

Anthropology of Teacher Training in Interdisciplinary and Digital Education

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Abstract

Problem statement: Anthropological specifics of both students and teachers are not adequately taken into consideration in teacher training in the context of interdisciplinary and digital education. The article investigates the problems of anthropology in pedagogical education, i.e. the inherent nature of teacher training in interdisciplinary and digital educational environment.

The results of the research. Based on the results of a survey on motivation (eagerness) to work as a school teacher conducted among school students, teachers, students, and parents (1435 respondents from Russia and foreign countries), a matrix of significant problems (core, key, autonomous, local) was obtained. Problem analysis according to Prigozhin revealed the anthropological nature of the problems, which characterize crisis situations in the system of teacher training in universities both in Russia and Western Europe. An anthropological mechanism for enhancement of the efficiency of teacher training was as elaborated following the study of crisis situations. The anthropological mechanism acted on the basis of interdisciplinary and digital integration of specialized training in schools, professional training in colleges and universities. The educational process in schools took the form of tutoring and mentoring; in such conditions school students gradually developed motivation (interest to the teaching profession) and at the same time advanced in pedagogical competence.

In terms of content, the anthropological mechanism involves the implementation of three aspects of the professional orientation of the content of both general education and additional interdisciplinary courses and digital resources:

- 1 – cognitive aspect, which involves the familiarization of school students with the specifics of teacher's profession;
- 2 – moral and ethical aspect, aimed at introducing students to the norms of behavior of people involved in the educational field;
- 3 – value aspect associated with the development of pedagogical views, concepts and understanding among school students.

In the process of implementation of these aspects it was important to develop in high school students not just respect for teachers, the objective was to cultivate their love for teaching, to awake their interest in scientific discoveries and teaching children, to form concepts of pedagogical culture, pedagogical honor, duty, responsibility, pride in the right to be called a teacher, etc. Digital educational resources developed at the University were in the form of modules focused on pre-specialization, specialized and professional training of students.

Keywords ¹

anthropology, teacher training, teacher education, interdisciplinary, mechanism.

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1. Introduction

The development of various forms of interdisciplinary and digital education in the system of professional teacher training requires an objective assessment of the positive and negative aspects of the impact of these forms on the quality of pedagogical education.

Unfortunately, traditional scientometric and statistical methods of assessing the quality of pedagogical education, in terms of the effects of interdisciplinary and digital forms, have so far not produced an objective view of the situation.

Purpose of the study. The study was aimed at determining the anthropological specifics of pedagogical education, developing an anthropological (functional) mechanism of teacher training in classic universities on the basis of interdisciplinary and digital integration of specialized training in schools, professional training in teacher training colleges and classic universities.

Research methods. This study rests on the philosophical and pedagogical views of Kant I., K.D. Ushinsky, L.S.Vygotskiy, B.G.Ananiev, E.V.Ilienkov, D.B.Elkonin, V.A.Sukhomlinskiy, M.I. Makhmutov et al. – the view of a person as an educator and educatee, the organization of the educational process taking into account the internal (inherent) features of subjects of education.

2. Problem Statement

The review of scientific and methodological literature, information obtained from the media shows that there is currently an urgent need for different – anthropological – mechanisms of organization of teacher training for educational institutions, for objective diagnostic monitoring of the needs and real possibilities of educators and educatees; mechanisms of proactive and advanced development of new (identified by diagnostics) didactic materials (no matter in what form they are available – hard copy books or digitally-stored as electronic educational resources); mechanisms of experimental verification, approbation of new didactic materials (with the participation of both educators and educatees), etc.

3. Purpose and objectives of the research

What is required here is the anthropological methods that address the internal organic features of pedagogical education. Many scientists have mentioned this in their philosophical and pedagogical works (Kant, 1999; Ushinsky, 1974; Makhmutov, 1977; Novichkov, 2012, etc.). However, while many people in the XIX and XX centuries wrote about the need to study the organic nature of pedagogical education, in the XXI century the matter is not even mentioned.

