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Anthropological Model of Specialist Training at University

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Abstract

The subject matter is the search for an effective model of specialist training at university. While analyzing the problems of teacher training for preschool education we discovered that this education is mainly academic, far from practice and the developed methodological ideas. The methodology of the study is based on the statement that thinking and speech are interdependent processes (Vygotsky, 1999), as well as on the structural approach to communication analysis (Morgenthaler, 1980). The study lasted for three years (2017-2020). They were used in cognitive, i.e. literature, speech and rhetoric classes. All together 8 groups of exercises were used in the experiment: 4 groups of traditional physical training exercises and 4 groups of non-standard musical-dancing ones. Dancing groups of exercises included music and acrobatic rock-and-roll movements (Bogdashin, 2020). The experiment (evidence from developing physical and cognitive regulatory functions in children) result showed that preschool teachers professional training must be of anthropological nature, in other words, be focused on revealing and studying the internal principles of child development; and projecting techniques for preschool education should be based on these principles. All that allowed us to conclude that the anthropological model of specialist training at university should be not only practice-oriented but also research-oriented. Herewith, students' research work must be not just academic but also action-oriented.

Keywords: anthropology model, specialist training, university, preschool education.

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Introduction

Pedagogical anthropology of Immanuel Kant, Jan Amos Komensky, Jean-Jacques Rousseau is focused on studying the interior (natural) principles of child development (Bim-Bad, 2020).

For many years the theoretical provisions by founders of pedagogical anthropology did not mention a teacher as a subject of active interaction with a child, as a person who creates a child's personality, as a person who reveals and develops a child's giftedness and turns it to talent (Jo Bjørkli Helgetun & Ian Menter, 2020).

Even Konstantin Ushinsky, considering a person as a subject of education considered a child in the context of biological, psychic and mental factors. With that, there was no teacher in his anthropology (Ushinsky, 2020).

Recently researchers have started paying attention to teacher's actions and interactions, taking notice of the idea that a child should be treated not as they are but as they can be (Mandavilli, 2018; Kraus, 2018). They may be much better than they are if a teacher becomes a good role model for them.

Consequently, a teacher should be trained in a special way; and professional teacher training should be considered anthropologically, that is in all the aspects. The model of this training is a topical issue of pedagogical anthropology of the 20th century.

This anthropological model should display the following elements: holism and synergy, representing the unity of entirety, interrelation and variability of system phenomena; social medium consisting of genetic, social-cognitive, psychosocial concepts; existentialism including interpretation of mental, technological, behavioral paradigms; digital didactics including cognitive, anthropocentric, humanistic, purely digital aspects of education; methodology disclosing resultative methods of knowledge acquisition, public morals, culture in the context of both traditional and distance education.

The problem is that in modern children of senior preschool age, the ratio of physical and cognitive activity is expressed unevenly and heterogeneously. Traditional physical activity of children began to decline sharply. Children spend a lot of time in front of TV screens, computer monitors, portable gadgets, cell phones.

The question arises if physical activity determines, stimulates, and develops children's cognitive and regulatory functions, how does a sharp decrease in this activity under restrictive measures (the coronavirus pandemic) affect the development of these functions?

The first studies in this direction suggest that the impact is negative (Tvardovskaya, Garifullina, Novik, 2020). A growing child's body requires physical activity (Veraksa & Veraksa, 2020; Popova, 2020). This suggests that preschool teacher training needs changing.

In the study, we supposed that the anthropological model of teacher training should be determined by the problems of real-life practice of preschool education. First, this involves the problems of the ratio of children's physical and cognitive activity. Now everyone understands that it is necessary to develop such techniques of children education and training that would harmonize the process of development of physical, cognitive, regulatory functions of children. University students and practising teachers should master these techniques. The ways of mastering them should be reflected in the models of training specialists for preschool education.

The research task was to develop techniques that determine the content and specifics of the anthropological model of teacher training at the university.

Purpose and objectives of the study

The anthropological model of specialist training at the university should be determined by the specificity of specialization and, of course, the specificity of the problems that modern practice poses to the specialist.

We investigated the problem of preschool teacher training: teachers work according to a new standard, they work with children who differ much from previous children in the ways of development of cognitive regulatory functions (Mandavilli, 2018; Kraus, 2018).

