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**PERSONALITY-BASED APPROACH TO TEACHERS' TRAINING
COLLEGE BACHELOR TRAINING FOR PROFESSIONALLY-
RELATED PRACTICE**

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Abstract

The paper focuses chiefly on modeling personality-oriented (learner-centered) situations of problem and moral character in educational process which require from students to adopt individual conscious attitude towards the problems and reflexive behavior towards nature and society.

The aim of the paper is to study the possibilities of using learner-centered education in training Bachelors of Biology for professionally-related practice in school education system.

The findings of this study revealed that using learner-centered situations based on the interdisciplinary relations of Natural science disciplines and the Humanities in the teachers' training college contributes to qualitative growth of the activity-creative and personality-related components, and hence to forming undergraduate teachers' professional competence.

The current study results show that the students' learning process that is based on the learner-centered education will be more effective if the following conditions are implemented in its course: modeling learner-centered situations of problem and moral character of various types and different levels of complexity; the teacher and student's collaboration in the teaching and learning process; verbalization of the sense of their collaboration and the analysis of its effectiveness.

This paper material presents practical value for university teachers who are involved in professional practice in the area of "Teacher Education".

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Keywords: Learner-centered education, learner-centered situation, professionally-related practice.



1. Introduction

The tendencies that were set off by the current reforms in the Russian education system in relation to the introduction of the Federal Educational Standard and the Teacher Professional Standard which have been determined by the society's needs for humanization, with the focus on learner-centered education that is becoming one of the major priorities in the development of the education system in Russia.

The main function of learner-centered education contents today is to ensure forming of a learner's personal educational senses system. Each learner's personal subjective meaning of education comes first now, not the objective component of educational contents.

In Russian and foreign pedagogics such understanding of learner-centered education is supported by theoretical and methodological studies of foreign scholars-humanists (Maslow, 1972; Rogers, 1997; Frankl, 1984, Freinet (1990) and by conceptions of Russian scholars (Bondarevskaya, 2000, Dubinina, 2013, Zhokhov, 2002, Pligin, 2007; Serikov, 1999; Yakimanskaya, 2000; Khutorskoy, 2005 and others.), who perceive it as a special type of education oriented towards creating conditions for the spiritual and moral self-development of the individual.

The representatives of humanistic psychology Maslow (1972), Rogers (1997), Frankl (1984) view an individual as having the highest value for a society which is in need of self-realization and self-actualization. In their view teaching and learning processes should be based on the inner life of an individual, they should reflect his/her needs, feelings and values.

Thus, the methodology of learner-centered education reflects the recognition of a person's unique subjective experience, his/her identity and self-value as well as the possibility of exercising free will in teaching and learning process.

The analysis of Russian researchers' current conceptions which are based on integration of scientific knowledge of man's psychology, basic tendencies in modern development of pedagogic ideas shows ambiguity in understanding learner-centered education content.

According to Pligin (2007), the model of learner-centered school differs significantly from other existing models and pedagogic systems. First of all, it provides a child with greater freedom of choice in learning process. Within its framework a learner does not adjust to the teacher's teaching style, conversely, a teacher, possessing more a diverse set of teaching skills, adjusts and coordinates his/her methods and technique in accordance with a child's cognitive characteristics.

As Yakimanskaya (2000) thinks learner-centered education is a kind of training when a child's personality is prioritized, when his/her identity, self-value and his/her subjective experience are always considered and taken into account. Learner-centered education stems from the assumption that a learner's unique subjective experience is an important source of individual life activity which is displayed, in particular, in cognition. Thus, it is recognized that in education we witness not only the learner's interiorization of given pedagogic interventions but also "the encounter" of given and subjective experiences, peculiar "cultivation" of the experience, its enrichment, increment, transformation, which, in fact, constitutes a "vector" of individual development. The recognition of the fact that a learner makes a major figure in teaching and learning process is the essence of learner-centered pedagogics.