The didactics of teacher training, not yet firmly established, was practically consigned to oblivion. Scientometry has become the defining coordinator of the development of pedagogical education. However, it does not yet help to determine the reference frame for the development of pedagogical education, which is experiencing a deep crisis in the XXI century.

Currently, teacher training in Russia is more associated with the search for new models (Margolis, 2015; Darling-Hammond, 1999; David C. Berliner, 2002), technologies (Blinov, Dulinov, Esenina, Sergeev, 2019; Alekseeva, 2015; Gvozdeva, 2014; Zavyalova, 2011; Gafurov, 2019), new didactic principles and new didactics (Spivakovsky, Petukhova, Kravtsov, Voropay, Kotkova, 2016), new mechanisms (Menter, 2015; Gabdulchakov, 2019) for the organization of pedagogical education. All of them are currently controversial: Russia has no uniform methodology, no uniform frame of reference for the organization of teacher training.

The educational activity of Russian teacher training universities runs counter to the scientific one: the education is focused on the domestic market (shortage of teachers in the regions), the pedagogical science focuses on the Western (scientometric) market (methodological ideas are to be published in Scopus- and Web of Science-indexed journals). In these conditions, the status of teachers in Russia is at its historic low. Against the background of constantly growing demands on the teacher, the profession is now not protected by the pedagogical science, nor the school officials, nor the state, nor the media, nor even parents and students. The same situation pertains in many European countries. Only that in Britain there is a saying: Teacher: Being one is the highest privilege. Having one is the best blessing. Neither the former nor the latter applies to Russia.

The cultural and historical concept of Vygotsky (Vygotsky, 1928), the modern interpretation of the phenomenon of childhood, the game as the major type of activity, in fact, not only have raised the

child to the height beyond reach, but also have brought the teacher to the lowest level of the social hierarchy. Many people forget that no matter what game children are playing, they still pattern themselves on an adult, because they dream of becoming adults as quickly as possible. And in an adult person children not a child equal to them but an adult who they would like to become. Many teachers are now afraid to say that equality sometimes results in low conduct and all-permissiveness in children. Practicing educators realize that while observing the equality, the child should still have respect for the adult, especially the teacher as a provider of knowledge, wisdom and culture.

Cruel games of children, examples of disrespectful attitude to teachers in kindergartens, schools, universities are constantly discussed in the mass media ("Let them talk" - the First channel of Russian television), thereby supporting a negative image of teachers and Russian education among viewers.

Admittedly, the cooperation of teacher training universities and other educational institutions in some cases is either declarative or formal: such methodological systems as tutoring, mentoring are virtually non-functional and the anthropological properties of cooperation (in the context of teacher training) are still neither properly taken into account nor studied.

Interdisciplinary links and digital resources actively developing in the modern field of education are making a significant difference to the theory and methodology of professional training of future teachers. In this regard, the experience of scientific and methodological support of the educational process in classes specializing in pedagogics in the Republic of Belarus deserves attention (Poznyak, Egorova, Titovets, Baranova, 2018). Russia also has such experience, but it is merely based on individual enthusiasm.

4. Purpose and objectives of the research

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Research Questions

4.1. Objective of the study

The objective of the study was to determine the method for developing an anthropological mechanism of teacher training in the context of interdisciplinary and digital content on the basis of the identified significant problems of teacher training. We have already addressed a number of problems related to process organization of teacher training (Gabdulchakov, 2019). However, the anthropological aspect is still an open area of research. Anthropology involves identification of particular characteristics of the educational process and the subjects participating in the process (school students and students, as well as teachers and professors).

4.2. Research Questions

The research was aimed at the following questions:

What is the anthropology of teacher training in today's environment?

How do applicants, students, high school students, school teachers, parents, professors at teacher training universities see the problems of motivation to become a teacher?

How can the process of specialization and professional training of students who want to work in the school be selected and organized?

How can an anthropological mechanism of teacher training be built in the context of cooperation between the school and the university and the development of interdisciplinary and digital education?

