Analysis of developmental education models in the ecological education system in Uzbekistan

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Abstract. The article points out the analysis of goals and tasks, models and methods of organization of traditional and developmental education, as well as the cyclic sequence of learning in ecological education. The cyclical model of ecological education, the main stages of the cyclical process of teaching and educational development, the main problems of the reflexive state of the student, the characteristics of educational models, the cyclical sequence of mastering in developmental education have been developed, the form of organizing teaching according to this cycle is considered as a universal mechanism of personal experience and ability development, and the essence of developmental education is revealed.

1 Introduction

Ecology is one of the biggest tasks in Uzbekistan. In order to further develop this educational system, the Decision of the Cabinet of Ministers of the Republic of Uzbekistan dated May 27, 2019 No. 434 “On approval of the concept of development of ecological education in the Republic of Uzbekistan” was adopted.

The goal and the outcome of instructional study in ecological education system is to develop the competence of future specialists aimed at carrying out their activities successfully in specific production conditions, to provide theoretical knowledge and practical skills to make independent decisions not only in standard situations, but also in changing non-standard situations [1].

The goal and result of the traditional educational model in the field of ecology is to provide knowledge on solving standard tasks and to create practical skills. Theoretical knowledge is mainly imparted to students through lectures. However, the development of lectures in accordance with the requirements of the time is limited within the framework of the traditional educational model. Because it is necessary to look at the lecture not only as an organizational form of teaching, but also as a management tool for students to think independently, to make practical decisions in solving problems. Developmental education is person-centered education. In the person-oriented field of humanitarian pedagogy, special attention is paid to the relationship between the teacher and the student and the...
2 Methods and materials

In the research process, scientific and educational literature analysis, pedagogical observation, comparative analysis, generalization, pedagogical experiment and foresight methods were used.

The center of the concept of person-oriented education in ecological education is self-activation and it is aimed at developing the internal resources of a person [8]. We can define the main characteristics of individuals with the ability to self-activate as follows:

- accepts reality clearly, without hesitation;
- quickly and accurately perceives himself and others;
- is highly independent;
- has high accuracy and focus in solving problems;
- extreme indifference and tends to be alone;
- resists independently and culturally;
- rich in emotional reactions;
- has a good relationship with others;
- is highly satisfied with his situation;
- democratic character;
- has a strong creative ability;
- has high human qualities;
- has a high frequency of high-intensity experiences.

It is interesting to work with such individuals and they can find their place in life without making great demands and complaints to parents, teachers and the state. They are independent, self-directed individuals depending on their abilities. It is not easy to educate such students. However, a teacher working on the principle of humanistic pedagogy and person-oriented education should be able to find a way to the heart of such a student.

K. Rogers [3] explains the main factors of humanistic pedagogy as follows:

- the teacher accepts the idea that all students have the ability to read;
- the curriculum meets the student’s interests;
- creation of a free atmosphere in the audience, no pressure from the teacher;
- creation of opportunities for students to actively participate in the activities of the educational institution;
- self-assessment (except for external assessment);
- not only the result of the learning process, but also the constant openness to participate in it and feel responsibility.

The following conditions should be created in the educational institution for the implementation of self-assessment and self-activation methods of students within the framework of humanistic pedagogy:

- open and changing lesson schedule;
- pay great attention to the independent activity of students;
- creating ample opportunities for students to learn independently;
- paying serious attention to creative works of students;
- paying attention to mutual support in the educational process;
- paying special attention to self-assessment;
- respecting the personal value and abilities of students.

Working in small groups is carried out on the basis of mutual support and joint activity. In this case, the issues of self-esteem and respect for the dignity of a person are very sensitive [4].
What factors influence the formation of a student's or student's self-assessment? K. Rodgers defines self-awareness as the development of positive perception, understanding, and independent acquisition of knowledge in a person. However, R. Burns noted, the result of self-awareness is not only self-control, but also confidence in one's own strength, the ability to make the right decisions about oneself, that is, how active a person is in building his own life. R. Burns relies on the following simple formula proposed by W. James in self-evaluation:

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\text{Self} = \frac{\text{demand}}{\text{success assessment}}
\] (1)