According to Serikov (1999), learner-centered approach may be considered as building of a special pedagogic process (with specific goals, content, technologies), with special focus on development and

self-development of a learner's personal qualities and characteristics. Though theoretical foundation being sufficiently developed, it should be noted that many studies develop the problem of learner-centered education (learner-centered technology, learner-centered approach) primarily, in general pedagogic aspect, consider the methodological specificity of its use in comprehensive school focusing on a learner's personality.

Serikov (1998) thinks that using learner-centered education is a two-sided process, that "constant training of the future teacher's professional activity related to the realization of the learner-centered approach (revealing axiological aspects of material, transfer from utilitarian to spiritual senses, actualization of educational dialogues, collaborative search for ideas and values, etc.) is indispensable.

Consequently, the most important task of teacher education colleges is to train competent specialists who are aware of the priority of spiritual and moral values, capable of self-development, who treat learning as a process of meaning-creating and self-actualization.

It is worth noting that today there are a number of dissertational studies devoted to the training of future teachers, to name a few: Akopyan "Learner-centered Communication Technologies In Training Pedagogical University Students" (2005); Gorbacheva "Training Teachers' Training College Students Pedagogical Interaction In Learner-centered Education" (2000); Kovaleva "Modern Universities Students' Personally-Oriented Training As Factor Health Preservation Factor" (2004); Shelikhova "Future Primary School Teacher's Learner-centered Training Doing Plot Mathematical Tasks" (2009).

For all definite development and experimental research in this area, it should be noted that the problem of a competent teacher training for using personality-oriented education in the context of higher education system's modernization is still topical and requires further study.

2. Problem Statement

The problem is that no comprehensive study on using learner-centered education in teachers' training college in teaching Natural science disciplines has been carried out yet. Study of this kind becomes relevant in the framework of implementing the project "XXI Century Teacher" being realized in KFU.

At the core of the our study there the idea that learner-centered education can be achieved through organizing learning activities involving learner-centered situations with regard to subject-subject relations of the learning process while learners' personal experience, moral potential, cognitive interests are taken into account.

According to Serikov (1999), it is the learner-centered situation that is the core of learner-centered approach which, in his view, is a learning situation requiring the display of the learner's personal attitude.

Consequently, the learner-centered situation is considered as a special pedagogic mechanism when the learner is put in new conditions in which transformation of his/her usual course of life activity and thinking takes place, which requires comprehension. The situation in question stimulates inner collision, change, awareness of oneself in the context of a new system of relations, acquiring new experience and meaning.

Education content in which learner-centered situations are embedded is expected to promote the choice of values which are significant for a person, to mastering a specific knowledge system (teaches to

think), to revealing a range of interests related to scientific and life problems and learning to master methods of their solving, to identifying a reflective world of one's own self and ways of managing it.

Hence, learner-centered training content in Bachelors of Biology training for learner-centered practice in the system of school education, in our opinion, consists of the following components:

- axiological, whose purpose is reveal to learners diversity of value system and help them in choosing a personally significant system of value orientations;
- cognitive, which is related to the system of scientific knowledge of man, culture, nature, noosphere as basis of spiritual development;
- activity-creative, which contributes to learners' forming of various activity methods;
- personality-related, which ensures self-knowledge, development of reflexive abilities, mastering ways of self-regulation, self-improvement and self-determination, forming life position.

All of the components are related to intellectual activity. It stands to reason that all of them are of great significance but in our opinion, in training under study the personal component is the determining and system-forming one.

We should bear in mind that the main goal of learner-centered education is forming students' personal activity conditioned by their psychological peculiarities, urgent needs, objectives and motives that are significant to them, comprehensible meanings, dominant relations.

Thus, education in a teachers' training college should promote the student' forming of such personal value system which would not contradict the objective processes ongoing in the modern, dynamically changing world, and would help the student's developing personality to form sufficiently definite and consistent understanding of the surrounding world and his/her place in it.

3. Research Questions

3.1. Results of the ascertaining experiment

Goals of natural science education include: the development of a critical environmental consciousness, the use of critical thinking and problem solving skills, the development of an environmental ethic (Fien, 2009).