How can the efficiency of the anthropological mechanism of teacher training be checked?

5. Methodology

The methodology of this study rests on the philosophical and pedagogical views of Kant I., Ushinsky K.D., L.S.Vygotskiy, B.G.Ananiev, E.V.Ilienkov, D.B.Elkonin, V.A.Sukhomlinskiy, Makhmutov M.I. , etc. – the view of a person as an educator and educatee, the organization of the educational process taking into account the internal (inherent) features of subjects of education.

Research methods: survey, interviewing, core competency model (Hamel and Prahalad, 2014); method for determining significant problems (Prigozhin, 2007), pedagogical experiment.

The research was organized on the basis of secondary school No. 112, gymnasium No. 52 in the city of Kazan, gymnasium No. 3 in the city of Zelenodolsk, structural units (departments and lyceums) of Kazan Federal University (Russia).

6. Results

The review of the results of surveys (2007-2019) based on the "key competence" concept (Hamel and Prahalad, 2014) allowed us to obtain a matrix of significant problems. According to typology suggested by Prigozhin A. I. (Prigozhin, 2007) the problems were classified into three categories: embedded, sociocultural and situational, and problem formulations were classified into nominal, cause-and-effect and antithetic. Thus a matrix of the problems characterizing not only anthropological specifics of teacher training, but also crisis situations of modern pedagogical education was received.

The survey of school students, teachers, students, parents (1435 respondents were interviewed in Russia and abroad) on motivation (eagerness) to work as a school teacher led us to the conclusion that all problems arising in connection with motivation are of anthropological nature: they characterize crisis situations in the system of teacher training both in universities of Russia and in universities of Western Europe.

In the process of selection of respondents among teachers (347 persons), school students (453 persons), university professors (328 persons), parents (307 persons) it became clear that the main problem of pedagogical education in Russia is the lack of continuity between the school and the university.

The point is that applicants gain the entrance qualifications for pedagogical departments of universities by the results of the Unified State Exam, which means that the university is deprived of the right to take into account the anthropological characteristics of applicants: personal, motivational, intellectual, psychological, pedagogical, communication, etc. As a result of "blind" enrollment, the applicants motivated for becoming teachers can often become students only by paying tuition. Some get offended by the fact and deny themselves a possibility of becoming teachers, others just cannot afford to pay the tuition. Most applicants enter the department of educational studies not due to the desire to become a teacher, but since this gives them a possibility to be enrolled by the results of the Unified State Exam. Therefore, after graduation, only 10% to 12% of such graduates work in schools.

Moreover, young people who have received higher pedagogical education without the necessary motivation to work at school, join the ranks of people with unjustified social expectations (of a certain social status and material well-being); their voluntary or frictional unemployment (when they do not want to work at school and do odd jobs) causes social tension in the society and the country.

7. Discussion

Our research allowed us to develop one of the possible mechanisms for the implementation of pedagogical education – anthropological (functional) mechanism. We represent it as a mechanism, which takes into account the inherent nature of motivation of students and trainers, a mechanism of practical motivation and preparation of both school and university students for teaching profession. The mechanism involves integration of specialized and professional pedagogical training of future teachers starting from school age. The educational process in schools took the form of mentoring, in such conditions school students gradually developed motivation (interest to the teaching profession) and at the same time advanced in pedagogical competence.

The mechanism has been tested in educational institutions of the Republic of Tatarstan for 12 years (2007-2019).

Based on the practical experience of Russian schools with in-depth study of particular subjects, gymnasiums (with advanced study of physics, mathematics, chemistry, languages), secondary schools in England (Menter, 2015), schools in Belarus (Poznyak, Egorova, Titovets, Baranova, 2018), specialized pedagogical classes (8th and 9th grades, and 10th and 11th grades) were opened in base educational institutions of Kazan Federal University (secondary school No. 112 with in-depth study of particular subjects, gymnasium No. 52 in the city of Kazan, gymnasium No. 3 in the city of Zelenodolsk) (see Fig. 1).

