

Modeling of value-based and meaningful choice situation for trainees in digital pedagogy

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Abstract. This paragraph is devoted to the peculiarities of creating value-based and meaningful choice situations for students in the conditions of digital pedagogy. As part of the study, a didactic model was developed in the pedagogical process, aimed at increasing the motivation of students by creating situations of sense choice using information and communication technologies (ICT). The proposed model of value-based and meaningful choice situations for students includes: purpose, principles, content, technologies, methods and teaching techniques. These components in the complex regulate emotional and sensitive as well as motivational and value-based manifestations of students in situations of choice. The diverse content is integrated into students' personal sense, and technologies and methods directly "incorporate" the student's sense development process.

1 Relevance and purpose of the study

The main factors for the development of a model of value-based and meaningful choice situations in the conditions of digitalization were:

- The educational system's focus on the learning process rather than on the student as the subject of this process (Abakumova et al. 2016; Fedotova et al. 2017);
- Lack of conditions for the holistic development of the student's personality, the disclosure of his personal and creative potential in the educational process (Abakumova et al. 2017; Abakumova et al. 2019);
- Introduction of information and communication technologies in the sphere of education (Vatunsky 2018; Yamaletdinova and Medvedeva 2016).

Due to the situations of choice, it is possible to initiate the personal meanings of the student, to reveal his inner world, as well as to develop an emotionally strong-willed sphere. After all, the lack of creativity and the possibility of choice can cause exclusion from study (Osin 2015; Barnhardt and Ginns 2014; Jones 2017; Tomaszek 2020). In conditions of alienated activity, the resulting meanings exist more at an egocentric level, which entails irreversible consequences in society until the loss of values of relations (Abakumova and others 2019). Therefore, modeling value-based and senses choice situations for students is often of paramount importance.

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At the same time, the development of the digitalization of education requires an increasing use of ICT in the educational process. This fact raises the question of how to create situations of choice for students in conditions, for example, e-learning as a form of digital learning, or what opportunities the use of ICT can provide to initiate the student's personal meaning, especially due to a wide range of publications reflecting the advantages, disadvantages and problems of digitalization of education (Molchanova 2019; Piroglanov & Pashkov 2019; Andryukhina et al. 2020; Starichenko 2020; Starichenko 2020; Vorobyova et al. 2021).

Thus, the lack of research on the didactic conditions and means of developing the personal sphere of students through the use of value-based and meaningful choice situations using ICTs in teaching situations served as the basis for choosing the goal of the study. The purpose of the study is to determine the features of modeling self-disclosure situations of the value-sense choice for students in the conditions of digitalization in the sphere of education.

2 Conceptual modeling of value-based and sense choice situations for students

Digital pedagogy today is the pedagogy of the formation of the student's creative personality by means of innovative information and communication technologies (Skulkin 2021). Opalko (2016, p.96) proposes to consider "digital pedagogy" as "the use of electronic elements in the educational process in order to strengthen and change educational experience." It can be argued that digital pedagogy is the introduction of various electronic means of ICT in the sphere of education, at different levels (from the introduction of interactive electronic boards to the creation of electronic educational resources). Such means can create conditions for individual educational trajectories in the educational process, and, therefore, have the potential to create sense choice situations.

A value-based and sense choice is defined by us as a choice between alternatives with the construction of comparison criteria by the subject, where comparison criteria are built through the prism of existing values and meanings, and the choice of an alternative can be made in favor of the personal sense that consequently arises. The sense can change, transform not only from person to person, but also from situation to situation (Frankl 1969), so the pedagogical situation is the driving tool of the model. According to Borytko (2015), the pedagogical situation is a system of pedagogical (including didactic) conditions for the formation of a person, deliberately designed or used by an educator for the purpose of education. The pedagogical situation is part of the educational process and includes its integral characteristics. It is the result of the interconnections and interactions of all its components (goals, principles, content, forms, methods, relationships, requirements, etc.).

The types of educational value-based and meaningful choice situations for students in the educational process can be analyzed on two classification grounds: on the peculiarities of semantic influence and on the operational structure. In accordance with the proposed criteria, the following situations are distinguished: situation of direct and false choice, situations of an antinomic nature; and situations aimed at "retaining" perceptions of the student's complex inner world and at mainstreaming core values.