Such education is relevant as it deals with problems which are modern to students; is holistic as it considers environmental issues in many aspects in teaching and learning; it also teaches values, which is one of its components; besides, it has an action-orientation in encouraging learners to take actions to bring about change in their own lives and in their communities (Tilbury, 1995).

The experimental study, conducted over five years (2011-2016), was carried out involving 1st and 2nd year students of the Faculty of Biology of Elabuga Institute KFU. 127 students in the field of training: 06.03.01 "Biology" (Skills profile "General Biology") and 44.03.05 "Teacher Education" (Skills profile "Biology and Chemistry") participated in the study.

To study the axiological component questioning and observation methods were employed. The level of empathic abilities was evaluated using Boiko's technique (Fundamentals of psychology, 2001).

The study of the learner-centered component required working out and applying a set of special tasks including tasks of problem and moral character, which demanded from students to display

appropriate mental activity. When evaluating the active-creative component, closed type questions to reveal abilities to make moral choice, expert questioning and constant observation of students' activity were used.

A questionnaire to evaluate students' knowledge was designed. Information on each index was elicited from questions of open or closed types. The use of this or that question type was conditioned by qualitative characteristics of the index under study. To reveal the depth and completeness of knowledge, peculiarities of thinking, the student's personal attitude to the given problem situation open type questions were used. When there was necessity to simplify the study, to exclude divergence of opinion, to reveal the intensity of this or that index closed type questions were used: the student was offered to choose from several most realistic variants that one which most closely corresponds to the characteristics of his/her personality.

The findings of the ascertaining experiment showed the following results (Table 01):

Table 01. Results of the ascertaining experiment.

Level	Cognitive		Axiological		Activity-creative		Personality-related	
	The 1st year students	The 2 nd year students	The 1st year students	The 2 nd year students	The 1st year students	The 2 nd year students	The 1st year students	The 2 nd year students
High	-	-	-	-	-	-	-	-
Medium	7,5	28,3	24,5	15,1	43,4	56,6	32,1	34,0
Low	5,1	54,7	54,7	58,5	43,4	24,5	24,5	49,0
Very low	41,5	17,0	20,8	26,4	13,2	18,9	43,4	17,0

The ascertaining experiment showed that the cognitive component is developed insignificantly, especially in relation of first-year students, their knowledge is superficial, not sound and not complete in volume, there is no understanding of its social and personal significance, interdisciplinary relations are not revealed. Only 7,5% of first-year students demonstrated medium level, 5,1% low and 41,5% - very low levels of knowledge about culture and ethics. Of second-year students 28,3% showed medium level, 54,7% low and 17% very low levels of knowledge.

The students' ability for empathy is displayed mutedly. No students with high empathic abilities were revealed. 24,5% of first-year students have medium abilities for empathy and 15,1% of second-year students, low levels – 54,7% and 58,5%, very low – 20,8% and 26,4% correspondingly.

Students' activity-creative component is poorly developed. 56.6% of second-year students and 43.4% of first-year students can make moral choice guided by moral principles only in personally significant situations. Students' behavior is moral only in relation to close people and personally important nature objects. Students named the following moral actions: helping their parents about the house, taking care of domestic animals, working in the garden, making birdhouses, feeding birds and stray animals, planting acorns in the forest, not throwing trash on the ground.

The student's learner-centered component is clearly insufficiently developed. We see that only superficial interrelations of natural phenomena and processes, people relations, and also between society and nature are realized. A little more than 30% of second-year students displayed their ability for analysis and evaluation of phenomena in objective reality. Only 22.6% of students are able to foresee not only the

immediate but also distant consequences of their own and others' actions. As for the first-year students, this component is at an even lower level of development.

Cognitive, learner-centered and activity-creative components proved slightly higher for second-year students, while the first-year students' axiological component's indices are higher.

Thus, our experiment showed that there is a certain orientation towards the development of cognitive and professionally-active components in the future teacher's training and, accordingly, poor development of axiological and personality-related components.