The students selected for the classes were those motivated to enter pedagogical institutions (colleges, universities), having leadership qualities, communicative abilities and interested in certain subjects (liberal arts or natural sciences). Apart from in-depth study of the subject in the classes, additional elective courses were offered on the history of pedagogical thought, pedagogical psychology, theory and methodology of teaching, pedagogical rhetoric, etc. and short-term teaching practicum was organized for the students acting as an assistant teacher or independent teacher. Meetings were held with famous teachers (young – winners of teacher competitions, and experienced – honored and recognized practitioners).

The model has an open basis and, upon receiving Bachelor's degree, a young teacher can continue education by applying for Master degree program, postgraduate course and further for PhD program in educational sciences.

The first level of training starts in the 8th and 9th year classes specializing in educational sciences (pre-specialization training), the second level is the 10th and 11th year classes specializing in educational sciences (with specialized training in pedagogics) – the alternative is a teacher training college (training pre-school and primary school teachers), the third level refers to university undergraduate degree programs; high school graduates can start from the first year and college graduates – from the third year (reduced curriculum). Master's, postgraduate and PhD programs in pedagogics represent the highest level of pedagogical self-realization of students; this level involves the organization of tutoring and mentoring, as well as conducting independent research and methodological activities.

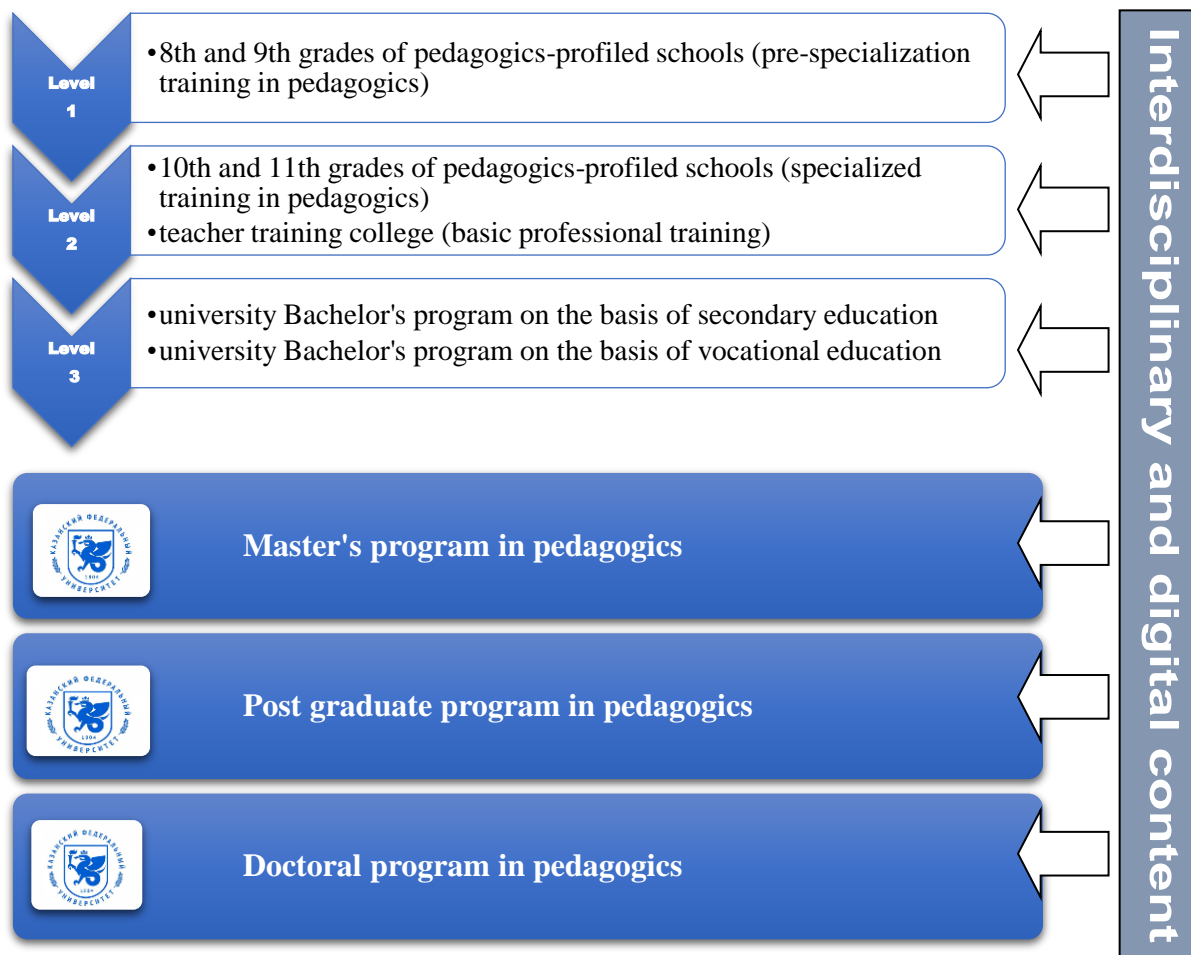


Figure 1: Model of specialized and professional training

Almost all school teachers and university professors fulfill the role of tutors responsible for specialization of the content. Each tutor is responsible for 2-3 students. The tutor acts not only as an instructor, but also as a coacher responsible for the quality of specialized training.

The students undertaking teaching practice in the schools alternately acted as teacher's assistants, teachers and homeroom teachers.

In mentorship, a mentor is usually a university professor with an extensive experience in both school and university teaching. School students perceive him as a tutor who knows his subject (mathematics, physics, chemistry or Russian language) and the art of pedagogical interpretation of the content of this subject.

In terms of content, the anthropological mechanism involves the implementation of three aspects of the professional orientation of the content of both general education and additional specialized interdisciplinary courses and digital resources:

1st aspect – cognitive, involves the familiarization of school students with the specifics of teacher's profession;

