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Differential And Integrative Educational Approaches In Foreign Countries: Theoretical Foundations, Methodological Principles And Practical Experience

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Abstract: This article discusses the possibilities of using a differential and integrative approach in the educational system of foreign countries. Its theoretical foundations, methodological principles, and practical experience are also analyzed on a scientific basis.

Keywords: Differential approach, integrative approach, educational principles, interdisciplinary integration, competence, problem-solving task.

Introduction: In the modern education system, the importance of individual approaches and the formation of competencies is increasing. Differential and integrative educational approaches are effective tools aimed at developing students' knowledge, skills and practical competencies. The relevance of this issue is that the higher education system of Uzbekistan requires the implementation of person-oriented pedagogical approaches and the adoption of advanced foreign experiences.

The issues of individualizing the educational process and ensuring interdisciplinary connections have been widely studied in modern pedagogical theories. In foreign countries, differential and integrative approaches have scientific theoretical foundations and are aimed at the maximum development of students' abilities.

METHODOLOGY

During this study, the following methods were used: study and analysis of pedagogical, psychological and methodological sources, didactic materials, curricula and programs, educational and normative documents, textbooks and educational and methodological literature on the topic, interview, observation, pedagogical experience, and processing of research results.

As the theoretical and methodological basis of this article, foreign experiences in the formation of general professional competence of future specialists based on a differential approach, literature and scientific articles that illustrate its principles, analysis of scientists' opinions, and observation of processes were used.

RESULTS

Differential approach - the organization of education adapted to the individual abilities, level of knowledge and pace of development of the student.

Research by T. Armstrong and J. Tomlinson shows differential education as a means of increasing pedagogical efficiency. Tomlinson's model of differentiation of education includes: adaptation of tasks in terms of complexity, process, resources and assessment tools [1, 2, 3].

Differentiated Instruction – the effectiveness of education is increased by adapting to the individual characteristics of the student. Vygotsky (ZPD – zone of proximal development) and Gardner's theory of multiple intelligences are its theoretical basis [4, 5].

The practical goal of a differentiated approach is to develop the student's strengths and support their weaknesses.

In universities in the USA and Canada, a differentiated approach has been associated with an increase in the rate of individual student growth by 20–30% (Tomlinson, 2017).

Integrative approach - development of systematic and analytical thinking through interdisciplinary connections, problem solving.

In European countries, in particular, in the UK and Germany, the methodology of grouping students based on their learning style and pace, and developing an individual plan is widely used. The practice of "Individual Learning Plans" (ILP) is widespread, which determines the personal development direction of each student.

In Canada and Finland, the "Interdisciplinary Learning" model is aimed at bringing education closer to reality. Case-study, project work and problem-solving methods are widely used.

In the USA (Project-Based Learning, PBL), students solve real-world problems using knowledge gained from multiple disciplines. Currently, interdisciplinary integration is accepted as a fundamental principle in STEM (Science, Technology, Engineering, Mathematics) and STEAM (STEM + Arts) education systems.

The theoretical foundations of this approach are based on the ideas of Constructivism (Piaget, Bruner), that is, the active formation of the knowledge that the student is learning, deepening the content through interdisciplinary connections, and Problem-Based Learning (PBL), that is, learning through problem situations, developing the student's analytical and decision-making skills.

Through interdisciplinary project training at universities in Finland and the Netherlands, students have significantly improved their creative thinking and problem-solving skills.

Research shows that combining differential and integrative approaches encourages students to learn independently and actively, allowing them to connect their knowledge with practice.

The implementation of these approaches requires adherence to the following methodological principles:

- Diagnostics of students and determination of the pace of individual development.
- Adaptation of educational resources and continuous assessment of the results of activities.
- Organization of classes aimed at interdisciplinary integration and finding solutions to problem situations.

We will try to reveal the essence of these principles.