Research Questions:

- to review the literature on techniques that develop children's physical and cognitive functions;
- to develop options for techniques that balance physical and cognitive activities of children;
- to justify the criteria for the effectiveness of the anthropological model of training teachers for preschool education.

Literature review

In the studies of Russian scholars, the question of the correlation of physical and cognitive development of children was raised (Veraksa, 2015; Kirillova, 2008; Klepatskaya, 2012).

At the same time, many studies have shown the ambiguity and heterogeneity of this correlation in the following context: diverse components of self-regulation necessary for further education at school (McClelland & Cameron, 2012); poorly studied mechanisms of prevention, orientation and executive control that affect the activation of cognitive control (Mackie, Van Dam & Fan, 2013); heterogeneous components of cognitive control (Moriguchi & Hiraki, 2013); software technologies CHAMP, developing children's motor functions (Tomprowski et al., 2015); Head Start software technologies that develop voluntary control over impulses of attention, emotions, behavior (Robinson, Palmer & Bub, 2016); transactional mechanisms of visual-motor integration of attention, fine motor skills and mathematical skills of children (Kim et al., 2018); predictors of mental health and social well-being of children (Ureña et al., 2020). In these works, an ambiguous relationship between physical and cognitive functions is noted. However, all the authors emphasize that children's cognitive development is conditioned by their physical development.

Studies that reveal mechanisms of influence on planning and behavior functions are of particular interest (Chang et al., 2011), as well as those on the development of children's regulatory functions (Verburgh et al., 2014) and improving learning outcomes (Norris et al., 2020). These studies provide evidence that it is not any physical activity that contributes to the development of cognitive abilities and regulatory functions of children, but only active, emotional and rhythmic ones. It is noted that the greatest effect is caused by physical activity developing aerobic movements. With that, many authors identify aerobic exercises that affect the development of children's regulatory functions. Simple but intense aerobic exercises help to improve learning outcomes in preschool and better prepare children for school (Kamijo & Abe, 2019).

Methodology

The study is based on the statement that thinking and speech are interdependent processes (Vygotsky, 1999). Vygotsky's theory makes it possible to find the dependence of the children cognitive development on the quality of pedagogical training of kindergarten teachers at the university.

The research methods used in the study are as follows: literature analysis, psycholinguistic methods of analysis of statements, observation methods, pedagogical experiment, methods of mathematical processing the results. When analyzing the literature, it was necessary to find whether there are effective models for training kindergarten teachers, to design our own - anthropological - model, and to test it in practice. Our model was based on the data on the level of children's cognitive and physical development. The questions that we were trying to answer were the following: what techniques an educator should use so that physical development contributes to cognitive development of children; what training model should be used at the university so that students can master those techniques and apply them in kindergarten.

Results

The study was based in the Institute of Psychology and Education of Kazan federal university. The participants of the experiment were students of the extramural department working in preschool institutions of the Republic of Tatarstan. The study lasted for three years (2017-2020); 324 students were the experiment participants in the university and experiment facilitators in preschool institutions. The total number of kindergartens that took part in the experiment was 320, with 6470 children attending them.

All together 8 groups of exercises were used in the experiment: 4 groups of traditional – physical training exercises and 4 groups of non-standard – musical-dancing ones. The dancing group of exercises included music and acrobatic rock-and-roll movements (Bogdashin, 2020).

Here is a brief description of each group.

Group 1 (physical training) included exercise “On toes”, “Bending to the sides”, “Bending forward”, “Playing toes” (sitting on the floor, bending toes alternately), “Scissors” (resting on elbows doing crossed movements with straight legs), “Boat” (lying face down, lift straight arms and legs), “Turns” (to the right, to the left) “Jumps” (in place, alternately on one and the other leg, on two legs).

Group 2 (physical training) included exercises “Scissors movement” (crossed arms movements), “Bending to the sides” (hands on the nape, bend right and left), “Lunge” (springy squats), “Bouncing sock” (alternate touching floor with toes), “Hands on the nape” (squats with hands on the nape), “Toes to the head” (lying face down), “Jumping and marching”.

Group 3 (physical training) included exercises with a hoop – “On back” (move up and over the shoulders), “Bending to the sides” (bending right and left with the hoop), “Bending down” (bending down with the hoop), “Squats” (squats, hoop in front), “Feet apart – hoop down”, “Crab” (feet are in the hoop), “Jumping over the hoop” (on two legs).