2nd aspect – moral and ethical, aimed at introducing students to the norms of behavior of people involved in the educational field;

3 – value aspect associated with the development of pedagogical views, concepts and understanding among school students.

It was important to develop in high school students not just respect for teachers, the objective was to cultivate their love for teaching, to awake their interest in scientific discoveries and teaching children, to form concepts of pedagogical culture, pedagogical honor, duty, responsibility, pride in the right to be called a teacher, etc.

Interdisciplinary approach was used in the conditions of specialized training of school students: many (not only major) general education subjects were integrated with the subjects of professional training (pedagogical psychology, didactics, methodology). Most of the professional training subjects were available for school teachers and high school students via a search engine on the website of the Kazan Federal University edu.kpfu.ru.

School students could explore primary school teacher's role as early as in the 9th grade year. Successful teaching practicum made possible their professional identification in the teaching profession: some enrolled in a teacher training college, others became firmly convinced in their choice and continued their studies in 10th and 11th grades with the purpose of getting university education, others refused pedagogical field having lost interest in the teaching profession after failing to communicate with children in primary school.

Although structurally the pedagogical class persisted as an integral unit both for 8th and 9th graders, and for 10th and 11th graders, the interest in the teaching profession among school students varied (see Tables 1, 2, 3, and 4).

While almost all 8th graders who had entered the pedagogical class showed interest in the pedagogical profession (95% to 97%), approximately 20% of the 9th graders lost this interest (after teaching practicum in primary school) with about 70% still interested. Of these 70% of school students, an average of 23% enrolled in teacher training college, the remaining 47% went continued their studies in 10th and 11th grades.

It is clear that the composition of the students attending the 10th grade was different again: one half of the class were students who had already passed the initial professional pedagogical training in the 8th and 9th grades, the other half were students from other schools who wanted to try themselves in the pedagogical class in the 10th and 11th grade years not so much from the desire to become a teacher, but from the desire to receive in-depth training in the subject.

Less than half of the school students who entered the 10th pedagogical class showed interest in the teaching profession, but in the 11th grade (upon completion of teaching practicum with 5th and 6th graders) this interest increased (by 20% on average) from 45% to 65%.

