher education in Uzbekistan until 2030, inverstigating and using foreign experience for this purpose. Analysis of the organization of lectures, practical and independent training sessions in higher education institutions of developed countries and their role in the effective organization of training sessions are provided. A number of recommendations for improving the quality of education based on international experience have been developed.

Index Terms: concept, quality of education, foreign experience, credit-module system, training, text of lectures, case study, independent learning, e-library, online registration.

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1.INTRODUCTION

The purpose of the National Program for Personnel Training of the Republic of Uzbekistan is to reform the education system radically, to eradicate it from the past ideological ideas and failures, and to create a national system for training highly qualified personnel at the level of developed democratic states. The development and implementation of a new generation of educational and methodological complexes and didactic and information systems is an important step in the implementation of the program. The use of the experience of advanced foreign universities enables to have opportunities for improving the quality of education. The concept of developing higher education in Uzbekistan until 2030 sets out the gradual transition to credit-module system of educational process in higher education institutions. In addition, it is planned to introduce advanced standards of higher education based on international experience, including a gradual transition to a system of education aimed at developing practical skills in the curriculum. One of the important aspects of the concept is to raise the content of higher education to a qualitatively new level, to create a system of highly qualified personnel that will make a worthy contribution to the sustainable development of the social and economic sectors and can find an appropriate position in today's market relations. Particular attention is paid to ensuring the academic independence of higher education institutions and the gradual implementation of the concept of "University 3.0" step by step, which is inextricably linked to the commercialization of educational, science, innovation and research results in higher education institutions. A great attention is paid on establishing techno parks, fore sites, technology transfer, startups, acceleration centers in higher education institutions through extensive attraction of foreign investments, expanding the range of paid services and other non-budget funds, and researching and forecasting the socio-economic development of relevant sectors, industries and territories and promotion to the level of practical institutions.

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2 MAIN GOAL

The main goal is analyzing the effectiveness of international relations, evaluating the effectiveness of joint programs, developing new forms of cooperation, preparing proposals for the involvement of foreign faculty and compatriots in the higher education system, and studying international best practices for evaluating and improving the effectiveness of higher education institutions and using recommendations as well [1-5].

1. Integration (lot. Integration-recovery, complete and unite, integer-entire) is used to synthesize and integrate logically. The integration of educational content means the synthesis of meaningful, interdependent, interdisciplinary, expanding and deepening learning content, that is, logical integration into a whole.

2. Genetically integral is interdisciplinary, interdependent, complementary, expanding and deepening of the content of the learning material at the level of educational standards and a logically completed form of the content. An integrated learning approach, or an integrated learning subject requires a comprehensive interpretation of the subject, event or process in terms of a holistic networking and relationship. This allows the formation of a highly qualified specialist with independent thinking and creativity, meeting the current and future requirements.

3. Integration education not only requires students to perform analysis and synthesis operations, but also requires high-level thinking operations such as abstracting, algorithmization, categorization, conditional expression, causal linkage detection, analysis, synthesis, systematization and modeling. These operations are performed by distinguishing (differentiating) all the essential features of the studied object, understanding and summarizing their essence and content. Consequently, integration always evolves with its differentiation or vice versa.

4. Integration and differentiation do not exist in isolation; one does not arise from the other, but always appears simultaneously as two sides of the object studied.

5. The authors of the integrated curriculum try to integrate all adjacent courses into the core of the subject and ideas, helping students to think creatively.

6. Developed countries offer courses in some disciplines, including integrated courses in the curriculum. In Western Europe, for example, 15% of students study exact subjects in a more advanced level.

7. The main purpose of the use of step differentiation technology is to educate each student on his or her own abilities so that each student will have the opportunity to learn and apply his / her own abilities.

3 PROPSED METHOD

Below there is presented lectures of Mathematics students of the University of L'Aquila in Italy and the University of Bern in Switzerland, analyzing practical and independent learning, and expanding the global outlook of our young people in line with our government's educational reform agenda. We wanted to introduce teaching methods that are rich in modern pedagogical technologies to educate and compete with. In particular, there is written about the unconventional way of organizing students' independent learning in math lessons and their grading in the rating system.

The proposed method (project) is exemplified by the subject "Mathematical Analysis" for the students of Mathematics.

1. First of all, lecturers and teaching staff should have their own website. In this case, teachers and students from all universities of the country will have the opportunity to exchange distant education, self-control and use.