3.2. Experimental work on organization of Bachelors' learner-centered training

The study took five years (2011-2016). For this purpose a 12-hour integrated course "Axiological fundamentals of natural science disciplines in a modern teacher's practice" was designed. The course covered the following themes: "Moral values and their significance in a modern teacher's practice", "Value and moral fundamentals in natural science practice", "Moral values in natural science disciplines' content", "Fundamentals of learners' ethic education in teaching Biology". The purpose of the course is to study the "portrait gallery" of outstanding scientists and pedagogues in the field of natural sciences, to form students' moral ideals and values. To get a pass it was required to write a report on life and scientific career of a scientist. The report was to present not only biographical facts, which may be useful but, first and foremost, the scientist's moral outlook. Illustrations of historical, socio-cultural and scientific background of genesis of the given scientists' scientific, professional and ethic insights allow to form moral and ethic evaluation of the courage of scientific ideas. The study of issues about moral and ethic contradictions and problems in relations between representatives of different scientific views, overcoming conflict and crisis situations on the example of historical personalities is vital to develop a future pedagogue's moral ideal.

In training we used personality-oriented situations of problem and moral character. It is possible to create such situations and practice managing situations skills while organizing practices of students' gaining initial skills and habits. For example, training practice in "Structural Botany" sets in the student camp of Elabuga Institute KFU "Burevestnik", where students apply the gained skills of "surviving" in nature and society.

The given conditions promote the development of students' senses of collectivism, responsibility, mutual assistance, habits of self-organization, self-education, love for native land, they form behavior culture in nature and society. Situations frequently come up when one has to make moral choice and solve ethic problems. Consequently, the essential task of the practice is to create conditions for a wide range of choices for future pedagogues. The lack of life experience and knowledge doesn't allow students to be aware of the diversity of managing a situation. Under the circumstances, the teacher ought to display his/her evaluation of a particular choice. What is wise for him to do is to avoid categorical ways of expressing his/her evaluation. The student always must have the right to make his/her own choice without a fear of being rejected. It is feasible when there is respectful attitude for the student's personality, who is an equal partner in any common activity according pedagogics of collaboration principles.

Some researchers (Frischknecht & Branderburg, 1981) note that in solving environmental problems one of shortcomings is taking into account mostly natural sciences while contributions from

other sciences, the Humanities in particular, are not considered. It seems to us possible to create learner-centered situations employing literary texts by well-known classics of Russian literature. In all, 50 tasks of such kind were worked out, some of them by students.

When designing these situations their essential characteristics were considered: 1) a situation is expected to promote integrating the suggested experience in context of the learner's familiar background and solving personally significant problems; 2) dialogue as a way of acquiring personal experience; 3) a play as a form of a learner-centered situation which allows an individual to develop his/her own world in which he/she "plays" his/her roles and creates his/her own reality.

Once, being on an excursion in the park in spring an ecological and moral problem of birch trees' death caused by barbarian extraction of birch sap was realized calling for solution. For this we used the poem by Tolstoy (Seasons, 1977):

Ostroyu sekiroy ranena ber'yoza,
Po kore srebristoy pokatilis' cl'yozy;
Ty ne plach', ber'yoza, bednaya, ne setuy!
Rana ne smertel'na, vylechitsya k letu,
Budesh krasovatsya, list'yamy ubrana...
Lish' bol'noe serdse ne zal'echit ranu! (p.55)

Together with students the following questions were discussed: What is the importance of the problem described in the poem? What is your attitude to such problems? What feelings does the poem bring up? How can one help nature to restore in this situation? How can one use the poem working with school students?

The similar questions were asked when analyzing the short story by Prishvin "Bird cherry tree":

Bird cherry trees began to blossom yesterday and the whole town took the branches with white flowers home. I know one tree in the woods: it has been struggling for its life for many years, it tries to grow higher, avoiding hands breaking it and it did succeed — now the bird cherry tree is all naked as a palm, without a single branch and one cannot climb it. Only at the very top it blossoms. Another tree has not survived, it withered, you can see only protruding sticks (Prishvin, 1984).

We also widely used visual aids: posters, herbarium, drawings, models, damp preparations, etc. Students are engaged in making visual aids at extra-curricular time during training practices. As a result, they develop appropriate skills, a high level of activity, personal attitude to the content of training, and also personal qualities such as perseverance, patience, attentiveness, accuracy, diligence, enthusiasm, responsibility, aesthetic taste, etc.