Almost all high school graduates (which amounts to about 65% of the students in the class) who had chosen the teaching profession in the 11th grade continued their education in pedagogical universities (mainly on a contract form) and continued to work in educational institutions after graduation without changing their professional field.

Table 1

Interest of school students teaching profession in school No. 112 in the city of Kazan (percentage)

Grade	Class 8	Class 9	10th grade	11th grade
Interest (2017)	95	76	45	67
Interest (2018)	90	71	48	65
Interest (2019)	92	73	46	61

Table 2

Interest of school students teaching profession in gymnasium No. 52 in the city of Kazan (percentage)

Grade	8th grade	9th grade	10th grade	11th grade
Interest (2017)	94	74	46	65
Interest (2018)	91	72	47	64
Interest (2019)	92	74	47	62

Table 3

Interest of school students teaching profession in gymnasium No. 3 in the city of Zelenodolsk (percentage)

Grade	8th grade	9th grade	10th grade	11th grade
Interest (2017)	94	75	45	66
Interest (2018)	92	72	47	67
Interest (2019)	92	74	45	63

Table 4

Interest of school students teaching profession in gymnasium No. 10 in the city of Zelenodolsk (percentage)

Grade	8th grade	9th grade	10th grade	11th grade
Interest (2017)	96	77	45	67
Interest (2018)	93	73	44	63
Interest (2019)	94	75	47	60

Figure 2 (see fig. 2) shows the same patterns of increase and decrease in interest in the teaching profession among students of pedagogical classes of 4 educational institutions (school No. 112, gymnasium No. 52 in the city of Kazan, gymnasiums No. 3 and No. 10 in the city of Zelenodolsk) over the last three years (2017-2019). Similar decrease among the 10th graders is due to the fact that more than half of the students did not have initial teacher training and chose a pedagogical class because of the opportunity to receive advanced subject training. About 60% of the 11th grade graduates consciously chose the teaching profession and successfully entered pedagogical faculties of the University.