However, in order to implement the appropriate types of situations, it is advisable to highlight the basic didactic principles of choice modeling situations in digital pedagogy: personal and sense orientation; use of visual aids (multimedia); integration; problematic; alternative; variability; individualization and differentiation; creation of a positive emotional background and psychological comfort in the learning environment; research and creative orientation. The principle of using visual aids in the conditions of digitalization is determined by the creation of various color images, relying on the sensory system (in most

cases, visual and audio ways of perception), using multimedia means. Indeed, images impressed in the structure of human consciousness play an important role in revealing the meanings, self-revealing the subjective experience of students (Abakumova et al. 2019). Affecting the emotional and sensuous sphere of the person in which the images are impressed, it is possible to change the perception, and, therefore, the semantic choice. However you shouldn't forget about rational application of visual aids in the conditions of digital training as owing to special features of the network "ready" elements (for example, various video, animation, smiles, emoticons, stickers) consisting sometimes, of the contrary, in the excessive brightness of representations, there can be an opportunity to much more stronger elimination of ideological and semantic assessment and expressional transfer of the message (the text, the contents). This phenomenon can disrupt or even interrupt intergenerational cultural and semantic dialogue, which means the impossibility of education as a pedagogical process of transferring cultural traditions.

Integration is considered as a principle of the model, pulling into a common node the meanings of different types of content, there is a junction of the meaning fields of various subjects and objects of the pedagogical process. Different elements of the pedagogical process can be distinguished. They can combine content of different nature, attract them into one set, and which subsequently create on the basis of this prerequisite for creating a value-based and sense choice (Brizhak at al. 2019). These elements include: problems, problems-antinomies, events, specific facts, personalization. Moreover, by means of ICT, it is much easier to create personalization elements, for example, these may be elements of gamification or the ability to find symbols or the image of popular cartoon or film heroes for the appropriate age.

Creating a positive emotional background and psychological comfort in the learning environment is very important in initiating meaning, but it is very difficult to implement this principle due to the absence of dialogue forms of training (it is not the secret that e-learning is sometimes deprived of dialogue for various reasons). And communication plays an important role in the transaction of meanings (Kagermazova 2020). It is therefore advisable to include in the e-learning process techniques and means to compensate for this disadvantage. Today it can be virtual voice assistants, charged with various functions (speech recognition, simulation of live dialogue, answering user questions). Getting appreciation in the form of postcards and etc. can support the success of a certain task. Also today, affirmations are relevant as positive statements. They can be used in digital environment depending on the source of the illness in situations of choice, for example, affirmation for self-confidence; statements for calm, when the student may experience anxiety, fear; affirmations for decision-making. Affirmations can reduce stress, increase wellbeing, improve academic performance, and make people more open to behavioral change (Cohen and Sherman 2014; Liu and Huang 2019).

The proposed principles can allow to update the personal experience of students systematically and holistically, to meet needs and semantic preferences.

The implementation of sense development, and at the same time the disclosure of subjective experience, is possible when the student is immersed in a dense semantic environment, a multicultural educational space. In this regard, the problem of constructing content arises. In this content there is a variety of meanings and semantic shades, so that the student's consciousness could find the meanings of interest to him. The unit of content becomes the relation "personal experience - objective value," i.e. personal meaning. In the absence of this attitude, there are no initiations to the subject activity of the student. The quality of the content is determined by the composition of the items included in it, potentially capable or unable to influence the core basis of the child's personality - the value system, and the quality of the method consists of the ability or inability to close the subjective experience of students on the objective realities of reality reflected in the content

of education, and thereby enrich, change, update the values available to them (Abakumova, 2014).

The educational process that has gone beyond the framework of cognitive orientation, and the acquired orientation of a personal and sense character, also requires consideration of learning technologies not only in the didactic plane, but also from psychological positions. Therefore, semantic technology as a training technology becomes an urgent tool capable of self-revealing the inner world of the student and initiating semantic activity.

The use of semantic technology as an effective modern learning technology is reflected in various publications (Abakumova and Zorina 2017, Abakumova et al. 2019, Abakumova et al. 2019, Elagina et al. 2019, Zorina and Zelenov 2016, Stakanova 2018). However, from all the many semantic techniques (Table 1), we identified those that can be implemented in the context of digital pedagogy and aimed at:

- subject (subjective) experience of the student;
- creativity;
- problem situation;
- specifics of the act of choice (sacrifice).