2. It is desirable that every teacher develops and regularly updates the texts of lectures on teaching subjects and methodical instructions for their practical use. At the same time, rather than solving the problem, it is preferable to describe the problem-solving methodology in detail, and sufficient tasks should be given for independent work. The texts of lectures corresponding to the working program on "Mathematical analysis" will be posted on the speaker's web page. The text of the lecture should be written in such a way that the student should be able to master the subject without a teacher. As a result, the role of the teacher in the independent work of the student is diminished, and the student has the opportunity to work on the subject himself.

3. Practical exercises can help students to think independently, to develop new ideas and to build self-confidence by controlling students' independent work. At the same time, it is advisable to engage students individually. In this case, it is possible to improve the quality of education through the effective use of practical work by senior researchers, undergraduates, talented students of senior courses. Another advantage is that it promotes the traditions of teacher apprenticeship.

At least one week before the internship, a list of examples be solved in the classroom and home-based examples should be posted on their websites by responsible subject teachers.

As an example, we chose the subject of Mathematical Analysis the theme "Monotone Sequences and Their Limits". The following is a list of examples to be solved in the course of the lesson and examples of home-based examples:

№	Task №1	points
1	Prove that the sequence has a finite limit if it is restricted to the ascending (descending) and upstream (bottom).	
1 *	$x_n = (1 + \dfrac{1}{n})^{n+1}$ prove that the sequence is diminishing.	0.6
2	Using of monotone sequence limit theorem,	

	$x_n = \dfrac{\sin\alpha}{2} + \dfrac{\sin 2\alpha}{2^2} + \ldots + \dfrac{\sin n\alpha}{2^n}$ check sequence approximate?		
2 *	Calculate the following limit $\lim\limits_{n \to \infty} \dfrac{n^2}{2^n}$.		0.7
3	If $x_n = \sqrt{a + \sqrt{a + \ldots \sqrt{a}}}$, $(a > 0)$. *nta ildiz* Calculate and prove $\{x_n\}$ sequence limit existance		
3 *	$\{c_n\}$ is a non-negative sequence and $p > 1$. $z_n = \sqrt[p]{c_1 + \sqrt[p]{c_2 + \ldots \sqrt[p]{c_n}}}$ prove that the sequence $\dfrac{1}{p^n}\ln c_n$ must be limited from the top to make the sequence approximate.		0.7

The examples in Table 1, 2, and 3 should be taken off by the students in advance and they will have to ask questions in the classroom. Star-studded examples are examples that must be done independently at home.

4. At the beginning of the next lesson, a 20-minute written work on the previous lesson is taken. In the remaining 60 minutes, they will discuss examples on a new topic.

5. Written control works will be checked until the end of the week and will be included in the online registration. Sample note:

№	Student's surname, first name and father's name	Student's code	11.09.19	18.09.19	25.09.19	24.09.19	Total
1	Boboyeva Gulhayo	10080	1.8	1.7			3.5
2	Kadirov Suhayl	10081	1.7	1.5			3.2
3	Shodiyeva Mokhinur	10082	1.5	1.7			3.2
4	Rajabova Madina	10083	1.7	1.8			3.5
5	Hayitova Sitora	10084	1.1	1.3			2.4
6	Shukrullaeva Mokhinur	10085	1.4	1.5			2.9
7	Sobirov Kuvonchbek	10086	1.6	1.7			3.3
8	Fayziev Ulugbek	10087	1.8	1.7			3.5
9	Rustamova Barchinoy	10088	1.2	1.3			2.5
10	Hamitova Madina	10089	1.5	1.6			3.1
11	Ganiyev Kodirjon	10090	1.6	1.7			3.3
12	Solikhov Sukhrob	10091	1.8	1.8			3.6
13	Nuriddinova Ferangiz	10092	1.0	1.3			2.3
14	Ahmadova Marjona	10093	1.8	1.7			3.5
15	Shodiev Mirzobek	10094	1.2	1.3			2.5
16	Teshaeva Sharifa	10095	1.5	1.6			3.1
17	Halimova Asila	10096	1.6	1.7			3.3
18	Abdullaeva	10097	1.8	1.8			3.6

			№1	№2	№ 3	№ 4	
	Intizor						
19	Shonazarova Nilufar	10098	1.0	1.3			2.3
20	Mukhtorova Mohira	10099	1.8	1.7			3.5
Task number			№1	№2	№ 3	№ 4	
Maximal point of the task			2	2	3	3	15

The maximum score for this task is determined by the degree of complexity of the topic.