The principle of diagnosing students and determining the pace of individual development is a pedagogical principle aimed at determining the level of knowledge, skills and personal development of students during the educational process, as well as determining their growth rates individually. This principle has the following content and essence:

Determining the student's initial state - the student's level of knowledge, skills and qualifications, as well as interests and motivations, is studied; it is carried out through diagnostic tests, questionnaires, observation and other assessment tools; this stage allows you to take into account the individual characteristics of each student.

Determining the pace of development - the rate of growth or change in the student's learning activity is assessed; this is done, for example, by re-examining the knowledge and skills learned over time; it is also determined whether individual rates differ from the overall rate of the group, which serves as the basis for the teacher to develop a personalized approach.

Providing an individual approach - it will be possible to personalize the learning process based on the student's development rate and diagnostic results; for example, giving complex tasks to a fast-developing student, and introducing additional support and a tutoring system for a slow-developing student.

Monitoring and re-evaluating progress - determining the individual pace of a student is not done just once, but through ongoing monitoring; this allows the teacher to adjust the learning process, identify the student's strengths and weaknesses, and develop them.

In essence, this principle is the basis for individualizing the educational process, creating opportunities for student activity and self-development, ensuring effective pedagogical communication between teacher and student, and aimed at improving the quality of education and the maximum development of each student.

The principle of adaptation of learning resources and continuous assessment of performance is a pedagogical principle aimed at adapting learning materials for students to their individual needs and abilities during the educational process and effectively assessing their learning through continuous monitoring. Its essence is as follows:

Adaptation of learning resources - educational resources (textbooks, electronic materials, practical exercises, methodological instructions) are adapted to the student's level of knowledge, learning style and abilities; each student learns through material appropriate to his or her level, as a result of which the educational process becomes more effective; complex, in-depth materials are developed for rapidly developing students, and simple, understandable and supportive resources are developed for students who are experiencing difficulties.

Continuous assessment of activity results - the results of the student's educational activities are assessed regularly, systematically and continuously; this allows the teacher and the student to determine the pace of self-development, to adjust the learning process in time; It is carried out in the form of Formative assessment (assessment of the learning process through tests, questions and answers, mini-projects during the lesson) and Summative assessment (final assessment of knowledge and skills at the end of the module or semester).

Based on this principle, the educational process is adapted to the individual characteristics and needs of students, educational resources and assessment tools are constantly updated in accordance with the growth rate and abilities of the student, aiming to improve the quality of education and create maximum growth opportunities for each student.

This principle serves to increase efficiency by individualizing the educational process, involving students in active participation, and constantly monitoring their knowledge and skills. In this way, educational efficiency increases and the growth rate of each student is maximally stimulated.

The principle of organizing interdisciplinary integration and problem-solving activities is aimed at guiding students in the learning process to integrate knowledge from different disciplines and solve real-life problems. Its main task is to develop critical thinking, problem analysis, and independent solution-finding skills in students.

Interdisciplinary integration is the expansion of a student's knowledge by combining knowledge and skills from different disciplines. Students learn to apply knowledge not only within a specific discipline, but also in a general context. It makes the learning process interactive and systematic. For example, analyzing mathematical and economic knowledge in management or economics.

Orientation to finding solutions in problem situations is to teach the student to independently analyze a specific issue and develop a solution. It develops critical thinking, creative approach and decision-making skills. It encourages the student's independent work. The learning process is organized mainly through case-study methods, project exercises, simulations and role-playing games. It teaches how to solve real-life problems with an interdisciplinary approach.

This principle allows students to integrate their knowledge and skills, learn to apply them in real-world situations, develop the ability to solve problems through an analytical and creative approach, and make the learning process active, interactive, and personalized.

This principle transforms the educational process into a practical, real-life preparation for students, developing interdisciplinary communication. Students not only acquire knowledge, but also develop the skills to independently analyze it and solve problems.

A comparative analysis of practices in the higher education systems of foreign countries is presented in the table below (Table 1).

Table 1.