These semantic technologies play an important role in the semantic initiation of a value-based and sense choice, making a significant contribution to semantic didactics.

Table 1. Semantic techniques for the implementation of the value-based and meaningful choice of the student in the conditions of digital pedagogy.

Type of semantic (technology)	Example	Methods and techniques in the educational process
Associative Technologies	Association, personality-sense generalization, working with images and context	Method of free associations, translation of theoretical material into figurative, structural-logical diagrams, symbolization, method of collision of images, color-shaped, method of thematic immersion
Self-expression technologies	Situations of choice, personalization, gamification	Method of living (empathy), imagination, project method, free choice method, game
Creative technologies	Virtual alternative learning models, creative tasks, digital art technologies, multimedia didactics technologies, installation, reframing	Virtual simulator, joint presentation, essays, multimedia art technologies (music therapy, electronic bibliotherapy, visual art therapy), photo projects, linguistic constructs, failure value method
Problematic technologies	Tasks on meaning, mindsight, insight, personality-sense generalization, intelligence maps	Virtual simulator, mindfulness, mental maps, introspection, tasks for life sensations
Support Technologies	Reformation of meaning and context, linguistic affirmations, vitality, value orientation, virtual alternative learning models	Metaphors, expressions with a quantifier of universality, language structures that affect personality perception, positive affiliations, attitudes to self-affirmation, positive attitude, gratitude, personalization, method of value failure

We should note that the same semantic techniques, which can be found in different forms, are used differently depending on the educational purpose. For example, the method of value failure can be used as a technique for revealing the creative potential of students or

as a technique for reforming. Hilppö J., Stevens R. (Hilppö and Stevens 2019) proposed to rethink the view of the student's failure from the positive side "Failure is another try" ("Failure is just another try"). In order to do this, we should use in training - FUSE Studio - an alternative infrastructure for teaching at schools, arranged on the basis of students' principles of choice and their interests. "FUSE Studio" refers to virtual alternative learning models at schools (Stevens et al. 2016). The goal of the model is to cooperate students, instill skills, and develop creativity, critical thinking and other important competencies relevant for students of the 21st century.

The presented model is focused on the student's value-based and sense sphere. An integrated approach in the development of model components (goals, principles, methods, and technologies, content) creates the conditions for revealing the personal and semantic potential of a student not only as part of contact learning, but also as part of e-learning.

3 Diagnostic results of testing a didactic model of value-based and meaningful choice situations for students in digital pedagogy

To implement the empirical part of the study, a practical base was formed: students of South Russian State Polytechnic University and Don State Technical University (a total number of people is 437) took part in it. Students were assigned to control groups (218 students) and experimental groups (219 students). For all groups, electronic means of training were used (except for traditional ways of training); only in experimental groups the situations of the value-based and sense choice for students were simulated.

The study included two areas: the development of the value-based and meaningful sphere using electronic learning tools and academic (indicators of academic achievement and quality of education). During the formative experiment, the following criteria for the effectiveness of the model were identified: meaningful orientation, educational motivation, academic indicators, and self-realization of the personality.

The formative stage showed that the students of the groups are characterized by higher scores for most sub-scales of the life purpose orientations test in the Russian version of D. A. Leontev than at the ascertaining stage. The overall measure of meaningful life in the experimental groups increased by 6.5%, and in the controls remained virtually at the same level. The processed data of the test indicate in general that students perceived the length of their life path as interesting, emotionally saturated, and filled with meaning. They noted partial satisfaction, readiness to take responsibility for building their lives. The active aspiration for the future, for the direction to understand the meaning of their activities, shows in general the presence of a subjective position.

In order to determine the level of internal motivation of the training activities of the students, a questionnaire was conducted on the methodology of diagnosing the motivation orientation of studying the subject of D. Dubovitskaya. The results of the questionnaire at the final stage of the study on the methodology of D. Dubovitskaya confirmed the effectiveness of the application of the learning model: the percentage of students with internal motivation increased by 11.4%. There was internal motivation for training activities, this fact is confirmed by empirical evidence (Table 2).

Table 2. Results of student motivation direction diagnostics at the summative and formative stages.