This formula shows that there are two ways to strengthen the ability of self-evaluation. Either increase the numerator in the picture or decrease the denominator. Because these two indicators play an important role in self-evaluation. An important role is played here by the ability of a person to evaluate his own success and to be able to make the right demands on himself. “A soldier who does not dream of becoming a general is not a soldier,” says a popular proverb. However, there are many soldiers and few general posts. Also, there are many proverbs about over assessing one's strength. That is, when a person makes demands on himself, it is necessary to be able to correctly assess his strength and capabilities. If the demand is higher than the opportunity, it will be difficult to achieve success or not at all, which will also damage one's reputation and health. Also, the smallness of demand prevents a person from self-activation and creativity.

3 Results and discussions

The teacher plays a decisive and important role in the formation of the student's positive self-evaluation ability and ecological knowledge. This applies to any form of education and education system. The teacher’s ability to self-assess is also important in choosing one or another teaching method. A teacher with low self-esteem tends to use simple, traditional teaching methods. A teacher with the ability to self-evaluate is distinguished by the ability to think creatively, create lively communication during training, connect with students and provide them with all-round mental support. K. Rodgers [10] indicated three main conditions for personality change in the process of psychological therapy from a pedagogical point of view: empathy, unconditional positive attitude towards the student, sincerity in the relationship with them. Let’s consider the above theories based on the analysis of developmental educational models.

We will dwell on the role and functional role of the lecture in the developmental education model. In order to determine the role, essence and functional function of modern lectures in the educational process, we will briefly analyze the following two models of developmental education.

1. Cyclic model of developmental education.
2. Activity development model.

A cyclical model of developmental education. According to the basic concept of andragogy, the education of adults includes several cycles.
The development of teaching and learning occurs during a cyclical process, is based on experiences and consists of the following stages (Figure 1):

- **Specific experiments** begin with the collection of data obtained as a result of the student's personal experience and observations.
- **Reflexive observation** includes the processes of searching for the meaning and essence of the collected data, analysis and thinking.
- **Abstract conceptualization**, a model and ways of solving the identified problems are created.
- **Active experience** - practical experiences are conducted.

This model has its own important features, in which teaching is organized in the form of a cyclical process consisting of sequentially connected stages. The process begins with experience and there is never a break between stages. Cycles not only replace each other based on a certain sequence, but also oppose each other. For example, concrete experiences are opposed by abstract conceptualization, while active experience is opposed by reflexive observation. In the process of teaching, different pedagogues pay more attention to one or another part of this cycle, and this is what Kolb and Fry call "teaching style".

According to this model, the student determines in which area his experience and knowledge are insufficient, formulates the problems he is struggling with and determines the means and ways to solve these problems, determines the educational goal.

**Activity development model in ecological education.** Unlike ordinary education, in higher education, students are not only given new knowledge and information in the subject, but also are taught to develop and process knowledge, develop skills to apply the acquired knowledge in practice. In the process of education, models change places - the appearance of professional activity changes, the student's ability and learning develop, and the educational goal changes. The development effect of educational activity is characterized by this. The developing activity takes place in the following three directions:

1. **In personal activity**
2. **In activity reflection**
3. **In the methodological environment**

Here, methodology is considered as a set of ideas, concepts, methods and tools aimed at the difficulties that arise in the acquisition of knowledge. From the point of view of the educational process, this model can be read as follows:

During his activity, the student faces a number of problems that lead to a reflexive state and successively carries out the following three processes:

- **Analysis**, researching one’s own activities, that is, identifying problematic situations in reshaping and mastering activities;
criticism - the cause of problems in mastering education. Normalization is a method of development of activity. Coming up with ideas, hypotheses and methods aimed at solving the problem, creating new standards. Comparing traditional and developmental educational models, we can determine the following (Figure 2):

In the developmental education model, the lecture is conducted in the form of a dialogue, and the student has the opportunity to analyze the content of the lecture, to search, to generate new ideas, to express his ideas and thoughts, to listen to the opinions of other students on this problem, and to express his attitude to him. The student actively participates in the lecture, not only as a listener, but as a participant in the process. The distinctive features of the organizational form of developmental education include the following three types of pedagogical communication:

1. Personal independent work of the student.
2. Group independent works of students.
3. Group independent work of students with the participation of the teacher.