6. A student who is dissatisfied with the result of a written work will contact the teacher who has reviewed the case before the second assignment evaluation process is complete. If the teacher can justify the score on the written work and the student is satisfied with the answer, the score will remain unchanged. Conversely, the teacher has the opportunity to correct the score if it is known that the teacher missed something in the assessment process. Alternative option: Every Monday after classes, subject teachers work with students' objections and close the corresponding registration date. It also reinforces the theme by answering questions relevant to the topic mentioned. 7. Generally, writing work questions can be priced differently so that students do not have objections. The written form provides a simple, moderate, complex example of three types of work, and the student is given the choice. For example, you can assign 5 points for a 3-point sample, divide by 2 points for a 4-point sample, divide by 5 points for 1 score, and a 5-point example is rated 5 points. In this case, the suitability of the example is based on the general evaluation criteria:
- Simple;
- Average;
- Complicated.

8. The optimization of hours allocated to the subject is recommended, where possible, to spend as little time as possible on the lecture and to incorporate some of the independent learning as classroom hours or to incorporate the hours associated with the adoption of independent learning.

9. About organizing the remaining 60 minutes of the practice lesson:

It is recommended that the examples for the practice lesson are not displayed on the blackboard. The student then tries to decide how to solve the problem. If you have any questions you can contact the teacher and get a referral. If the teacher shows off the example on a blackboard, he or she will encourage the student to take the example in the way that he or she chooses. The student will not have the opportunity to come up with a new idea. If the student is working more on himself, then the ability to innovate is formed.

10. You can ask questions in 2 subjects during one pair. For example, such subjects as "Mathematical Analysis" and "Algebra and Number Theory".

If this method is used in practice or independent learning, then when a student asks a question, the student's question is first determined and the corresponding subject teacher answers the student's question. If a student fails to attend the lesson, a score of 0 points will be assigned to the relevant item in the online account, which will allow the student to earn and earn the same amount of time. As a result, the student's participation in the class is intensified and he or she is prevented from leaving classes without a reason.

11. Because this method requires high level of knowledge and skills from the teacher, it is likely that the teacher will need additional assistants, mainly because he or she has to deal with the student individually. It is possible to involve senior researchers, independent researchers and masters (if there are such members in the department). These hours are not paid for their individual work plans.

12. In this way, as the teacher requires high level of knowledge, skills and knowledge, the student is able to use the computer well and be able to independently express his or her own ideas.

It is worth noting another positive aspect of such training. As a result of the organization of practical training with the participation of a lecturer and several teachers in one subject, it is possible to establish a small scientific school.

At present, special emphasis is placed on the organization of education in educational institutions that there are no vacant pairs in the schedule. When students are generally free during a pairs, this time can be used effectively as an independent education. Students can use their free time if they are equipped with classrooms, such as "Mathematics", which can be equipped with computers and educational literature and can be used under the direction of the Office Manager. At the same time it is strictly observed that the student's daily class time is not more than 8 hours. Of course, not all students have laptops or modern multifunctional phones, depending on the capabilities of the student. Therefore, if all the computers in the faculty are connected to a single network, then the student can have access to the necessary information on the subject even without the Internet, and will be able to track his or her grades. On the basis of the department, an electronic library is created and managed by the department through a local network.

4 RECOMMENDATIONS:

1. Foreign experience shows that it is inadmissible to rush education content. In our view, the most effective way in this area is to create curricula that are based on integration and specialization.
2. Individual and differentiated approach to students in the pedagogical process is an important factor in the development of the individual, because it is the ability of such skills to create the conditions for personal development.
3. Different stages of learning should be widely used at different stages of the learning process: it should be taught in new lessons, differentiated homework, measurement of knowledge in the classroom, current testing of the topic, independent and control work, errors and reinforcement.
4. Often when asked for homework in the classroom, student knowledge gaps are sought. In fact, achievement, knowledge and skills need to be identified, as the homework is required to teach, help and support. Different learning methods should be used when asking students for homework.
5. Different learning should be conducted to know the individual characteristics of students and, if necessary, to achieve corrective action, which will allow teachers to learn individual skills and learning opportunities (attention, thinking, memory, etc.), knowledge, skills and abilities in specific subjects required.
6. Differential learning is the organization of the learning process taking into account the leading features of the student group; individual learning is given to each student according to their abilities.

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