Type of motivation	Summative stage		Formative stage	
	Students, %		Students, %	
	C. group	E. group	C. group	E. group
internal	65,2	59,8	70,8	48,4
external	34,8	40,2	29,2	51,6

Average academic indicators throughout the formative study showed an increase in the quality of training in the discipline. Qualitative indicators (rating "good," "excellent" with a five-point assessment system) of academic performance increased by 12.4% in experimental groups. Thus, the processing of academic indicators of experimental groups at the formative stage showed an increase in the quality of training in the discipline using the model on a meaning-making basis than the control groups who continued to engage in the traditional training system.

To determine the specifics of the student's self-fulfilment, the methodology "Multidimensional scale Questionnaire for personal self-fulfilment" (developer - S.I. Kudinov) was used (Fig. 1). The questionnaire is aimed at identifying two most important characteristics, especially regarding situations of value-based choice: self-fulfilment and self-actualization. Self-fulfilment as a manifestation of the student's personal potential is considered the personal basis for the manifestation of self-actualization.

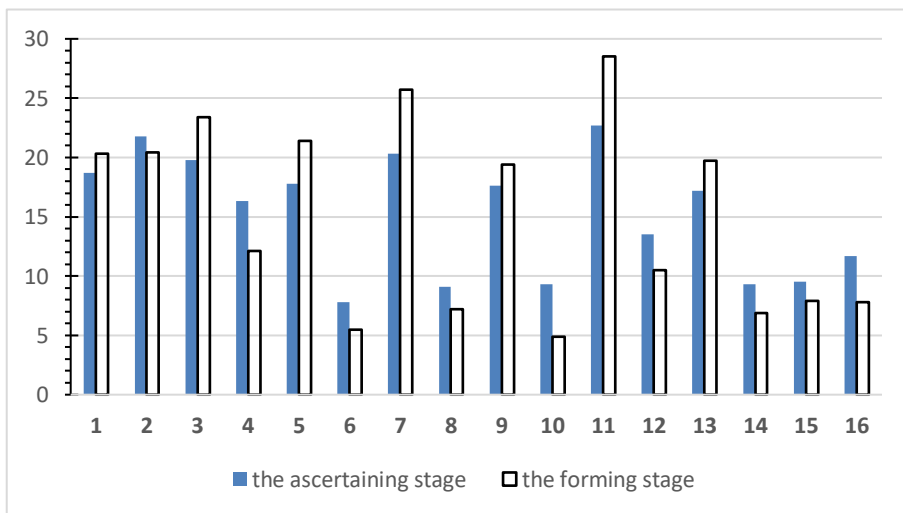


Fig. 1. Mean values for variables in experimental groups in the initial and final stages of the study (in points). Conventional signs: on the abscissa scale: 1 - social and corporate installations; 2 - subjective-personal settings; 3 - activity; 4 - inertia; 5 - optimism; 6 - pessimism; 7 - internality; 8 - externality; 9 - sociometric motivation; 10 - egocentric motivation; 11 - creativity; 12 - conservativeness; 13 - constructiveness; 14 - disruptiveness; 15 - social barriers; 16 - personal barriers.

The results of the diagnosis of "Multidimensional scale Questionnaire for personal self-fulfilment" concluded that there are statistically different characteristics in the experimental groups. The primacy of the obtained values of socio-corporate attitudes,

sociometric and egocentric motivation confirms the model's appeal to group-centric or prosocial, higher meanings, i.e., in most cases, the motivation for the self-fulfilment of the personality is not personal motives of an egocentric nature, but the desire to realize for the benefit of a common cause or people, which cannot be stated in control groups. So, for example, the value of the indicator of egocentric motivation in experimental groups decreased by 4.2%, and the level of subjective-personal attitudes decreased by 1.4%. In control groups, these indicators, on the contrary, increased: the value of the egocentric motivation indicator increased by 3.2% and the level of subjective-personal attitudes - by 2.4%.

The results of the study, presented as comparative results at the stages of summative and formative assessment, indicate the general dynamics of the value-based and meaningful; motivational and personal development of students. The introduction and use of the model of self-disclosure of the value-based and meaningful choice of students with the use of ICT in the educational process is possible only with a comprehensive approach on a meaning-making basis, taking into account the specifics of the educational institution, the work program and the requirements of the Federal State Educational Standard.

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