At the end of each class, new concepts of the theme were reflected from the axiological angle. For this purpose, students were asked to write cinquain or diamond. All their works were discussed and analyzed at the end of the lesson with use of self-control and peer control techniques.

The willingness of the individual to behave in the natural environment freely, consciously and competently is realized in the stock of special knowledge, purposeful skills and habits "... and foreseeing the results of their actions, awareness of their actions, finding appropriate means." Therefore, special and additional knowledge about objects of special value which are subject to protection is gained, as well as the information on their rational use (for example, the objects of the National Park "Nizhnyaya Kama": Bolshoy Bor, Elabuga meadows, etc.). Among other activities are: visits to the forest nursery, to the

wildlife museum, there were meetings with researchers of the national park “Nizhnyaya Kama”, feasible assistance to these institutions was rendered (planting fir trees and pines in the forest, gathering acorns, cleaning up garbage in the forest, cleaning riverbeds and brooks, making and hanging birdfeeders and birdhouses), exhibits were made for the university zoological museum and classrooms, etc. From the obtained visual impressions, from the experience of direct communication with people and live natural objects, collective work for the common good it is possible to awaken a personal value- moral attitude to natural and one’s own environment. All this contributes to the study of natural science disciplines.

4. Purpose of the Study

The purpose of the study is to consider the learner-centered education possibilities in training Bachelors of Biology for professionally-related practice in school education.

5. Research Methods

The current study uses traditional methods of scientific knowledge along with various natural science methods: systematically-structural, dialogical, longitudinal (5 years for the present study), analysis and synthesis.

6. Findings

6.1. Results of the control experiment

The additional diagnostic procedures carried out in the course of the experimental study revealed that the greatest and fastest effect was provided by creating learner-centered situations of problem and moral character which required from the teacher and students to display a personal and sense attitude. In the process of resolving such situations value-moral information was digested by students more effectively, they showed higher interest and a deep emotional attitude to the environmental and moral problems under discussion and to value-moral activity.

As a result, the qualitative growth of the activity-creative component was achieved: students have begun to treat natural processes and phenomena more consciously evaluating them through mutual influence on man’s life and activity, they have become more patient to each other. The students’ interest in environmental and moral issues has enhanced, as well as their aspiration to take part in their solution. The results of the control experiment are shown in Table 02.

Table 02. Results of the control experiment

Level	Cognitive		Axiological		Activity-creative		Personality-related	
	The 1st year students	The 2 nd year students	The 1st year students	The 2 nd year students	The 1st year students	The 2 nd year students	The 1st year students	The 2 nd year students
High	7,4	7,1	3,7	-	11,1	10,7	11,2	25,0
Medium	44,5	39,3	33,3	42,9	63,0	64,3	44,4	64,3
Low	33,3	53,6	55,6	50,0	22,2	25,0	44,4	10,7
Very low	14,8	-	7,4	7,1	3,7	-	-	-

7. Conclusion

The experimental work revealed that using learner-centered situations on the basis of interdisciplinary relations of natural sciences and the Humanities in the teachers' training college promotes forming professional competence of future teachers. The research results show that educational process based on the personality-oriented approach will be more effective if to implement the following conditions: modeling of problem-based educational situations of various types and levels of complexity; the teacher and student's collaboration in the learning process; verbalization of the sense of their collaboration and the analysis of its effectiveness.

Modeling and proper resolution of personality-oriented situations in Bachelors' of Biology training urges to be conscious of ecological problems that arise from people's consumer attitude to nature, which develops cognitive competence, the ability to establish cause-effect relations. We predict that in future students will be able to manage the analysis and resolution of learner-centered situations in their professional practice.

The prospects for the development of this research can be revealed in implementing the approved material into the practice of Bachelors' of Natural Science training, also they can be of use in teachers' CPD courses, in replenishing learner-centered situations content, in designing a special course "Personality-oriented situation: theory and practice of use".

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