Group 4 (physical training) – exercises with a large ball (or stick) “On toes” (arms with the ball behind your head, legs alternately back on toes), “Bending to the sides” (ball up and down, legs shoulder-width apart), “Bending down” (legs shoulder-width apart, bending down with the ball fold to the breast), “Squats” (the ball fold to breast and carried forward on outstretched arms), “Raise the ball with your hands” (sitting, the ball raised up), “Raise the ball toed foot”, “Leg swings” (with the ball in hands over the head), “Turn with the ball”, “Jumping” (ball between knees).

Group 5 (music and dance) included drilling basic steps of acrobatic rock-and-roll “Without changing legs” (each step in the dance begins with the same leg), “With changing legs” (each step in the dance is performed with the other leg for two or four bars); “Common marching in place” (performed on the count of four); “Mambo movement” (the foot that begins the movement is first brought forward, then back).

Group 6 (music and dance) included drilling complicated basic steps – “V-step move” (performed on the count of four with stepping to the 45° angle – this angle was drawn with chalk on the floor), “Cross Move” (cross leg change); “Step-touch Move” (an additional step in two music measures); “Double Step-touch move” (two additional steps from one leg to one side).

Group 7 (music and dance) included “Step-tap move” (step of one foot to the side), “Chasse move” (three moves on the count of two), “Step-lift move” (one step with sway leg), “Step-kick move” (improvisation of a kick), “Step-curl move” (hands behind the back), “Step plie move” (step with a squat).

Group 8 (music and dance) “Double Step-touch move” (two additional steps with one leg), “Step-lift move: front, back, side” (steps when a straight leg is carried forward).

The exercises were included in cognitive classes (in the cognitive sphere of language, folklore, children's literature, culture) (Fairy tales, 2021).

The level of cognitive development of children was assessed by communicative criteria (text criteria, coherent speech).

Among the known criteria of cognitive development of children, the most interesting are the communicative criteria that allow determining the child's ability to retell the text of a fairy tale (Fairy tales, 2021). This ability reflects the child's memory, understanding, thinking, and speech. The ability to correctly retell the text is usually recorded with such indicators as T – topic (what is being said?), MI – the main idea (what exactly is being said about the topic?), IPC – inter-phrase communication (the connection between the sentences of the utterance).

Children's retelling of the works were processed from the point of view of the correctness of the texts, i.e. the correspondence of statements to the indicators T, MI and IPC (see Figure 1).