Practice of foreign countries (comparative analysis)

Country	Type of approach	Assesment criteria	Operation features

USA	Differential	Professional training, practical competencies	Situational tasks, assessment of the graduate's professional abilities
Great Britain	Integrative	Functional competencies, values, life skills	Completing interdisciplinary tasks, comprehensive assessment of skills
Russia	Differential	Knowledge, skills, competence, consistency, efficiency, independent thinking	Assessing the quality of educational outcomes through indicators
Uzbekistan (projected)	Integrative + Differential	Knowledge, skills, competence, analytical thinking	Implementation of advanced foreign experiences, person-centered approach

Analysis.

Based on the above analysis, we believe that in modern educational practice it is necessary to pay attention to the following:

• combining differential and integrative approaches, turning the pedagogical process into an individual-oriented and innovative process.

• assessing students through situational tasks and developing analytical skills.

• strengthening interdisciplinary integration and using various pedagogical technologies.

Based on the research problem, we present a diagram of the development of students' professional competencies based on a differential and integrative approach in credit education (Figure 1).

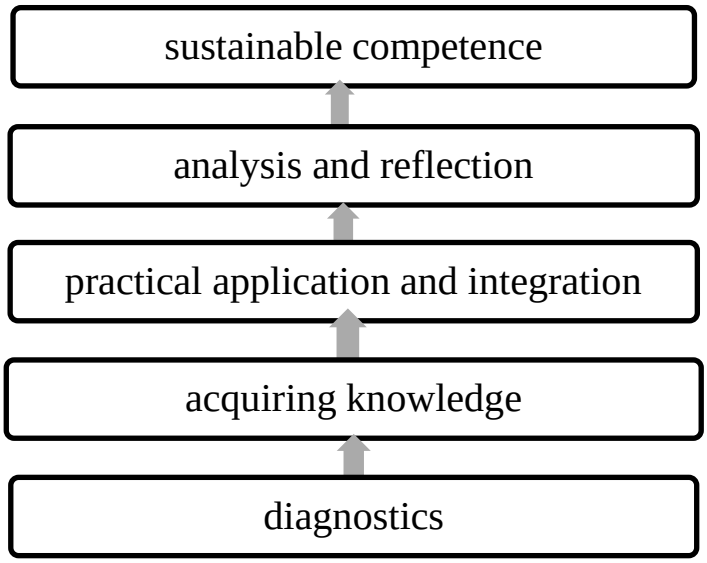

Figure 1. Diagram of the development of competencies based on a differential and integrative approach in a credit education setting.

The development of competencies is conceived as a gradual, spiral and continuous process. In the diagram, this process is represented by sequentially located and interconnected blocks.

Stage 1: Initial (diagnostic) stage. This is where the student's existing knowledge, initial skills, motivation

and interests are determined. This stage is the entry point, and competencies are still manifested in a fragmented, unsystematic state.

Stage 2: The stage of knowledge acquisition and understanding. In this stage, theoretical knowledge is formed, basic concepts are mastered, and the initial elements of interdisciplinary connections appear. This stage creates the cognitive basis of competence.

Stage 3: The stage of practical application and integration. In this stage, knowledge is applied in practical activities, problem situations are solved, and interdisciplinary integration is strengthened. At this stage, competence becomes activity-oriented.

Stage 4: Analysis, reflection and evaluation stage. In this stage, the activity performed is analyzed, mistakes and achievements are evaluated, self-assessment and reflection are carried out. This stage ensures the conscious and stable formation of competence.

Stage 5: Stage of developed (stable) competence. In this stage, the competencies are integrated, reach a level where they can be used in independent activities and adapt to new situations. At this stage, the student acquires ready-made professional competence.

CONCLUSION

It is worth noting that this process is not linear, but spiral in nature, each stage improves the previous one, is readjusted based on the results of the assessment.

The diagram of the development of competencies shows the student's transition from knowledge to practice, from practice to reflection, from reflection to stable competence. This diagram represents a logical model of the process of forming competencies based on differential and integrative educational approaches.

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