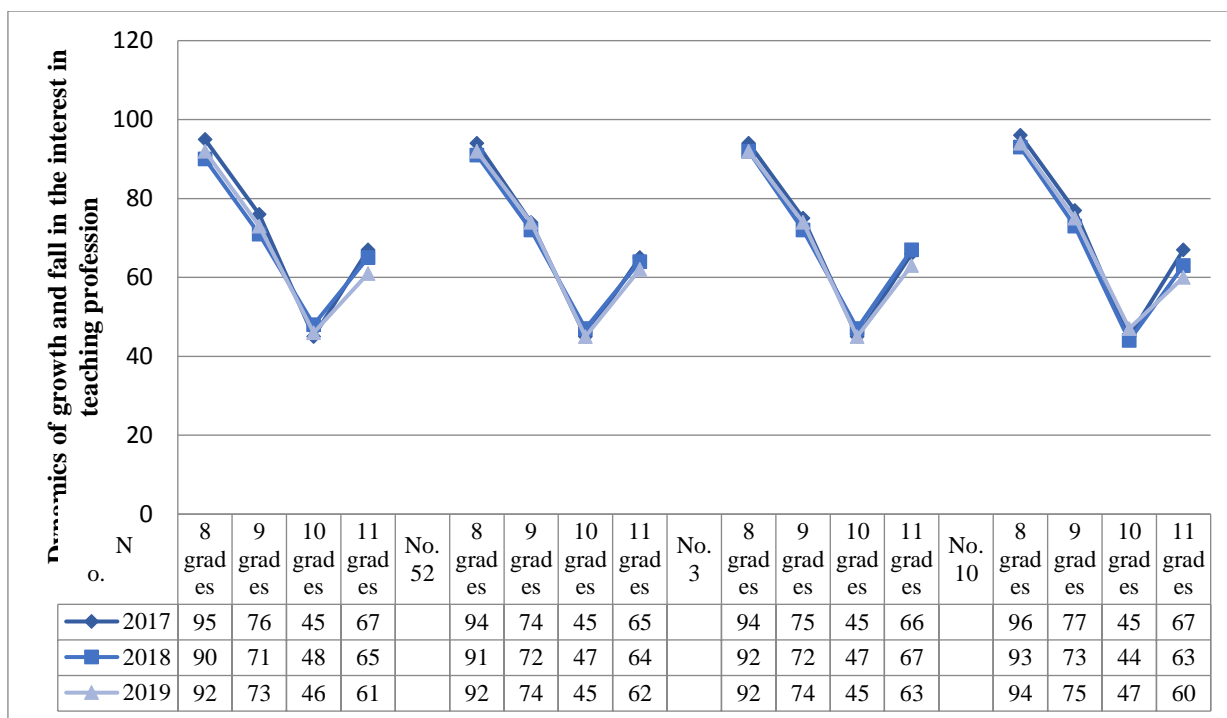


Figure 2: Dynamics of growth and fall in the interest of school students studying in specialized pedagogical classes in teaching profession

Students who finished pedagogical classes, stood out against the general background of students due to their dedication and desire to get maximum knowledge, skills, professional competencies required to work as a school teacher.

Analysis of statistical data shows that almost all graduates of the University who had had first specialized and then professional training work in educational institutions.

Such nearly absolute employment of University graduates who received integrative subject, pre-specialization, specialized and professional training in pedagogical classes (or pedagogical college) and then in the University, has become an important evidence of the effectiveness of the implemented anthropological mechanism.

The research shows that many problems of teacher training are connected with the problems of anthropology of pedagogical education: state-financed admission is reduced year by year, the cost of training on a contractual basis is growing; the existing system of random admission of applicants (without regard to anthropological characteristics) in Russia should be changed radically.

The anthropology of high school students inspired for the pedagogical profession (with focus on the development of high moral qualities - kindness, justice, decency) is such that they are not always ready to socialize in market conditions and to do business or part-time work concurrently with the main job. Therefore, a differentiated approach is required for such applicants, taking into account the social order of the State as defined in the National project "Education". Higher pedagogical education should be anthropological and accessible to people of different social backgrounds in Russian society.

Furthermore, the pedagogical specialization in schools with in-depth study of subjects or gymnasiums is virtually nonexistent and is maintained and developed only at the level of enthusiasm: no financial instrument devised to support this activity is available at the moment.

8. Conclusions

Anthropology of teacher training in the context of interdisciplinary and digital education shall take into account:

- motivation of students to undertake pedagogical activity not in the last year of University studies (as we have it now in Russia) but starting from school years (as it is done in some schools of England, Belarus and other countries);

- aspects of interdisciplinary training: it should be integrated, cross-curricular (major subjects should be integrated with additional psychological and pedagogical courses);
- specifics of modern digital education: training should be provided with digital resources (the student should use the network resources of the University pertaining to the teaching profession);
- personification: training should be natural, individualized, personality-oriented, i.e. it should take into account the actual interests and needs of students, meet their cognitive needs and activate the zone of immediate development;
- phasing (consistency) going from pre-specialized training and specialization in school to professional self-determination and training in college or university.

The anthropological (functional) mechanism of implementation of pedagogical education has become the main result of the conducted research. It is presented as a mechanism of practical motivation and training of school students and students for teaching profession.

The mechanism involves integration of specialized and professional pedagogical training of future teachers (pre-school, primary and secondary school teachers) starting from the 8th and 9th, and 10th and 11th grades of general high school using the means of interdisciplinary and digital education.

This mechanism can be used in establishing cooperation between the school and teacher training university.

The results obtained in the study made it possible to formulate recommendations for the effective use of the anthropological mechanism of teacher training. The mechanism should take into account:

- 1) the inherent nature of pedagogical education, motivation, concerns of the subjects involved in it;
- 2) organization of pre-specialization and specialized pedagogical classes in schools;
- 3) interdisciplinary and digital integration of specialized pedagogical training in schools with professional pedagogical training in teacher training colleges and classical universities.

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