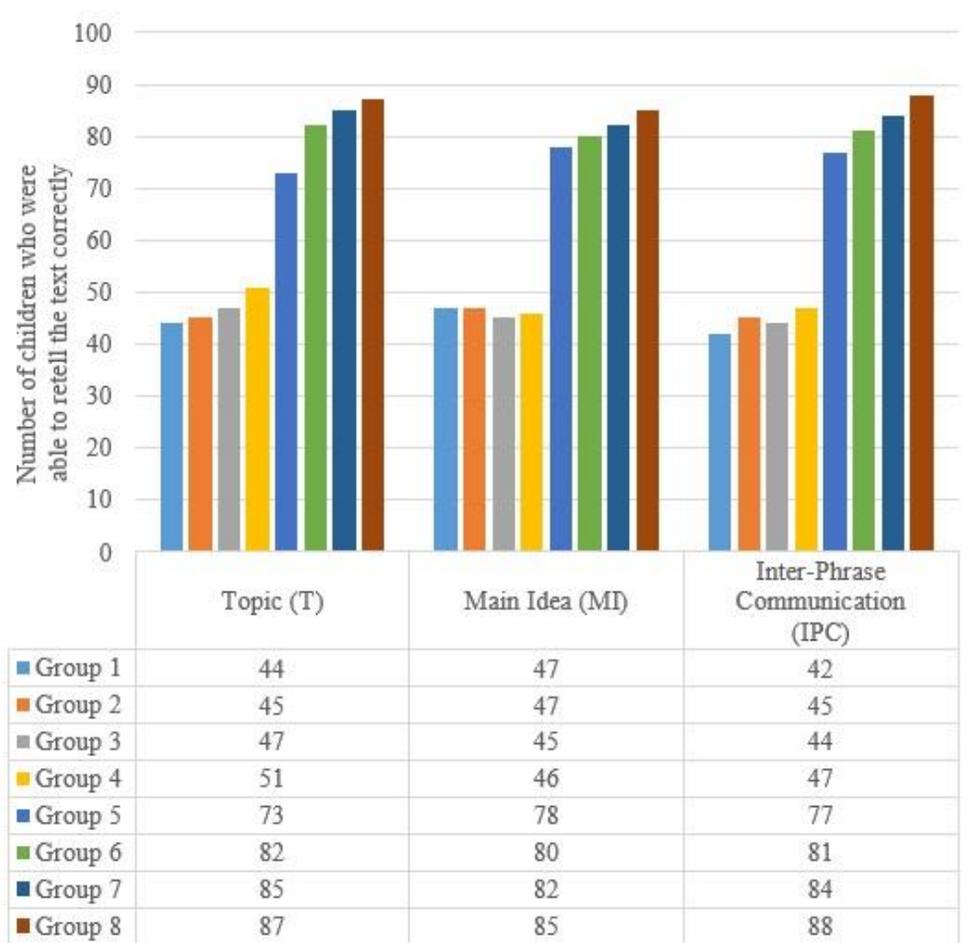


Figure 1. Results of the analysis of senior preschoolers' speaking

The results revealed certain regularities:

- half (from 42 to 51%) of the children of the first four (physical education) groups (1, 2, 3, 4) were able to correctly retell the text;

- the other four groups (music and dance – 5, 6, 7, 8) showed much higher results (from 73 to 88% managed to retell the text correctly).

On average, the effectiveness of acrobatic exercises increased the cognitive (communicative) competence of children by 40%. The obvious advantage of music and dance groups was noticeable both in the children's posture and in more precise coordination of movements, confidence and sociability.

Our assumption that the anthropological model of teacher training should be determined by the problems of real practice of preschool education was confirmed by obtaining new data on the correlation between physical and cognitive development of children.

These data suggest that traditional physical exercises affect the development of children's cognitive abilities (see groups 1, 2, 3, 4 in Figure 1). However, if the content of physical exercises is filled with modern popular music rhythms, these exercises are made emotional and beautiful, the results are much higher (see groups 5, 6, 7, 8 in figure 1).

Thus, the anthropological model of teacher training for preschool education should be not only academic but also practice-oriented. Moreover, its effectiveness will increase if university students take an active part in research (experimental) work directly in preschool institutions.

The study shows that the anthropological model of training kindergarten teachers should be:

- practice-oriented, i.e., stipulate not formal memorizing the methods and forms of working with children, but involve organizing real research of theoretical and practical issues of physical and cognitive development of children, modern (interesting for children) techniques to work with them;
- research-oriented, i.e., assume not only memorizing the list of research methods but also organizing diagnostic and procedural research on working with children;
- personalized, i.e., this model should take into account personal abilities of every student, and a student should take into account the individual characteristics of every child.

Discussions

The study showed that the existing models of teacher training are far from educational practice. The practice of preschool education is characterized by continuous development of creativity, methodical updating of traditional schemes of child development. Universities tend to be academic in both the content and the system of teacher training. The practical orientation indicated in the standards, educational programs, forms and methods of graduates' certification is in fact often declarative.

Now we need an anthropological model of training that will focus on studying not only the problems of university education but also the problems of practical work of students – internal problems of preschool education. One of these problems is the problem of the ratio of children physical and cognitive development. This problem has become more acute in the context of the coronavirus pandemic and digitalization of education and it is a problem not only for teachers but also for parents.

Of course, there are still more problems. Unfortunately, their solution is still disconnected from the professional training of specialists at the university. The anthropological model, which is practice and research-oriented, is still a model of the future.

Conclusion

The research task was to develop techniques that determine the content and specifics of the anthropological model of teacher training at the university.

Analysis of the scientific literature has shown that such techniques now include those that develop physical and cognitive functions of children. Diagnostic studies of specialists from different countries have shown a special interest in aerobic exercise. It has been observed that they have a greater impact on the development of cognitive regulatory functions.

In the study, based on traditional teaching methods, we developed the versions that balance physical and cognitive activities of children (including traditional elements of movement and new – dancing acrobatic – elements of movement). Their wide-scale testing in preschool institutions of Tatarstan showed that modern dance rhythms and movements have a greater impact on the development of cognitive regulatory functions.

All that allowed us to conclude that the anthropological model of specialist training at university should be not only practice-oriented but also research-oriented and creative.

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