Fig. 2. Characteristics of ecological educational models. Together, these three types of pedagogical communication form a complete cycle of competence development required in the training of specialists, and this process is carried out in the following order. The student first gathers information on the subject (science) being studied based on his personal experiences and knowledge, and begins to study them independently. Difficulties and misunderstandings arise during learning due to insufficient knowledge and experience of the student. Then, during group independent training, they try to master the information that they do not understand using the knowledge and skills of other students. Later, solutions to the questions and problems that arise will be clarified during independent education with the participation of the teacher. This cycle can be described as follows. The form of organization of training according to this cycle is considered as a universal mechanism for the development of personal experience and abilities, revealing the essence of developmental education. In teaching based on the developmental education model (Fig. 3), learning begins with the student’s independent work (individual independent, group independent, independent work in the audience, independent work outside the audience, etc.), and this type of training is the leader. Other types of training are secondary.
One of the main approaches to developmental education in ecological field is person-centered. The center of the concept of person-oriented education is self-activation, and it is aimed at developing the internal resources of a person. The following conditions should be created for the implementation of self-assessment and self-activation methods of students within the framework of humanistic pedagogy [5] in higher educational institutions:

- open and flexible class schedule;
- paying great attention to the independent activity of students;
- creating ample opportunities for students to learn independently;
- paying serious attention to creative works of students;
- paying special attention to self-assessment;
- respecting the personal value and abilities of students.

Fig. 3. The cyclic sequence of mastering in developmental education in ecological education.

Working in small groups is carried out on the basis of mutual support and joint activity. In this case, the issues of self-esteem and respect for the dignity of a person are very sensitive. The teacher's unconditional positive regard for the student means that he believes in the student's confidence and potential to understand and change himself in a positive direction. “Acceptance, assimilation is also characterized by the understanding of the child's limitations in this period of development” says R. Burns. According to psychologists, the development of a student's positive self-evaluation ability is mainly carried out using two mechanisms:

- if the student does not try to ignore when he shows his shortcomings and some bad characters;
- if the student believes that they will treat him well regardless of his achievements and shortcomings.

Therefore, the teacher should correctly assess the student's success, taking into account his capabilities.

Implementation of developmental educational elements in the training of future ecologists in the higher education system of Uzbekistan requires research on the creation of a comprehensive future higher education system. Of course, forecasting the future on the basis of ecological foresight plays an important role in this [6,7]. The use of foresight in the educational system is a new technology in the higher education system of Uzbekistan.
In the process of transition to developmental education, the level of application of digital technologies in education plays an important role. Because the quality of independent education, which is the basis of developmental education, directly depends on the use of digital technologies. However, it is necessary to study the positive aspects as well as the negative aspects of the widespread use of digital technologies in the educational process. After analyzing the works of many scientists, they came to the conclusion that the wider application of digital technologies in the sphere of higher education in Uzbekistan requires a thorough study of this process, comparing the positive and negative sides [10].

4 Conclusions

In the person-oriented technology of ecological education, self-activation or awakening of all one's potential abilities and natural talent and applying it in life, self-activation, self-confidence play an important role.

In the person-oriented field of humanistic pedagogy, it is necessary to pay special attention to the relationship between the teacher and the student and the students. The student should trust the teacher, know the teacher not as a person who conveys knowledge, but as a kind, demanding, open-minded teacher. The teacher's relationship with the student should be sincere and natural, and there should be no artificiality in meeting the student's needs and answering his questions. The teacher should correctly assess the student's success, taking into account his capabilities. The problem of self-evaluation is a problem of reflection. The concept of self-assessment is different from self-monitoring and self-examination.

In order to objectively assess oneself in terms of ecological knowledge, ecological culture, environmental consciousness and law, a rating scale should be formed to compare the student's knowledge in the field of ecology.

When demand exceeds capacity, success becomes difficult or impossible, which also damages one's reputation and health. Also, the low level of demand prevents a person from self-activation, independent scientific-creative activity.

References